

# IBC — General



2015 GROUP A PUBLIC COMMENT AGENDA

SEPTEMBER 30 – OCTOBER 5, 2015  
LONG BEACH CONVENTION CENTER  
LONG BEACH, CA

*First Printing*

Publication Date: August 2015

Copyright © 2015

by

International Code Council, Inc.

ALL RIGHTS RESERVED. This 2015 Public Comment Agenda is a copyrighted work owned by the International Code Council, Inc. Without advance written permission from the copyright owner, no part of this book may be reproduced, distributed, or transmitted in any form or by any means, including, without limitations, electronic, optical or mechanical means (by way of example and not limitation, photocopying, or recording by or in an information storage retrieval system). For information on permission to copy material exceeding fair use, please contact: Publications, 4051 West Flossmoor Road, Country Club Hills IL, 60478-5795 (Phone 888-ICC-SAFE).

Trademarks: "International Code Council," the "International Code Council" logo are trademarks of the International Code Council, Inc.

PRINTED IN THE U.S.A.

# G1-15

## 202

### Proposed Change as Submitted

**Proponent :** Victor Cuevas, representing City of Los Angeles

### 2015 International Building Code

Revise as follows:

#### SECTION 202 DEFINITIONS

**AREA, BUILDING.** The area included within surrounding *exterior walls* (or *exterior walls* and *fire walls*) exclusive of vent *shafts* and *courts*. Areas of the building not provided with surrounding walls shall be included in the building area if such ~~areas are included within the~~ area has horizontal projection of the roof or floor above. Areas underneath any horizontal projections of five feet or more of roofs, balconies or architectural features shall also be included in the building area.

**Reason:** Since the code does not specify how much of a projection (12", 3', or 5') becomes floor area, establishing a threshold becomes necessary.

**Cost Impact:** Will not increase the cost of construction  
This code amendment will not increase the cost of construction since it does not add requirements for changing construction. This proposal only seeks clarification of the code requirements.

G1-15 : 202-AREA,  
BUILDING-CUEVAS4536

---

### Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** Overall the committee felt that the proposed change would add confusion to the code and not ease administration or interpretation. They found the 5 foot dimension arbitrary and unjustified. This would insert a regulation into the definition instead of a more appropriate place in the code. There was concern that this change would confuse the application of the code to marquees and signs as well as eaves and sunshades used to address requirements of the *International Energy Conservation Code*. Finally there was concern that this change to one of the fundamental definitions of the code would have consequences for other provisions not even guessed at during the hearing.

**Assembly Motion:**

**As Submitted**

**Online Vote Results:**

**Failed**

Support: 20.26% (79) Oppose: 79.74% (311)

**Assembly Action :**

**None**

---

### Individual Consideration Agenda

*Public Comment 1:*

**Proponent : Lee Kranz, representing Self requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

## **2015 International Building Code**

### **SECTION 202 DEFINITIONS**

**AREA, BUILDING.** The area included within surrounding *exterior walls* (or *exterior walls* and *fire walls*) exclusive of vent *shafts* and *courts*. ~~Areas of the building located under roofs or floors above not provided with surrounding exterior walls shall be included in the building area if such area has horizontal projection of the roof or floor above. Areas~~ Usable areas located underneath any horizontal projections of five such as roof extensions, impervious balconies or other architectural features that extend 5 feet or more from the exterior wall of roofs, balconies or architectural features the building shall also be included in the building area.

**Commenter's Reason:** This public comment takes the best of both G1-15 and G2-15. It includes the concept of "Usable areas" and applies it to impervious covered areas that extend "5' or more from the exterior wall of the building". The 5' dimension is based on the proponent's original proposal and an informal survey of building officials who agreed that at least this much space is needed in order to consider a covered area to be usable. As written, the example projections would have to meet both criteria of **usable** and would have to extend **at least 5' from the exterior wall** in order to be considered part of the building area. Combining the two concepts of "areas without exterior walls" and the new proposal to include the term "usable" and a "minimum 5' extension" we have a definition that more accurately represents realistic building areas and property values.

---

**G1-15**

# G6-15

## 202

### Proposed Change as Submitted

**Proponent :** Gerald Anderson, City of Overland Park, Kansas, representing self (Jerry.Anderson@opkansas.org)

## 2015 International Building Code

Revise as follows:

### SECTION 202 DEFINITIONS

**CUSTODIAL CARE.** Assistance with day-to-day living tasks; such as assistance with cooking, taking medication, bathing, using toilet facilities and other tasks of daily living. Custodial care includes persons receiving care who have ~~the ability to respond to emergency situations and evacuate at a slower rate and/or who have~~ mental and psychiatric complications.

**Reason:** With this definition we are trying to define or expand upon what exactly "Custodial Care" entails. A persons ability to respond to emergency situations has no connection with the type of care that is provided. It lends nothing to the goal of defining a type of care one receives.

In addition, having a definition that speaks to a persons ability to evacuate in emergency situations, leads to confusion when applying IBC sections 308.3.1 and 308.3.2 as well as sections 310.6.1 and 310.6.2. In applying those sections for I-1 and R-4 occupancies we have two different conditions that specifically address one's capacity to respond to an emergency situation in occupancies that provide for "custodial care". Having a definition, that speaks to a person's ability to respond to an emergency leads to confusion when applying the code.

**Cost Impact:** Will not increase the cost of construction changing a definition will have no cost impace

G6-15 : 202-CUSTODIAL  
CARE-ANDERSON5694

### Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** The phrasing is essential because it identifies one fo the characteristics of the persons being served and therefore the level of care being provided. During the 2015 edition development the CTC worked to provide clear distinction between the occupancy categories based on the type of care being provided. Taking the text out of the definition without replacing it elsewhere in the code, would leave a gap in methods to establish the distinct care occupancies.

**Assembly Action :**

**None**

### Individual Consideration Agenda

*Public Comment 1:*

**Proponent : William Hall, Portland Cement Association,**

**representing Portland Cement Association (jhall@cement.org)  
requests Approve as Submitted.**

**Commenter's Reason:** The existing definition is vague and unenforceable. How are inspectors or plan reviewers expected to know when people suffering from mental or psychiatric illness can or cannot exit on their own? What are slower evacuation times? Removing this language reduces the ambiguity of whether residents can or cannot exit on their own at any given time.

---

**G6-15**

# G7-15

202

## **Proposed Change as Submitted**

**Proponent :** Michael Anthony, University of Michigan,  
representing University of Michigan (maanthon@umich.edu)

### **2015 International Building Code**

**Revise as follows:**

#### **SECTION 202 DEFINITIONS**

**DORMITORY- (STUDENT RESIDENCE FACILITY)** A space in a building where group sleeping and cooking accommodations are provided in one room, or in a series of closely associated rooms, for persons not members of the same family group, under joint occupancy and single management, as in college dormitories (student residence facilities) or fraternity houses.

**Reason:** This proposal is intended to correlate with related proposals:

a) Section 310.2 for Residential Group - R, where the word dormitory appears

b) A proposal submitted separately, but coordinated with Brian Fitzgerald, Associate Director of Housing at the University of Michigan and an active member of ACUHO-1, the trade association for campus housing and student residence life professionals.

The term DORMITORY is used in both NFPA 101 and IBC. The common understanding of the term should not only be harmonized between both documents, but the term "dormitory" should be dropped from the vocabulary of the IBC entirely as it applies to the education facilities industry. This proposal is written with parenthetical clarification with the hope that after 2 or 3 revisions of the IBC, the term dormitory will be used in the context of prison, detention or military facilities.

1. The term "dormitory" is used less frequently as the reference material from ACUHO-i indicates. This pattern -- away from the word dormitory (which carries with it the association of detention, correctional, and military facilities) is likely to be seen in the plan review of building departments where the IBC is use. At the time the word "dormitory" came into use the education industry was smaller, did not have the requirement for in-residence instruction, and the financing of (frequently lavish) student living centers by student housing property trusts.

2. The word "dormitory" is used also in NFPA 101 in connection with detention and correctional facilities

3. Part of the year, these facilities are used by permanent residences to live and learn without having to leave student living center to another building on campus; thus the cooking facilities.

4. During the summer months these student living centers are used by transient "campers" -- frequently below 12-grade.

Another term -- STUDENT HOUSING -- may be acceptable to the committee. A correlating proposal will be submitted to NFPA 101. A task group should be set up to develop a crosswalk between the IBC and NFPA 101. There can be significant out of step conditions between NFPA 101 and the IBC because many states will not adopt the latest version. For the convenience of the committee, selected passages from the 2015 NFPA are shown below. Admittedly, some consideration should be informed by loss history as to whether modification of the definition to reflect a new epoch in the education facilities industry would change the egress, sprinkler, fire separation, hazard classification, and other life safety canons.

Getting two standards to reflect a common understanding of the occupancy and use

classification and terminology is no small feat. It may take 3 - 6 years to harmonized them. We have to start somewhere. We prefer not to have to continue struggling with these definitions 6 years from now.

=====

2015 NFPA 101 Reference Material - Selected Passages to provide the committee insight into the current status of the Life Safety Code

3.3.64\* Dormitory. A building or a space in a building in which group sleeping accommodations are provided for more than 16 persons who are not members of the same family in one room, or a series of closely associated rooms, under joint occupancy and single management, with or without meals, but without individual cooking facilities. (SAF-RES)

A.3.3.64 Dormitory. Rooms within dormitories intended for the use of individuals for combined living and sleeping purposes are guest rooms or guest suites. Examples of dormitories are college dormitories, fraternity and sorority houses, and military barracks.

6.1.8.1.4\* Definition — Dormitory. A building or a space in a building in which group sleeping accommodations are provided for more than 16 persons who are not members of the same family in one room, or a series of closely associated rooms, under joint occupancy and single management, with or without meals, but without individual cooking facilities.

#### Chapter 14 New Educational Occupancies

##### 14.1.3.4 Dormitory and Classrooms.

14.1.3.4.1 Any building used for both classroom and dormitory purposes shall comply with the applicable provisions of Chapter 28 in addition to complying with Chapter 14.

14.1.3.4.2 Where classroom and dormitory sections are not subject to simultaneous occupancy, the same egress capacity shall be permitted to serve both sections

##### 15.1.3.4 Dormitory and Classrooms.

15.1.3.4.1 Any building used for both classroom and dormitory purposes shall comply with the applicable provisions of Chapter 29 in addition to complying with Chapter 15.

15.1.3.4.2 Where classroom and dormitory sections are not subject to simultaneous occupancy, the same egress capacity shall be permitted to serve both sections.

#### Chapter 22 New Detention and Correctional Occupancies

22.3.4.4.3\* Smoke detectors shall not be required in Use Condition II open dormitories where staff is present within the dormitory whenever the dormitory is occupied.

A.22.3.4.4.3 An open dormitory is a dormitory that is arranged to allow staff to observe the entire dormitory area at one time

22.2.6.7 The maximum travel distance limitation of 22.2.6.6 shall be permitted to be increased to 100 ft (30 m) in open dormitories, provided that both of the following criteria are met:

(1) The enclosing walls of the dormitory space shall be of smoke-tight construction.

(2) Not less than two exit access doors remotely located from each other shall be provided where travel distance to the exit access door from any point within the dormitory exceeds 50 ft (15 m).

#### Chapter 28 New Hotels and Dormitories

##### 28.1 General Requirements.

###### 28.1.1 Application.

28.1.1.1 The requirements of this chapter shall apply to new buildings or portions thereof used as hotel or dormitory occupancies. (See 1.3.1.)

28.1.1.2 Administration. The provisions of Chapter 1, Administration, shall

apply.

28.1.1.3 General. The provisions of Chapter 4, General, shall apply.

28.1.1.4 Any dormitory divided into suites of rooms, with one or more bedrooms opening into a living room or study that has a door opening into a common corridor serving a number of suites, shall be classified as an apartment building.

28.1.1.5 The term hotel, wherever used in this Code, shall include a hotel, an inn, a club, a motel, a bed and breakfast, or any other structure meeting the definition of hotel

28.1.4.2 Special Definitions. A list of special terms used in this chapter follows:

- (1) Dormitory. See 3.3.64.
- (2) Guest Room. See 3.3.132.
- (3) Guest Suite. See 3.3.273.1.
- (4) Hotel. See 3.3.145.

28.2.11.2 Lockups. Lockups in hotel and dormitory occupancies shall comply with the requirements of 22.4.5

28.3.7 Subdivision of Building Spaces. Buildings shall be subdivided in accordance with 28.3.7.1 or 28.3.7.2.

28.3.7.1 In buildings not protected throughout by an approved, supervised automatic sprinkler system, each hotel guest room, including guest suites, and dormitory room shall be separated from other guest rooms or dormitory rooms by walls and floors constructed as fire barriers having a minimum 1-hour fire resistance rating.

**Bibliography:** FROM THE ASSOCIATION OF COLLEGE AND UNIVERSITY HOUSING OFFICERS INTERNATIONAL WEB SITE:

<http://www.acuho-i.org/blog/articleid/3976/you-were-asking-residence-halls-vs-dormitories>

A member recently asked this question. I thought it was interesting, and that the answer is too. Hopefully you feel the same. Does anyone know of any articles or studies as to when/why the lingo changed from dorm to res hall (to living center, etc)? As far as I know, there aren't any articles specifically on this (please post in the comments if you know otherwise). However, this is the answer I sent. Below I pasted the definitions from the online etymology dictionary, to which I'm referring here. (I love the Online Etymology Dictionary, by the way. It is fabulous.) Basically, "dormitory" comes from the word dormir which means to sleep or to become dormant. I've included some related definitions as well; cubicle (derived from a word that meant "to lie down, to bend oneself"), was the space in which someone slept in the dormitory. The word "cemetery" was derived from words related to dormitory, as it is a "sleeping place." The references to folding oneself into cubicles and death are likely the reason "dormitory" fell out of favor. Further below, there's the historical meanings for the words "residence" and "hall" which have much grander and more home-like pedigrees than that of "dormitory." These connotations are what universities and colleges refer to when explaining why those buildings are residence halls, not dormitories. (A number of examples can be found at the link.) I think the terms "living-learning" and similar, to specifically denote the educational aspects of residence halls, were used more commonly following the publishing of the Residential Nexus, which argued for a strong educational presence in the residence halls. As this is also a way to show the benefits of housing to students, parents and the administration, housing pros emphasize the home-like and educational aspects of housing, rather than the sleeping, dormant aspect. EDIT: Kevin Guidry's comment about an article in the Talking Stick sent me on a hunt through late-80s copies of the magazine. After flipping through many pages of--it must be said--ill-advised editorial, advertisement and fashion decisions, I found the article to which he was likely referring. Here it is: TalkingStick87 ResHallsDorms From the Online Etymology Dictionary: Dormitory: mid-15c., from L. dormitorium, from dormire "to sleep" (see dormant). Dorm: 1900, colloquial shortening of dormitory. Cubicle: late 15c., from L. cubiculum "bedroom," from cubare "to lie down," originally "bend oneself," from PIE

base \*keu(b)- "to bend, turn." Obsolete from 16c., but revived 19c. for "dormitory sleeping compartment," sense of "any partitioned space" (such as a library carrel) is first recorded 1926. Cemetery:late 14c., from O.Fr. cimetiére "graveyard" (12c.), from L.L. coemeterium, from Gk. koimeterion "sleeping place, dormitory," from koimao "to put to sleep," keimai "I lie down," from PIE base \*kei- "to lie, rest" (cf. Goth haims "village," O.E. ham "home, house, dwelling"); see home. Early Christian writers were the first to use it for "burial ground," though the Greek word also were anciently used of the sleep of death. Hall: O.E. heall "place covered by a roof, spacious roofed residence, temple," from P.Gmc. \*khallo "to cover, hide" (cf. O.H.G. halla, Ger. halle, Du. hal, O.N. höll "hall;" O.E. hell, Goth. halja "hell"), from PIE base \*kel- "to hide, conceal" (see cell). Sense of "entry, vestibule" evolved 17c., at a time when the doors opened onto the main room of a house. Older sense preserved in town hall, music hall, etc., and in university dormitory names. Hall of Fame first attested 1901, in ref. to Columbia College. Residence: c.1380, from M.L. residential, from L. residentem (nom. resides) "residing, dwelling," prp. of residere "reside" (see reside). Residential is attested from 1654, "serving as a residence;" meaning "having to do with housing" is from 1856.

For related information: <http://standards.plantops.umich.edu/acuho-i/>

**Cost Impact:** Will not increase the cost of construction  
 Greater granularity in the definition will likely reduce enforcement mis-match and mis-understanding and thereby reduce cost but it is difficult to count something that does not happen. It is safer to suggest that this change is likely to add to cost.

G7-15 : 202-DORMITORY  
 -ANTHONY5279

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The proposed wording would result in a requirement that to be a dormitory you would have to have cooking facilities. Without cooking, a building wouldn't be a dormitory. This issue and trying to limit dormitories to being student housing leaves all other dormitories as undefined.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : Maureen Traxler, Seattle Dept of Planning & Development, representing Seattle Dept of Planning & Development (maureen.traxler@seattle.gov) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

**2015 International Building Code**

**SECTION 202 DEFINITIONS**

**DORMITORY (STUDENT RESIDENCE FACILITY)** A space in a building where group sleeping ~~and cooking~~ accommodations are provided in one room, or in a series of closely associated rooms, for persons not members of the same family group, under joint occupancy and single management, as in college dormitories (student residence facilities) or fraternity houses. Kitchen facilities can be included.

**Commenter's Reason:** As written, the original proposal includes cooking facilities as a required feature of dormitories. We are proposing that dormitories be allowed to have cooking facilities but not to require them. None of the citations from NFPA 101 included in the documentation for the proposal require cooking facilities, and some of them prohibit individual cooking facilities. For instance, Section 3.3.64 says that meals may be provided but individual cooking facilities are not allowed.

---

**G7-15**

# G9-15

202

## Proposed Change as Submitted

**Proponent :** Carl Baldassarra, P.E., FSFPA, P.E., FSFPE, Chair, Code Technology Committee, representing Code Technology Committee (CTC@iccsafe.org)

### 2015 International Building Code

Revise as follows:

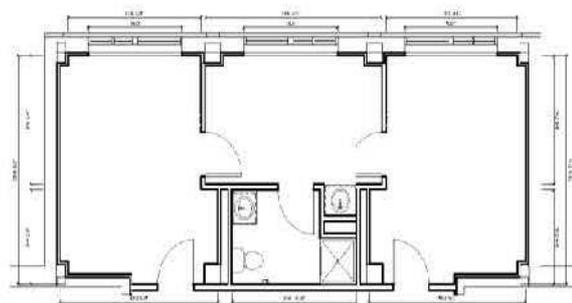
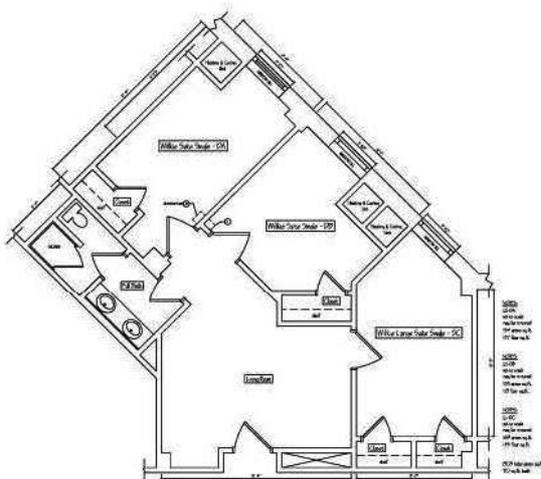
#### SECTION 202 DEFINITIONS

**DWELLING UNIT.** A single unit providing complete, independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking and sanitation.

**SLEEPING UNIT.** ~~A room single unit providing rooms or space in which people sleep, which spaces for one or more persons, which~~ can also include permanent provisions for living, eating, sleeping, and either sanitation or kitchen facilities but not both. Such rooms and spaces that are also part of a dwelling unit are not sleeping units.

**Reason:** Some hotel rooms, assisted living and dormitories are designed as suites. In a hotel or assisted living space, common designs are one or two bedrooms a living space and private bath. In a dorm, common designs are two rooms with a private bath between; or three or four bedrooms with a living space and private bathrooms. These units act as a group similar to an apartment. Currently the definition for sleeping unit could be interpreted to be just a bedroom. When these bedrooms are combined into suites, they should be considered as one sleeping unit.

Figures for CTC Care proposal to to Section 420 (6B)



This is part of a group of proposals to address this style of design and group homes within single family residences. Changes are proposed for the definition for sleeping units, the Group classifications in Section 310.4 and 310.5, separation requirements in Section 420, and coordination with accessibility requirements in Section 1107. Proposals will be put forward as part of Group B for fire and smoke alarm systems. The proposals could work separately.

The ICC Code Technology Committee (CTC) has just completed its 10th year. The ICC Board has decided to sunset the CTC. The sunset plan includes re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). The two remaining CTC Areas of Study are Care Facilities and Elevator Lobbies/WTC Elevator issues. This proposal falls under the Care Facilities Area of Study. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website at:

<http://www.iccsafe.org/cs/CTC/Pages/default.aspx>

This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 10 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx?usertoken={token}&Site=icc>

The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

**Cost Impact:** Will not increase the cost of construction  
This will increase design options and is a clarification.

G9-15 : 202-DWELLING  
UNIT-  
BALDASSARRA4294

---

## **Public Hearing Results**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The change provides clarity that sleeping units are just a single room but can be a collection of rooms. The revision increases design options for sleeping rooms. There was concern that the revision could be read to not ever require a sleeping area in a sleeping room. Such is not the intent of the proposal.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : Carl Baldassarra, P.E., FSFPE, representing Code Technologies Committee ([CTC@iccsafe.org](mailto:CTC@iccsafe.org))**

**requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

# 2015 International Building Code

## SECTION 202 DEFINITIONS

**SLEEPING UNIT.** A single unit providing rooms or spaces for one or more ~~persons, which~~ persons in which people sleep. Additional rooms and spaces within the unit can also include permanent provisions for living, eating, ~~sleeping,~~ and either sanitation or kitchen facilities but not both. Required egress from the unit is limited to access to a single exit or exit access doorway. Such rooms and spaces that are also part of a *dwelling unit* are not sleeping units.

**Commenter's Reason:** This revision is part of a package of changes that were all approved. However, this public comment is in response to floor comments heard during the committee hearing. This public comment accomplishes the following:

1. It now states the obvious option that a sleeping unit can be one room or multiple rooms.
2. It reinserts the original location of the term "sleeping" so that this cannot be any space, but more consistent with bedroom suites or two bedrooms with a shared bathroom.
3. It limits a sleeping unit to one exit. Requirements for single exit spaces are in Section 1006.3.2. This will stop the definition from being applicable to large areas on a single floor.

### *Public Comment 2:*

**Proponent : Maureen Traxler, representing Seattle Dept of Planning & Development (maureen.traxler@seattle.gov) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

# 2015 International Building Code

## SECTION 202 DEFINITIONS

**SLEEPING UNIT.** A single unit providing rooms or spaces for one or more ~~persons, which~~ persons, that includes permanent provisions for sleeping, and can ~~also include permanent~~ provisions for living, eating, ~~sleeping,~~ and either sanitation or kitchen facilities but not both. Such rooms and spaces that are also part of a *dwelling unit* are not sleeping units.

**Commenter's Reason:** The essence of a sleeping unit is that it's a place where people sleep. In the original proposal, provisions for sleeping are optional--this comment makes sleeping accommodations a mandatory feature of a sleeping unit.

### *Public Comment 3:*

**Proponent : Tony Crimi, representing International Firestop Council requests Disapprove.**

**Commenter's Reason:** While this proposed change provides some clarity that sleeping units are not always just a single room, but can be a

collection of rooms, this proposal also introduces some unintended consequences and requires further study.

Firstly, as the Committee identified, the proposed language could be interpreted to not ever require a sleeping area in a sleeping room.

The Committee reason clarified that such is not the intent of the proposal, however, that clarification of the intent is not in the IBC. The figures provided within the G9-15 proposal clearly represent the proponents intent of providing several rooms combined as a suite with a shared common space. However the unintended consequence of the proposed language would allow entire floor areas to be considered as a sleeping units, with no limitation on occupant load. This was clearly not the intent of this proposal.

Second, by adding the language "rooms" and not defining a "single unit" it is not hard to envision design professionals interpreting this language to include entire floor areas for hotel or motel floors, or dormitory floors. If so, this would create an unsafe condition by eliminating requirements for separation walls between these rooms, which was not intended by the proponents. While it could be interpreted that occupant loads could trigger the need for a rated corridor, this is not even implied within this definition.

Since occupant load limitations cannot be in a definition (since it is a requirement), this proposal should be Disapproved and brought back with a companion proposal to link these two critical elements.

#### *Public Comment 4:*

**Proponent : William Hall, Portland Cement Association, representing Portland Cement Association (jhall@cement.org) requests Disapprove.**

**Commenter's Reason:** This proposal will provide confusion. Many dormitories do not provide for cooking accommodations. Are these rooms now something different? Based on the proposed definition, cooking must be provided to be a dormitory. In addition, fraternity houses is already in the R-2 category. While this may be an area of the code that needs work, we feel this approach will only add confusion.

# G12-15

202

## Proposed Change as Submitted

**Proponent :** Victor Cuevas, representing City of Los Angeles  
(victor.cuevas@lacity.org)

### 2015 International Building Code

Revise as follows:

#### SECTION 202 DEFINITIONS

**GRADE PLANE.** A reference plane representing the average of finished ground level adjoining the building at *exterior walls*. ~~Where the finished ground level slopes away from the exterior walls, the~~ The reference plane shall be is established by averaging the highest and the lowest points elevation within the area between the exterior wall of the building or structure and the lot line or, where the lot line is more than 6 feet (1829 mm) from the building, between the building and a point 6 feet (1829 mm) from the building.

**Reason:** The current definition is confusing, not clear and lengthy.

**Cost Impact:** Will not increase the cost of construction  
This code amendment will not increase the cost of construction. This amendment only seeks to simplify how the grade plane is regulated by reducing the amount of work it takes to find the grade plane elevation.

G12-15 : 202-GRADE  
PLANE-CUEVAS4577

---

## Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee concluded that the revision doesn't improve the determination of grade plane. They found the proposed language resulted in a more complex calculation. Further the change in definition can result in grade plane being at a different level than under the current definition - and as such it could affect the determination of which are stories above grade plane and therefore the height of the building.

**Assembly Action :**

**None**

---

## Individual Consideration Agenda

*Public Comment 1:*

**Proponent :** Victor Cuevas, representing City of Los Angeles  
(victor.cuevas@lacity.org) requests **Approve as Modified by this Public Comment.**

**Modify as Follows:**

# 2015 International Building Code

## SECTION 202 DEFINITIONS

**GRADE PLANE.** A reference plane representing the average of finished ground level adjoining the building at *exterior walls*. The reference plane is established by averaging the highest and the lowest elevation within the area between the exterior wall of the building or structure and the lot line or, where the *lot line* is more than 6 feet (1829 mm) from the building, between the building and a point 6 feet (1829 mm) from the building. Grade elevation at light-wells and stairways providing access for below grade spaces, including basements, shall be excluded when calculating the grade plane.

**Commenter's Reason:** Using an illustration and by further modifying the original amendment, will try to address the Committees comments.

---

G12-15

# G15-15

202

## **Proposed Change as Submitted**

**Proponent :** John Woestman, Kellen Company, representing Composite Lumber Manufacturers Association (CLMA) (jwoestman@kellencompany.com)

### **2015 International Building Code**

**Revise as follows:**

#### **SECTION 202 DEFINITIONS**

**PLASTIC COMPOSITE.** A generic designation that refers to wood/plastic composites and plastic lumber, and similar materials.

**Delete without substitution:**

~~**PLASTIC LUMBER.** A manufactured product made primarily of plastic materials (filled or unfilled) which is generally rectangular in cross section.~~

~~**WOOD/PLASTIC COMPOSITE.** A composite material made primarily from wood or cellulose based materials and plastic.~~

**Reason:** This proposal is intended to be clarifications and simplification of the requirements for plastic composites identified in this section.

The 2015 IBC included, for the first time, specific requirements for plastic composite deck boards, stair treads, and guard systems. The existing language was developed and finalized during the 2012 code development cycle for the IBC. The following year, the requirements in the IRC for these same products were revised, but the result is there are some differences between the IBC and the IRC. This code change proposal is an effort to move the language of the IBC to be in close alignment with the language of the IRC.

The revised definition would address plastic composite deck boards, stair treads, and guard systems made with such recycled material as carper fiber or material such as mineral-filled PVC.

The two definitions proposed for deletion are also not included / deleted in the IRC. The two deleted definitions are not needed as the terms are self-explanatory.

**Cost Impact:** Will not increase the cost of construction  
No cost implications. No technical changes to the code requirements.

G15-15 : 202-PLASTIC  
COMPOSITE-  
WOESTMAN5568

---

## **Public Hearing Results**

**Committee Action:**

**Approved as Modified**

**Modification:**

**SECTION 202**

## DEFINITIONS

**PLASTIC LUMBER.** A manufactured product made primarily of plastic materials (filled or unfilled) which is generally rectangular in cross section.

**WOOD/PLASTIC COMPOSITE.** A composite material made primarily from wood or cellulose-based materials and plastic.

**Committee Reason:** Although this is lacking a description of what "similar materials" might be the committee agreed that this was a good idea to include plastic composite deck boards, stair treads, and guard systems made with such recycled material as carper fiber or material such as mineral-filled PVC. The modification puts back the definitions of plastic lumber and wood/plastic composite as these definitions provide clarification to code users.

**Assembly Action :**

**None**

---

### **Individual Consideration Agenda**

#### *Public Comment 1:*

**Proponent : Julie Ruth, JRuth Code Consulting, representing American Architectural Manufacturers Association (julruth@aol.com) requests Disapprove.**

**Commenter's Reason:** The net result of the committee's action on G15 is that the existing definitions of plastic lumber and wood/plastic composite were retained, while the existing definition of plastic composite was modified to include "and similar materials".

Although we are in agreement that the existing definitions of plastic lumber and wood/plastic composites do not address all the types of composite materials commonly used in building construction today. we do not think adding the phrase "and similar materials" without consideration of what other types of materials may be included in this definition are, and what their potential application may be, appropriately or adequately addresses the use of these new materials. In fact, we believe this change to the definition of "plastic composites" could create greater confusion in the enforcement of the IBC.

For example, there are several types of composites currently used in the fenestration industry that may be considered as falling within this new, modified definition. These include PVC framing, with or without fiberglass content, and glass and plastic composites used for glazing. Is the introduction of fiberglass, or glass in any other form, considered a "similar material"? Do the provisions of Section 2612 then apply to these materials?

We do believe the provisions of the IBC should be updated to address the numerous types of plastic composites currently in use by the construction industry. But we also believe the approved, modified proposal will create greater confusion rather than improving clarity. We urge disapproval of G15.



# G17-15

## 202

### Proposed Change as Submitted

**Proponent :** Marcelo Hirschler, GBH International, representing GBH International (gbhint@aol.com)

### 2015 International Building Code

Revise as follows:

#### SECTION 202 DEFINITIONS

**LIGHT TRANSMITTING PLASTIC, APPROVED.** Any light transmitting thermoplastic, thermosetting or reinforced thermosetting plastic material that conforms to combustibility classifications specified in the section applicable to the application and plastic type.

**Reason:** The IBC discusses approved light transmitting plastics in the sections associated with such plastics within Chapter 26 of the code. The concepts included in the definition refer to the classifications of Class CC1 and Class CC2 in section 2606.4 of the code. For all other uses there is nothing different about approving a plastic material than approving a wood material or any other type of material. Proposals are also being submitted to the relevant sections that reference "approved plastic" when they should reference "approved light transmitting plastic"

**Cost Impact:** Will not increase the cost of construction  
This is simply a change in the definition of "plastic, approved" to "light transmitting plastic, approved" that would clarify the intent of the definition.

G17-15 : 202-PLASTIC,  
APPROVED-  
HIRSCHLER3513

---

### Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee felt that the definition of approved plastic needed to remain general in order to include all types of uses.

**Assembly Action :**

**None**

---

### Individual Consideration Agenda

*Public Comment 1:*

**Proponent :** Marcelo Hirschler, representing GBH International (gbhint@aol.com) requests Approve as Modified by this Public Comment.

**Modify as Follows:**

## **2015 International Building Code**

### **SECTION 202 DEFINITIONS**

~~**LIGHT TRANSMITTING PLASTIC, APPROVED.** Any light transmitting thermoplastic, thermosetting or reinforced thermosetting plastic material that conforms to combustibility classifications specified in the section applicable to the application and plastic type.~~

**Commenter's Reason:** It makes no sense to retain a definition on "approved plastic" since nowhere in the code is there any requirement for approving a plastic in general, just as there is no requirement for approving a wood in general or approving a metal in general. Chapter 26 has requirements for some specific plastic materials when used in some specific applications and that is as it should be. The word "approved" is defined by the IBC as "acceptable to the building official". Clearly the only action a building official would take if he/she is asked to "approve" a certain plastic is to see whether it complies with the code for the specific application for which it is being submitted or, if it is presented as an "alternative materials" per section 104.11, whether a justification is presented for its use. The building official has no criteria for determining whether a plastic material is suitable to be approved in any other way. Therefore the definition of "approved plastic" should be eliminated just as there is no definition for approved wood or for approved metal.

---

**G17-15**

# G19-15

## 202 (New)

### Proposed Change as Submitted

**Proponent :** Marcelo Hirschler, representing GBH International (gbhint@aol.com)

## 2015 International Building Code

Add new definition as follows:

### SECTION 202 DEFINITIONS

**SOFT CONTAINED PLAY EQUIPMENT STRUCTURE.** A children's play structure containing one or more components where the user enters an enclosed play environment that utilizes pliable materials.

**Reason:** Section 424 discusses children's play structures and a definition is being proposed for that. Items 3, 6 and 7 of 424.2 also talks about "soft-contained play equipment structures", and a definition is being proposed for that as well, to identify that "soft-contained play equipment structures" are those that contain pliable materials and where the user is enclosed.

**Cost Impact:** Will not increase the cost of construction  
Simply adds a definition.

G19-15 : 202-SOFT  
CONTAINED PLAY  
EQUIPMENT STRUCTURE  
(New)-HIRSCHLER4582

---

### Public Hearing Results

**Committee Action:**

**Approved as Modified**

**Modification:**

**SECTION 202**

**DEFINITIONS**

**SOFT CONTAINED PLAY EQUIPMENT STRUCTURE.** A children's play structure containing one or more components where the user enters a ~~an enclosed~~ play environment that utilizes pliable materials.

**Committee Reason:** This proposal adds a useful definition that clarifies the application of the code. The modification removed the word "enclosed" as it added confusion.

**Assembly Action :**

**None**

---

### Individual Consideration Agenda

## *Public Comment 1:*

**Proponent : Marsha Mazz, representing U.S. Access Board (mazz@access-board.gov) requests Approve as Submitted.**

**Commenter's Reason:** An essential characteristic distinguishing this type of play structure from others that may contain pliable material is that users and play components are enclosed within the structure. Section 106 of the 2010 ADA Standards defines a "soft contained play structure" as "A play structure made up of one or more play components where the user enters a fully enclosed play environment that utilizes pliable materials, such as plastic, netting, or fabric." Approving the proposal as submitted will increase harmonization with the ADA Standards. .

---

**G19-15**

# G20-15

202

## Proposed Change as Submitted

**Proponent :** Jennifer Hatfield, J. Hatfield & Associates, PL,  
representing Association of Pool & Spa Professionals  
(jhatfield@apsp.org)

## 2015 International Building Code

Revise as follows:

### SECTION 202 DEFINITIONS

**SWIMMING POOL.** Any structure intended to be used for swimming,  
~~recreational or bathing or wading and~~ that ~~contains water over 24 inches~~  
~~(610 mm) deep is operated by an owner, lessee, operator, licensee or~~  
concessionaire, regardless of whether a fee is charged for use. This includes  
in-ground, aboveground and on-ground pools; hot tubs; spas and fixed-  
inplace wading pools that are designed and manufactured to be connected  
to a circulation system.

**Reason:** This definition is being amended to bring it in better alignment with the definitions and scope of the International Swimming Pool & Spa Code. A swimming pool is no longer defined with the limitation that it must contain water over 24 inches deep; rather, based on the scope of the ISPSC a key element is that they are designed and manufactured to be connected to a circulation system. Other edits were made to closely align with the definition of a Public Swimming Pool in the ISPSC. In this case allowance was made to incorporate spas, hot tubs, and other types of pools within this definition, with the limited requirements for these structures found in the IBC, but the reader can find detailed definitions of each in the ISPSC.

**Bibliography:** International Swimming Pool & Spa Code, 2015 edition, Sections 101.2 and 202

**Cost Impact:** Will not increase the cost of construction  
This code change is simply aligning the verbiage with that found in another I-code, the ISPSC, due to the fact certain requirements remain in the IBC (Section 1110.4.13 for example) for swimming pools and spas. It does not make a change that would add requirements to a pool; therefore, no cost increase exists.

G20-15 : 202-SWIMMING  
POOL-HATFIELD5447

---

## Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** The definition proposed is not consistent with that provided in the *International Swimming Pool and Spa Code*. In the ISPSC the connection to a circulation system appears to be key to what is regulated, where in this proposed definition it seems to only apply to the 'others' listed in the second sentence. The term recreation shouldn't be removed from the definition. The definition is unclear with respect to its application for site-built pools.

---

**Individual Consideration Agenda****Public Comment 1:**

**Proponent : Jennifer Hatfield, J. Hatfield & Associates, PL, representing Association of Pool & Spa Professionals (jhatfield@apsp.org) requests Approve as Modified by this Public Comment.**

**Modify as Follows:****2015 International Building Code****SECTION 202 DEFINITIONS****SWIMMING POOL.** ~~Any~~

A permanent or temporary structure that is intended to be used for swimming, bathing or bathing wading and that is operated by an owner, lessee, operator, licensee or concessionaire, regardless of whether a fee is charged for use. This includes in-ground, aboveground and on-ground pools; hot tubs; spas and fixed in-place wading pools that are designed and manufactured to be connected to a circulation system. A swimming pool can be open to the public regardless of whether a fee is charged for its use or can be accessory to a residential setting where the pool is available only to the household and guests of the household.

**Commenter's Reason:** The committee noted the original proposal was not consistent with the *International Swimming Pool & Spa Code* definition of swimming pool; however, the ISPSC does not have a definition for SWMMING POOL, but does have the following definitions:

**PUBLIC SWIMMING POOL (Public Pool).** A pool, other than a residential pool, that is intended to the used for swimming or bathing and is operated by an owner, lessee, operator, licensee or concessionaire, regardless of whether a fee is charged for use.

**RESIDENTIAL SWIMMING POOL (Residential Pool).** A pool intended for use which is accessory to a residential setting and available only to the household and its guests.

These ISPSC definitions are not very informative with respect to how the term SWMMING POOL is used in the IBC. However, under the Scope of the ISPSC, it provides the following:

**101.2 Scope.** The provisions of this code shall apply to the construction, alteration, movement, renovation, replacement, repair and maintenance of aquatic recreation facilities, pools and spas. The pools and spas covered by this code are either permanent or temporary, and shall be only those that are designed and manufactured to be connected to a circulation system and that are intended for swimming, bathing or wading.

This public comment therefore derives from the ISPSC Scope section and the Public and Residential pool definitions. It also addresses the committee's concern that in the ISPSC the connection to a circulation system appears to be key, but in the original proposal it seemed to only apply to those types of "swimming pools"

referenced in the second sentence. The public comment moves that language to the first sentence to assure that it applies to all "swimming pools." This definition captures all types of swimming pools that would fall under the ISPSC. Further, this public comment is consistent with the definition being offered in the IPC.

It is critical the definition be changed due to the fact the current definition found in the IBC is inconsistent and contrary to what is found in the ISPSC. A swimming pool is no longer defined with the limitation that it must contain water over 24 inches deep.

## *Public Comment 2:*

**Proponent : Jennifer Hatfield, J. Hatfield & Associates, PL, representing Association of Pool & Spa Professionals (jhatfield@apsp.org) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

## **2015 International Building Code**

### **SECTION 202 DEFINITIONS**

~~**SWIMMING POOL.** Any structure intended to be used for swimming or bathing and that is operated by an owner, lessee, operator, licensee or concessionaire, regardless of whether a fee is charged for use. This includes in-ground, aboveground and on-ground pools; hot tubs; spas and fixed-inplace wading pools that are designed and manufactured to be connected to a circulation system.~~

**Commenter's Reason:** If the public comment to make changes to this definition does not satisfy the voting body, another alternative would be to remove the definition altogether. The fact that section 3109 of the IBC refers users to the ISPSC raises the question as to whether a definition for swimming pool is needed at all. To do nothing would leave the IBC with a definition of SWMMING POOL that is contrary to what is in the ISPSC in terms of both scope and definitions. The current definition in the IBC would not recognize a wading pool that is 18 inches deep as a SWMMING POOL due to the definition using the outdated limitation that it must contain water over 24 inches deep. Therefore, if the previous public comment that makes changes to the definition of SWMMING POOL is not acceptable, voters are encouraged to simply remove the definition altogether.

---

**G20-15**

# G22-15

304.2, [F] 307.2, 308.2, 310.2, 402.2, 404.1.1, 406.2, 408.1.1, 410.2, 411.2, 412.2, [F] 415.2, [F] 421.2, 423.2, 502.1, 702.1, 722.1.1, 802.1, 902.1, 1002.1, 1102.1, 1202.1, 1402.1, 1502.1, 1602, 1602.1, 1609.2, 1612.2, 1613.2, 1615.2, 1702.1, 1802.1, 2102.1, 2302.1, 2402.1, 2502.1, 2602.1, 3102.2, 3105.2, 3110.2

## **Proposed Change as Submitted**

**Proponent :** Sarah Rice, Preview Group, representing Preview Group

### **2015 International Building Code**

**Revise as follows:**

**304.2 Definitions.** ~~The following terms—~~ Terms are defined in Chapter 2:

~~**AMBULATORY CARE FACILITY.**  
**CLINIC, OUTPATIENT.**~~

**[F] 307.2 Definitions.** ~~The following terms—~~ Terms are defined in Chapter 2:

*(The lists of terms in this and subsequent sections would be deleted.)*

**308.2 Definitions.** ~~The following terms—~~ Terms are defined in Chapter 2:

**310.2 Definitions.** ~~The following terms—~~ Terms are defined in Chapter 2:

**402.2 Definitions.** ~~The following terms—~~ Terms are defined in Chapter 2:

**404.1.1 Definition.** ~~The following term is—~~ Terms are defined in Chapter 2:

**406.2 Definitions.** ~~The following terms—~~ Terms are defined in Chapter 2:

**408.1.1 Definitions.** ~~The following terms—~~ Terms are defined in Chapter 2:

**410.2 Definitions.** ~~The following terms—~~ Terms are defined in Chapter 2:

**411.2 Definition.** ~~The following term is—~~ Terms are defined in Chapter 2:

**412.2 Definitions.** ~~The following terms—~~ Terms are defined in Chapter 2:

**[F] 415.2 Definitions.** ~~The following terms—~~ Terms are defined in Chapter 2:

**[F] 421.2 Definitions.** ~~The following terms—~~ Terms are defined in Chapter 2:

**423.2 Definitions.** ~~The following terms—~~ Terms are defined in Chapter 2:

**502.1 Definitions.** ~~The following terms—~~ Terms are defined in Chapter 2:

**702.1 Definitions.** ~~The following terms—~~ Terms are defined in Chapter 2:

**722.1.1 Definitions.** ~~The following terms- Terms are defined in Chapter 2:~~

**802.1 Definitions.** ~~The following terms- Terms are defined in Chapter 2:~~

**902.1 Definitions.** ~~The following terms- Terms are defined in Chapter 2:~~

**1002.1 Definitions.** ~~The following terms Terms are defined in Chapter 2:~~

**1102.1 Definitions.** ~~The following terms Terms are defined in Chapter 2:~~

**1202.1 General.** ~~The following terms Terms are defined in Chapter 2:~~

**1402.1 Definitions.** ~~The following terms- Terms are defined in Chapter 2:~~

**1502.1 Definitions.** ~~The following terms- Terms are defined in Chapter 2:~~

**1602.1 Definitions- and notations** ~~The following terms- Terms are defined in Chapter 2, The following notations are used in this chapter:~~

**1609.2 Definitions.** ~~For the purposes of Section 1609 and as used elsewhere in this code, the following terms- Terms are defined in Chapter 2:~~

**1612.2 Definitions.** ~~The following terms- Terms are defined in Chapter 2:~~

**1613.2 Definitions.** ~~The following terms- Terms are defined in Chapter 2:~~

**1615.2 Definitions.** ~~The following words and terms- Terms are defined in Chapter 2:~~

**1702.1 Definitions.** ~~The following terms- Terms are defined in Chapter 2:~~

**1802.1 Definitions.** ~~The following words and terms- Terms are defined in Chapter 2:~~

**2102.1 General.** ~~The following terms- Terms are defined in Chapter 2. The following notations are used in the chapter:~~

**2302.1 Definitions.** ~~The following terms- Terms are defined in Chapter 2:~~

**2402.1 Definitions.** ~~The following terms- Terms are defined in Chapter 2:~~

**2502.1 Definitions.** ~~The following terms- Terms are defined in Chapter 2:~~

**2602.1 Definitions.** ~~The following terms- Terms are defined in Chapter 2:~~

**3102.2 Definitions.** ~~The following terms- Terms are defined in Chapter 2:~~

**3105.2 Definition.** ~~The following term is- Terms are defined in Chapter 2:~~

**3110.2 Definition.** ~~The following term is- Terms are defined in Chapter 2:~~

**Reason:** The intent of this proposal is to remove the definition list sections scattered about the code and the lists of defined terms included within each such section. Starting with the 2012 edition of the IBC all of the definitions were consolidated into Chapter 2. These sections are vestigages of historic organization of the code. In general when new terms are added to Chapter 2, they rarely find themselves being added to one of these lists. Terms can be removed from Chapter 2, but don't always get removed from these lists. Most of the ICC codes simply have a Chapter 2 of definitions, there are no lists scattered about the code. It is time to remove these lists. I see this as an editorial action. The proposal was not accepted by the Code Correlation Committee because of a concern that the language in each section implied that all terms were defined. I have revised that language to provide a simple reference for defined terms.

This proposal simply amends the sections to remove the lists and send the code users directly to Chapter 2. An alternative the committee might consider is to delete all of these sections (except the two that list notations). Deletion would force

renumber of the balance of the sections in these chapters.

In two sections, these lists also contain a list of scientific notations used in the chapter. Those notations are not found in Chapter 2. Thus the current text is incorrect and needs to be addressed. The proposal retains Section 1602 and 2102, but only for the listed notations.

**Cost Impact:** Will not increase the cost of construction  
The proposal is purely editorial in nature and will have no impact on actual construction.

G22-15 : 304.2-  
RICE5794

---

## **Public Hearing Results**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The proposal reduces redundancy in the code and simplifies the search for information. With each defined term italicized, the code user will go directly to Chapter 2 where the full definitions are found. The listings in front of the chapter provided no information for the code user. The intent of the committee was to change to the lists to a simple reference to Chapter 2 with the exception of those locations where the lists also included scientific notations. The notations would remain in the Chapters.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : Maureen Traxler, Seattle Dept of Planning & Development, representing Seattle Dept of Planning & Development (maureen.traxler@seattle.gov) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

~~**304.2 Definitions.** Terms are defined in Chapter 2.~~

~~**[F] 307.2 Definitions.** Terms are defined in Chapter 2~~

~~**308.2 Definitions.** Terms are defined in Chapter 2~~

~~**310.2 Definitions.** Terms are defined in Chapter 2~~

~~**402.2 Definitions.** Terms are defined in Chapter 2~~

~~**404.1.1 Definition.** Terms are defined in Chapter 2:~~

~~**406.2 Definitions.** Terms are defined in Chapter 2~~

~~**408.1.1 Definitions.** Terms are defined in Chapter 2~~

~~410.2 Definitions.~~ Terms are defined in Chapter 2

~~411.2 Definition.~~ Terms are defined in Chapter 2

~~412.2 Definitions.~~ Terms are defined in Chapter 2

~~[F] 415.2 Definitions.~~ Terms are defined in Chapter 2

~~[F] 421.2 Definitions.~~ Terms are defined in Chapter 2

~~423.2 Definitions.~~ Terms are defined in Chapter 2

#### ~~SECTION 502 DEFINITIONS~~

~~502.1 Definitions.~~ Terms are defined in Chapter 2

#### ~~SECTION 702 DEFINITIONS~~

~~702.1 Definitions.~~ Terms are defined in Chapter 2

~~722.1.1 Definitions.~~ Terms are defined in Chapter 2:

-

#### ~~SECTION 802 DEFINITIONS~~

~~802.1 Definitions.~~ Terms are defined in Chapter 2

#### ~~SECTION 902 DEFINITIONS~~

~~902.1 Definitions.~~ Terms are defined in Chapter 2

#### ~~SECTION 1002 DEFINITIONS~~

~~1002.1 Definitions.~~ Terms are defined in Chapter 2

#### ~~SECTION 1102 DEFINITIONS~~

~~1102.1 Definitions.~~ Terms are defined in Chapter 2:

#### ~~SECTION 1202 DEFINITIONS~~

~~1202.1 General.~~ Terms are defined in Chapter 2

#### ~~SECTION 1402 DEFINITIONS~~

~~1402.1 Definitions.~~ Terms are defined in Chapter 2

#### ~~SECTION 1502 DEFINITIONS~~

~~1502.1 Definitions.~~ Terms are defined in Chapter 2

#### ~~SECTION 1602 DEFINITIONS AND NOTATIONS~~

~~1609.2 Definitions.~~ Terms are defined in Chapter 2

~~1612.2 Definitions.~~ Terms are defined in Chapter 2

~~1615.2 Definitions.~~ Terms are defined in Chapter 2

~~1613.2 Definitions.~~ Terms are defined in Chapter 2

#### ~~SECTION 1702 DEFINITIONS~~

~~1702.1 Definitions.~~ Terms are defined in Chapter 2

## **SECTION 1802 DEFINITIONS**

~~**1802.1 Definitions.** Terms are defined in Chapter 2~~

## **SECTION 2102 DEFINITIONS AND NOTATIONS**

~~**2102.1 General. Notations** Terms are defined in Chapter 2. The following notations are used in the chapter:~~

## **SECTION 2202 DEFINITIONS**

~~**2202.1 Definitions.** The following terms are defined in Chapter 2:~~

## **SECTION 2302 DEFINITIONS**

~~**2302.1 Definitions.** Terms are defined in Chapter 2~~

## **SECTION 2402 DEFINITIONS**

~~**2402.1 Definitions.** Terms are defined in Chapter 2~~

## **SECTION 2502 DEFINITIONS**

~~**2502.1 Definitions.** Terms are defined in Chapter 2~~

## **SECTION 2602 DEFINITIONS**

~~**2602.1 Definitions.** Terms are defined in Chapter 2~~

~~**3102.2 Definitions.** Terms are defined in Chapter 2~~

~~**3105.2 Definition.** Terms are defined in Chapter 2~~

~~**3110.2 Definition.** Terms are defined in Chapter 2~~

**Commenter's Reason:** This comment deletes the definitions sections from all the chapters except Chapter 2. The original proposal deletes the lists of defined terms but leaves the statement "Terms are defined in Chapter 2." While we agree wholeheartedly with the spirit of the original proposal, we would like to take it to its logical conclusion and delete the entire sections. The text added in the original proposal doesn't add anything to the code; it's only purpose is to avoid renumbering the chapters. Everyone who has basic knowledge about the organization of the IBC, or who understands why terms are italicized knows that terms are defined in Chapter 2. For Sections 1602.1 and 2102.1, this comment lists the definitions that should be deleted in order to be very clear that the notations must remain in those sections.

### *Public Comment 2:*

**Proponent : Edward Kulik, representing ICC Building Code Action Committee (bcac@iccsafe.org) requests Disapprove.**

**Commenter's Reason:** Definitions are an important part of applying the code. Some definitions apply generically throughout the code while others provide distinct guidance to application of a given chapter. The definitions listed at the beginning of each chapter are important clarifications on how the technical requirements of the chapter are to be applied. They are there to remind the user of the code of the importance of those definitions to the specific chapter and the user is encouraged to review them as the chapter is applied. It is cumbersome and incorrect to expect the user of the code to read the definition

in Chapter 2 every time an italicized term, (defined), is encountered. That is why the chapter specific terms are listed. The committee decision should be overturned and the proposal should be disapproved by the membership, leaving the list of specific chapter definitions in each chapter for important guidance to code users.

---

**G22-15**

# G23-15

302.1, 508.2.4, 508.3.3

## Proposed Change as Submitted

**Proponent :** Ali Fattah, City of San Diego Development Services Department, representing City of San Diego (afattah@sandiego.gov)

### 2015 International Building Code

#### Revise as follows:

**302.1 General.** Structures or portions of structures shall be classified with respect to occupancy in one or more of the groups listed in this section. A room or space that is intended to be occupied at different times for different purposes shall comply with all of the requirements that are applicable to each of the purposes for which the room or space will be occupied. Occupied roof decks, other than private roof decks accessed from individual dwelling units in Group R-3 and Group R-2 occupancies, shall be classified based on the proposed use of the space. Structures with multiple occupancies or uses shall comply with Section 508. Where a structure is proposed for a purpose that is not specifically provided for in this code, such structure shall be classified in the group that the occupancy most nearly resembles, according to the fire safety and relative hazard involved.

1. Assembly (see Section 303): Groups A-1, A-2, A-3, A-4 and A-5.
2. Business (see Section 304): Group B.
3. Educational (see Section 305): Group E.
4. Factory and Industrial (see Section 306): Groups F-1 and F-2.
5. High Hazard (see Section 307): Groups H-1, H-2, H-3, H-4 and H-5.
6. Institutional (see Section 308): Groups I-1, I-2, I-3 and I-4.
7. Mercantile (see Section 309): Group M.
8. Residential (see Section 310): Groups R-1, R-2, R-3 and R-4.
9. Storage (see Section 311): Groups S-1 and S-2.
10. Utility and Miscellaneous (see Section 312): Group U.

**508.2.4 Separation of occupancies.** No separation is required between accessory occupancies and the main occupancy.

#### Exceptions:

1. Group H-2, H-3, H-4 and H-5 occupancies shall be separated from all other occupancies in accordance with Section 508.4.
2. Group I-1, R-1, R-2 and R-3 *dwelling units* and *sleeping units* shall be separated from other *dwelling* or *sleeping units* and from accessory occupancies contiguous to them in accordance with the requirements of Section 420.
3. Occupied roof decks classified as Group A and located on buildings constructed with three or more stories above grade plane and constructed of Type VB, IIIB and IIB construction shall be separated from all other occupancies in accordance with Section 508.4.

**508.3.3 Separation.** No separation is required between nonseparated occupancies.

**Exceptions:**

1. Group H-2, H-3, H-4 and H-5 occupancies shall be separated from all other occupancies in accordance with Section 508.4.
2. Group I-1, R-1, R-2 and R-3 *dwelling units* and *sleeping units* shall be separated from other *dwelling* or *sleeping units* and from other occupancies contiguous to them in accordance with the requirements of Section 420.
3. Occupied roof decks classified as Group A and located on buildings constructed with three or more stories above grade plane and constructed of Type VB, IIIB and IIB construction shall be separated from all other occupancies in accordance with Section 508.4.

**Reason:** Modify Section 301 and add exception 3 to Section 508.2.4 and to Section 508.3.3 to require an occupancy separation between occupied roof decks classified as Group A and the building below.

Section 302.1 of the IBC requires that rooms or spaces be classified into one or more occupancies. In addition to determining allowable height and area requirements, as well fire protection requirements, establishing the occupancy of a space is required to determine means of egress requirements and fire alarm and occupant notification requirements. The IBC is not clear on how to address occupied roofs used for public assembly or other uses. Section 1004.5 requires compliance with the means of egress requirements of Ch 10 for certain outdoor areas that are enclosed and to and from which building occupants pass. The code is not clear what other occupancy specific requirements should be applicable due to the occupancy within the occupied roof deck.

The purpose of this code change is to require not less than one hour construction for the floor supporting occupied roof decks classified in Group A when required by Table 508.4 and when located on buildings of Type VB, IIIB, IIB construction. Table 508.4 requires at least a one hour occupancy separation for all occupancies other than F-2, S-2, U and E when adjacent to a Group A occupancy. Occupants on the occupied roof deck may not be at risk due to a fire event occurring on the roof deck, however they are unaware of the hazards in the building below which can be several stories below.

For example a Group A occupancy can be located on an occupied roof above a 74 ft high Type IIIB sprinkler protected building with two stories of type IA construction below 5 stories of Type IIIB construction. 500 occupants can be located on this occupied roof deck and are provided with two 2 hour interior exit stairways. Fire alarm activation of this non-high rise building will simultaneously cause the evacuation of all occupants in the building served by the two stairways and as a consequence queuing will occur. The occupancy separation will provide sufficient time for occupants on the roof to queue and enter the exit stairways and safely egress down the stairways.

This code changes provides balanced fire protection and does not rely only on sprinkler protection required in the building below by Section 903.2.1.6. The proposed code change only requires that the occupancy separation be required when the occupied roof deck is located above a building three or more stories above grade plane. Private roof decks associated with Group R-3 and individual units in R-2 are not classified as group A and will not be required to comply with the proposed code change.

Section 903.2.1.6 was added in the last code change cycle in code change # F121, F122, F124 -13 by Aon Fire Protection, Tennessee Code Development Committee and the ICC Fire Code Action Committee to require sprinkler protection below occupied roofs with more than 100 occupants for Group A-2 and 300 for all other Group A occupancies when not on open parking garages constructed of Type I or Type II. The

substantiation for Code Change # F124 that prevailed with modifications, and that was approved under public comment # 1, stated in part that "The occupants of the Group A occupancy, whether within the building or on the roof, are unaware of the hazards in the building and need to evacuate through the building."

**Cost Impact:** Will increase the cost of construction

This code change will increase the cost of construction due to required additional fire resistance of the roof ceiling assembly under the occupied roof deck and supporting construction. The majority of wood framed buildings are covered with gypsum sheathing board or exterior plaster wall finish so the cost impact is not significant when compared to the overall cost of construction.

G23-15 : 302.1-  
FATTAH5650

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee found the proposal confusing. The proponent hoped to remove his changes to Sections 508.2.4 and 508.3.3. This proposal has similar issues as the other proposals addressing the use of roofs. The text is somewhat circular in that if the roof deck is private and related to an R-2 dwelling unit would be unclassified. The committee later expressed encouragement to the proponents of all the occupied roof proposals to attempt to work together to create a solution for consideration at the public comment hearings.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : William Hall, Portland Cement Association, representing Portland Cement Association requests Approve as Submitted.**

**Commenter's Reason:** Occupied roofs are mostly Group A and as such can have higher occupant loads. Classifying these areas will provide fire alarm signaling, proper exiting and sprinkler protection. As roof decks are utilized more, occupant loads will continue to get larger. This language is needed to regulate these areas.

### *Public Comment 2:*

**Proponent : Ali Fattah, City of San Diego Development Services, representing City of San Diego (afattah@sandiego.gov) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

## **2015 International Building Code**

**302.1 General.** Structures or portions of structures shall be classified with respect to occupancy in one or more of the groups listed in this section. A room or space that is intended to be occupied at different times for different purposes shall comply with all of the requirements that are applicable to

each of the purposes for which the room or space will be occupied. Occupied roof decks, other than private roof decks directly accessed from- an individual dwelling units in Group R-3 and Group R-2 occupancies, unit or sleeping unit shall be classified based on the proposed use of the space. Structures with multiple occupancies or uses shall comply with Section 508. Where a structure is proposed for a purpose that is not specifically provided for in this code, such structure shall be classified in the group that the occupancy most nearly resembles, according to the fire safety and relative hazard involved.

1. Assembly (see Section 303): Groups A-1, A-2, A-3, A-4 and A-5.
2. Business (see Section 304): Group B.
3. Educational (see Section 305): Group E.
4. Factory and Industrial (see Section 306): Groups F-1 and F-2.
5. High Hazard (see Section 307): Groups H-1, H-2, H-3, H-4 and H-5.
6. Institutional (see Section 308): Groups I-1, I-2, I-3 and I-4.
7. Mercantile (see Section 309): Group M.
8. Residential (see Section 310): Groups R-1, R-2, R-3 and R-4.
9. Storage (see Section 311): Groups S-1 and S-2.
10. Utility and Miscellaneous (see Section 312): Group U.

**Commenter's Reason:** The proposed code change seeks to clarify that occupied roof decks need to be classified. We have participated with a working group seeking to further clarify when an occupied roof is not required to comply with height and number of stories and submit this public comment as a fallback in the event the group effort fails. Classification of the occupancy triggers certain means of egress requirements and other occupancy specific requirements. The committee disapproved both a floor modification and the original code change. The floor modification s being resubmitted for consideration by the membership. The allowance for private roof decks directly accessed from a dwelling unit addresses the possibility that a large roof can have divided private decks related to a particular sleeping or dwelling unit.

# G24-15

## 302.1, 503.1.4 (New)

### Proposed Change as Submitted

**Proponent :** Stephen Thomas, representing Colorado Chapter (sthomas@coloradocode.net)

## 2015 International Building Code

### Revise as follows:

**302.1 General.** Structures or portions of structures shall be classified with respect to occupancy in one or more of the groups listed in this section. A room or space that is intended to be occupied at different times for different purposes shall comply with all of the requirements that are applicable to each of the purposes for which the room or space will be occupied. Structures with multiple occupancies or uses shall comply with Section 508. Where a structure is proposed for a purpose that is not specifically provided for in this code, such structure shall be classified in the group that the occupancy most nearly resembles, according to the fire safety and relative hazard involved. Yards, patios, courts, occupied roofs and similar outdoor areas accessible to and usable by the building occupants shall be classified in the group that the occupancy most nearly resembles, according to the fire safety and relative hazard involved.

1. Assembly (see Section 303): Groups A-1, A-2, A-3, A-4 and A-5.
2. Business (see Section 304): Group B.
3. Educational (see Section 305): Group E.
4. Factory and Industrial (see Section 306): Groups F-1 and F-2.
5. High Hazard (see Section 307): Groups H-1, H-2, H-3, H-4 and H-5.
6. Institutional (see Section 308): Groups I-1, I-2, I-3 and I-4.
7. Mercantile (see Section 309): Group M.
8. Residential (see Section 310): Groups R-1, R-2, R-3 and R-4.
9. Storage (see Section 311): Groups S-1 and S-2.
10. Utility and Miscellaneous (see Section 312): Group U.

### Add new text as follows:

**503.1.4 Occupied roofs** Occupied roofs are not subject to the building height, number of stories and building area limitations of Sections 504 and 506.

**Reason:** Many buildings are being built or altered to create an occupied roof. The code is not clear as to the requirements for these "spaces". Chapter 10 takes care of the means of egress requirements. But, the rest of the code does not address these issues. Some areas are used as gathering spaces, dining areas, swimming pools, etc. The question has come up as to whether these uses are an "occupancy". Some jurisdictions classify them as occupancies and others do not. We were originally going to look at writing a much larger change that would state that they are not occupancies and provide exceptions throughout the code. However, the fact is that the code is an occupancy driven document. Therefore, we decided to use similar language in Section 302.1 combined with the language in Section 1004.5. An occupied roof would be classified to an occupancy that it most resembles. For example, a roof off of a private office would be classified as a Group B occupancy.

However a roof above a restaurant would be classified as a Group A-2 occupancy. We have also provided language stating that the height and area requirements do not apply to occupied roofs. We conducted a survey of several building departments and code consultants and found that most respondents did not require an occupied roof to comply with the height and area provisions of the code. We are also not aware of any issues with the use of a roof as an occupied space.

This proposal provides users of the code some guidance and clarification on how to apply the provisions to an occupied roof.

**Cost Impact:** Will not increase the cost of construction  
This change is a clarification to the code. It will not affect the overall cost of construction.

G24-15 : 302.1-  
THOMAS4437

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The testimony on this proposal and similar items clearly show that use of roofs needs to be clarified. The committee found the language of this proposal unclear and would still result in multiple interpretations. There was discomfort with the complete exemption allowed by the text of Section 503.1.4. Uses on roof must address issue of occupant safety as well as fire fighter access. Often planning/zoning regulations require open spaces and the solution is often the solution. The issue of whether an occupied roofs are considered a story or not. On a later proposal, the committee encouraged the proponents of the similar proposals try to get together to develop a solution for consideration at the public comment hearings.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : Marshall Klein, representing National Multifamily Housing Council (makleinfpe@comcast.net) requests Approve as Modified by this Public Comment.**

**Replace Proposal as Follows:**

### **2015 International Building Code**

#### **CHAPTER 3 USE AND OCCUPANCY CLASSIFICATION SECTION 301 GENERAL**

**301.1 Scope.** The provisions of this chapter shall control the classification of all buildings and structures as to use and occupancy. See Sections 903.2.1.6, 1004.5 and 1006.3 for occupied roofs.

**1004.5 Outdoor areas.** *Yards, patios, courts, occupied roofs and similar outdoor areas accessible to and usable by the building occupants shall be provided with *means of egress* as required by this chapter. The *occupant load* of such outdoor areas shall be assigned by the *building official* in accordance with the anticipated use. Where outdoor areas are to be used by*

persons in addition to the occupants of the building, and the path of egress travel from the outdoor areas passes through the building, *means of egress* requirements for the building shall be based on the sum of the *occupant loads* of the building plus the outdoor areas.

**Exceptions:**

1. Outdoor areas used exclusively for service of the building need only have one *means of egress*.
2. Both outdoor areas associated with Group R-3 and individual dwelling units of Group R-2.

**Commenter's Reason:** There were five (5) code proposals this code cycle (G23-15, G24-15, G131-15, G134-15 and G166-15) that attempted to address "occupied roofs", and all were recommended for disapproval by the General Code Development Committee because they all had diversified ways of addressing persons using the roof areas.

Under the 2015 IBC, there are already two (2) sections of the existing Code that adequately address occupied roofs by name, Section 903.2.1.6, "**Assembly occupancies on roofs**", and Section 1006.3, "**Egress from stories or occupied roofs**". A third section of Code, Section 1004.5, "**Outdoor areas**", while not specifically stating "occupied roofs", would clearly be applicable to such roof areas based on its requirement to be applicable to "...and similar outdoor areas accessible to and usable by the building occupants...".

Since it appears from the public testimony that there are many who were unaware of the existing requirements already in the 2015 IBC that address "occupied roofs", and the code proposal proponents and opponents appears to need another code cycle to potential address all the diversified views on this issue, this public comment is only attempting to place a pointer at the beginning of Chapter 3, "Use and Occupancy Classification", to guide code users to the existing code sections that address "occupied roofs".

The proposed revision to Section 1004.5 to add "...occupied roofs..." is based on the General Code Development Committee's reason statement for its disapproval of Code Proposal G131-15 that "...Adding 'occupied roofs' into Section 1004.5 makes sense and should be included in anything that is returned...".

In summary, this public comment is only 1) providing a pointer in the begining of Chapter 3 to the existing requirements in the Code for "occupied roofs" so they will not be missed, and 2) following through on the General Code Development Committee's request to further clarify that Section 1004.5, "Outdoor areas", would also be applicable to "occupied roofs".

## *Public Comment 2:*

**Proponent : Stephen Thomas, Colorado Code Consulting, LLC, representing Colorado Chapter ICC (sthomas@coloradocode.net); Ali Fattah, representing City of San Diego (afattah@sandiego.gov); Carl Wren, City of Austin, representing City of Austin, Texas (carl.wren@austintexas.gov); Gary Ehrlich, National Association of Home Builders , representing National Association of Home Builders (gehrlich@nahb.org); Jonathan Siu, City of Seattle Department of Planning & Development, representing City of Seattle Department of Planning & Development (jon.siu@seattle.gov); Lee Kranz, representing Washington Assoc of Building Officials Technical Code Development Committee (lkranz@bellevuewa.gov); Robert**

**Davidson, representing self (rjd@davidsoncodeconcepts.com); Steven Orlowski, BOMA, International, representing Building Owners and Managers Association, International (sorlowski@boma.org); Marshall Klein, representing National Multifamily Housing Council (makleinfpe@comcast.net) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

## **2015 International Building Code**

**302.1 General.** Structures or portions of structures shall be classified with respect to occupancy in one or more of the groups listed in this section. A room or space that is intended to be occupied at different times for different purposes shall comply with all of the requirements that are applicable to each of the purposes for which the room or space will be occupied. Structures with multiple occupancies or uses shall comply with Section 508. Where a structure is proposed for a purpose that is not specifically provided for in this code, such structure shall be classified in the group that the occupancy most nearly resembles, according to the fire safety and relative hazard involved. ~~Yards, patios, courts, occupied~~ Occupied ~~roofs and similar outdoor areas accessible to and usable by the building occupants shall~~ be classified in the group that the occupancy most nearly resembles, according to the fire safety and relative hazard involved and shall comply with Section 503.1.4.

1. Assembly (see Section 303): Groups A-1, A-2, A-3, A-4 and A-5.
2. Business (see Section 304): Group B.
3. Educational (see Section 305): Group E.
4. Factory and Industrial (see Section 306): Groups F-1 and F-2.
5. High Hazard (see Section 307): Groups H-1, H-2, H-3, H-4 and H-5.
6. Institutional (see Section 308): Groups I-1, I-2, I-3 and I-4.
7. Mercantile (see Section 309): Group M.
8. Residential (see Section 310): Groups R-1, R-2, R-3 and R-4.
9. Storage (see Section 311): Groups S-1 and S-2.
10. Utility and Miscellaneous (see Section 312): Group U.

**503.1.4 Occupied roofs** ~~Occupied~~ A roof level or portion thereof shall be permitted to be used as an occupied roof provided the occupancy of the roof is an occupancy that is permitted by Table 504.4 for the story immediately below the roof. The area of the occupied roofs are shall not subject be included in the building area as regulated by Section 506.

Exceptions:

1. The occupancy located on an occupied roof shall not be limited to the occupancies allowed on the story immediately below the roof where the building height, number is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and occupant notification in accordance with Section 907.5 is provided in the area of stories the occupied roof.
2. Assembly occupancies shall be permitted on roofs of open parking garages of Type I or Type II construction, in accordance with the exception to Section 903.2.1.6.

Elements or structures enclosing the occupied roof areas shall not extend more than 48 inches above the surface of the occupied roof.

Exception: Penthouses constructed in accordance with Section 1510.2 and building area limitations of Sections 504 towers, domes, spires, and 506-cupolas constructed in accordance with Section 1510.5

**Commenter's Reason:** There were several proposed changes to deal with occupied roofs submitted for this code cycle. All of them were disapproved by the General Committee. The proponents of all of those proposals have come together to develop one public comment to address this important issue. Building departments are seeing more and more roofs being occupied. The purpose of this public comment is to provide some direction to the code official in dealing with these uses. The code defines a story as "that portion of a building included between the upper surface of a floor and the upper surface of the floor or roof next above." While other proposals have been submitted to address the question whether or not an occupied roof would add to the number of stories, it is the opinion of the submitters that the code already addresses when a portion of the building is considered a story as indicated in the definition of Story. An uncovered roof deck is clearly not a story, because there is no floor or roof above.

The first portion of the change (Section 302.1) is to clarify that occupied roofs are required to be classified as an occupancy. The codes are so occupancy driven that you cannot determine what is needed when an roof is occupied unless you determine an occupancy classification. As an example, if a roof is used for gathering of people, it would be classified as a Group A-3. If it was a roof where patrons were drinking and dining, you would classify it as a Group A-2. An occupied roof outside a private office would be classified as a Group B. It is based on the use and the relative hazard of the use just like any other space in a building.

The second portion (Section 503.1.4) provides direction as to where the occupancies can be located. If the building is not provided with fire sprinklers, the use cannot be located on the roof unless it is permitted on the story directly below. For example, an occupied roof used for gathering of people on top of an office building of Type VB Construction without fire sprinklers would be limited to the roof of a one-story building. However, under the first exception, if the building is provide with fire sprinklers, there is no limitation as to where the occupied roof is permitted to be located. It is intended that the fire sprinklers will provide protection from the story below the occupied roof. The second exception in 503.1.4 correlates this section with the exception to Section 903.2.1.6, which allows assembly occupancies on the roof of Type I or II open parking garages without sprinklers on all the floors below.

During the discussions of the public comment, some contributors expressed the concern that if an uncovered occupied roof had walls or screens surrounding it, for all intents and purposes, the occupied roof area functions as a story from a firefighting perspective, even though it technically does not meet the definition of a story. The second paragraph of Section 503.1.4 is intended to reduce the height of any barriers or obstacles around the occupied roof area, so it does not function as a story. The exception is intended to allow abutting penthouses, towers, domes, spires, and cupolas that comply with Section 1510 to exceed the 48" height limit. Note that other rooftop structures in Section 1510 such as mechanical equipment screens and "bulkheads" are intentionally not included in the exception, since they were the source of the concern. The specified rooftop structures are generally limited in extent as related to the occupied roof, so their walls were not judged to be a major obstacle.

All other requirements in the code regarding occupied roofs will not change. They will still need a means of egress and an accessible route. The only purpose of this proposal is to clarify whether they have an occupancy classification and where they can be located.

# G29-15

## 304.1

### **Proposed Change as Submitted**

**Proponent :** Vickie Lovell, InterCode Incorporated, representing National Greenhouse Manufacturers Association (vickie@intercodeinc.com)

## **2015 International Building Code**

### **Revise as follows:**

**304.1 Business Group B.** Business Group B occupancy includes, among others, the use of a building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts. Business occupancies shall include, but not be limited to, the following:

Airport traffic control towers

*Ambulatory care facilities*

Animal hospitals, kennels and pounds

Banks

Barber and beauty shops

Car wash

Civic administration

*Clinic, outpatient*

Dry cleaning and laundries: pick-up and delivery stations and self-service

Educational occupancies for students above the 12th grade

Electronic data processing

Food processing establishments and commercial kitchens not associated with restaurants, cafeterias and similar dining facilities not more than 2,500 square feet (232 m<sup>2</sup>) in area.

Greenhouses attached to structures classified as Group B

Laboratories: testing and research

Motor vehicle showrooms

Post offices

Print shops

Professional services (architects, attorneys, dentists, physicians, engineers, etc.)

Radio and television stations

Telephone exchanges

Training and skill development not in a school or academic program (this shall include, but not be limited to, tutoring centers, martial arts studios, gymnastics and similar uses regardless of the ages served, and where not classified as a Group A occupancy).

**Reason:** Buildings made for human habitation maintain specific lighting, ventilation, heating and cooling levels that are suitable for the health and welfare of humans and their property, even though plants can co-exist in such environments. The main distinguishing feature between a greenhouse and other structures is that the environment in a greenhouse is designed and maintained exclusively for, and is essential for the aggressive propagation of plants by commercial growers. However, other activities can be conducted in a greenhouse, such as retail business, research by schools and universities, conservation, education, display by botanical institutions holding documented collections of specialty plants, and similar activities. Most

importantly, the unique environment must be carefully controlled with conditions specific to the plants in the greenhouse; otherwise, the plants will not survive. The intent of this proposal is to clarify that greenhouses, typically considered to be Group U, are being used for educational occupancies for students above the 12th grade such as universities and schools, laboratories for research, and other professional settings. This proposal helps code users and enforcers to apply the requirements consistently and appropriately for greenhouses that have been determined to be in this occupancy group.





Greenhouses can be free standing or attached to a university classroom or laboratory for scientific studies. Access is limited to students and faculty - Use Group B or U.

**Cost Impact:** Will not increase the cost of construction  
There is no cost impact related to this proposal because this code change only adds greenhouses to Group B.

G29-15 : 304.1-  
LOVELL4395

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The B-occupancy classification application is unclear.

Compared with G27-13 where the 'green' purpose is identified, this proposal simply says its attached to a B occupancy. There is no limit as to ratio compared to the balance of the building. What would be a greenhouse which is stand alone - and isn't attached to anything - be classified.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : Vickie Lovell, InterCode Incorporated, representing**

**National Greenhouse Manufacturers Association  
(vickie@intercodeinc.com) requests Approve as Modified by this  
Public Comment.**

**Modify as Follows:**

## **2015 International Building Code**

**304.1 Business Group B.** Business Group B occupancy includes, among others, the use of a building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts. Business occupancies shall include, but not be limited to, the following:

Airport traffic control towers

*Ambulatory care facilities*

Animal hospitals, kennels and pounds

Banks

Barber and beauty shops

Car wash

Civic administration

*Clinic, outpatient*

Dry cleaning and laundries: pick-up and delivery stations and self-service

Educational occupancies for students above the 12th grade

Electronic data processing

Food processing establishments and commercial kitchens not associated with restaurants, cafeterias and similar dining facilities not more than 2,500 square feet (232 m<sup>2</sup>) in area.

~~Greenhouses attached to structures classified as Group B~~ used for education for students above the 12th grade

Laboratories: testing and research

Motor vehicle showrooms

Post offices

Print shops

Professional services (architects, attorneys, dentists, physicians, engineers, etc.)

Radio and television stations

Telephone exchanges

Training and skill development not in a school or academic program (this shall include, but not be limited to, tutoring centers, martial arts studios, gymnastics and similar uses regardless of the ages served, and where not classified as a Group A occupancy).

**Commenter's Reason:** Although the committee members were generally favorable to the concept of assigning occupancy classifications to greenhouses where appropriate, they correctly identified a practical problem with the wording in the original proposal for Use Group B. The only intent of the proposal and this public comment is to clarify that greenhouses, typically considered to be Group U, are being used for educational occupancies for students above the 12th grade in universities and vocational schools. This public comment attempts to clarify that when a greenhouse is used as a teaching venue with students and teaching staff present, it should be classified as a Group B.

This proposal helps code users and enforcers to apply the requirements consistently and appropriately for greenhouses that have been determined to be in this occupancy group. Buildings made for human habitation maintain specific lighting, ventilation, and heating and cooling levels that are suitable for the health and welfare of humans and their property, even though plants can co-exist in such environments.

The main distinguishing feature between a greenhouse and other structures is that the environment in a greenhouse is designed and maintained exclusively for, and is essential for the aggressive propagation of plants by commercial growers. However, other activities can be conducted in a greenhouse such as retail business, research by schools and universities, conservation, education, display by botanical institutions holding documented collections of specialty plants, and similar activities. Most importantly, the unique environment must be carefully controlled with conditions specific to the plants in the greenhouse; otherwise, the plants will not survive.

The proposal and subsequent public comment is part of a bigger cache of proposals intended to distinguish the various uses of greenhouses above and beyond the protection, cultivation and maintenance of plants:

- G13
- G27
- G29
- G30
- G31
- G48

Cost Impact: Will not increase the cost of construction.

There is no cost impact related to this proposal because this code change only adds greenhouses to Group B.

---

**G29-15**

# G30-15

## 305.1.2 (New)

### Proposed Change as Submitted

**Proponent :** Vickie Lovell, InterCode Incorporated, representing National Greenhouse Manufacturers Association (vickie@intercodeinc.com)

## 2015 International Building Code

### Add new text as follows:

**305.1.2 Greenhouses** Greenhouses attached to structures classified as Group E occupancies shall be classified as Group E.

**Reason:** Buildings made for human habitation maintain specific lighting, ventilation, heating and cooling levels that are suitable for the health and welfare of humans and their property, even though plants can co-exist in such environments. The main distinguishing feature between a greenhouse and other structures is that the environment in a greenhouse is designed and maintained exclusively for, and is essential for the aggressive propagation of plants by commercial growers. However, other activities can be conducted in a greenhouse, such as retail business, research by schools and universities, conservation, education, display by botanical institutions holding documented collections of specialty plants, and similar activities. Most importantly, the unique environment must be carefully controlled with conditions specific to the plants in the greenhouse; otherwise, the plants will not survive. The intent of this proposal is to clarify that greenhouses, while typically determined to be Group U, are being used for educational occupancies for students in private and public schools, laboratories, and other educational venues. This proposal helps code users and enforcers to consistently apply the requirements appropriately for greenhouses determined to be in this occupancy group.

**Cost Impact:** Will not increase the cost of construction  
There is no cost impact related to this proposal because this code change only adds greenhouses to Group E.

G30-15 : 305.1.2 (New)-  
LOVELL5092

---

### Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** Similar to G29-15, this proposal doesn't again specify a use but simply that it is attached to a building that is classified as Group E. This doesn't provide any clarity.

**Assembly Action :**

**None**

---

### Individual Consideration Agenda

*Public Comment 1:*

**Proponent : Vickie Lovell, InterCode Incorporated, representing National Greenhouse Manufacturers Association (vickie@intercodeinc.com) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

## **2015 International Building Code**

**305.1.2 Greenhouses** ~~Greenhouses attached to structures classified as Group E occupancies shall be classified as Group E~~ used for educational purposes through the 12th grade.

**Commenter's Reason:** Buildings made for human habitation maintain specific lighting, ventilation, and heating and cooling levels that are suitable for the health and welfare of humans and their property, even though plants can co-exist in such environments. The main distinguishing feature between a greenhouse and other structures is that the environment in a greenhouse is designed and maintained exclusively for, and is essential for the aggressive propagation of plants by commercial growers. However, other activities can be conducted in a greenhouse such as retail business, research by schools and universities, conservation, education, display by botanical institutions holding documented collections of specialty plants, and similar activities. Most importantly, the unique environment must be carefully controlled with conditions specific to the plants in the greenhouse; otherwise, the plants will not survive.

The intent of this proposal is to clarify that greenhouses, while typically determined to be Group U, are being used for educational occupancies for students in private and public schools, and other educational venues. The proposal and subsequent public comment is part of a bigger cache of proposals intended to distinguish the various uses of greenhouses above and beyond the protection, cultivation and maintenance of plants:

G13  
G27  
G29  
G30  
G31  
G48

Although the committee members were generally favorable to the concept of assigning occupancy classifications to greenhouses when appropriate, they correctly identified a practical problem in the original proposal with the wording used to describe Use Group E.

This public comment attempts to clarify that when the greenhouse is used as a teaching venue, or for testing and research, it should be classified as a Group E. Whether or not the greenhouse is attached to the rest of the Group E venue is of little consequence in this context.

This proposal helps code users and enforcers to apply the requirements consistently and appropriately for greenhouses that have been determined to be in this occupancy group.

**Cost Impact:** Will not increase the cost of construction.

There is no cost impact related to this proposal because this code change only adds greenhouses to Group E.



# G33-15

308.3.4, 308.4.2, 310.5.1, [F] 903.2.8.4 (IFC 903.2.8.4)

## Proposed Change as Submitted

**Proponent :** Carl Baldassarra, P.E., FSFPA, P.E., FSFPE, Chair, Code Technology Committee, representing Code Technology Committee (CTC@iccsafe.org)

### 2015 International Building Code

Revise as follows:

**308.3.4 Five or fewer persons receiving custodial care.** A facility with five or fewer persons receiving custodial care shall be classified as Group R-3 ~~or shall comply with the *International Residential Code* provided an *automatic sprinkler system* is installed in accordance with Section 903.3.1.3 or Section P2904 of the *International Residential Code*.~~

**308.4.2 Five or fewer persons receiving medical care.** A facility with five or fewer persons receiving medical care shall be classified as Group R-3 ~~or shall comply with the *International Residential Code* provided an *automatic sprinkler system* is installed in accordance with Section 903.3.1.3 or Section P2904 of the *International Residential Code*.~~

**310.5.1 Care facilities within a dwelling.** ~~Care facilities for A dwelling with five or fewer persons receiving custodial or medical care that are within a single family dwelling are , shall be permitted to comply be constructed in accordance with the *International Residential Code* provided an *automatic sprinkler system* is installed in accordance with Section 903.3.1.3 or Section P2904 of the *International Residential Code*.~~

### 2015 International Fire Code

Revise as follows:

**903.2.8.4 Care facilities.** An *automatic sprinkler system* installed in accordance with Section 903.3.1.3 shall be permitted in care facilities a dwelling with five or fewer individuals ~~in a single family dwelling.~~ providing custodial or medical care.

**Reason:** The intent of this proposal is to coordinate the language between sections and to let the IRC requirements determine the sprinkler regulations. The provisions for 5 or fewer persons receiving care under Group I-1 and I-2 (308.3.4, 308.4.2) is strictly a reference to the requirements in Group R-3 (310.5.1). If a care facility is not within a dwelling, it is a Group R-3. If care is provided for individuals within a home, they can follow the IRC for construction requirements.

The dwelling with 5 or fewer persons receiving care can literally be single family homes or small group home. The Group R-4 facilities were developed to be consistent with the Fair Housing Act. Over time, changes have been made to the codes that have resulted in jurisdictions being subject to discrimination lawsuits under the Fair Housing Act.

The IRC has a sprinkler requirement, so these homes should be permitted to be constructed in accordance with the IRC. Forcing a facility to drag a sprinkler system with them, just in case a jurisdiction may decide to not require single family home to sprinkler, is not good code practice.

NFPA 13D sprinkler systems are required for care facilities with 5 or fewer

residents (Section 903.2.8.4) that decide to construct in the IBC. The proposed wording is for consistency in the language in Chapter 3.

The change to IFC 903.2.8.4 is strictly consistency in terminology and is not a technical change.

The ICC Code Technology Committee (CTC) has just completed its 10th year. The ICC Board has decided to sunset the CTC. The sunset plan includes re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). The two remaining CTC Areas of Study are Care Facilities and Elevator Lobbies/WTC Elevator issues. This proposal falls under the Care Facilities Area of Study. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website at: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>.

**Cost Impact:** Will not increase the cost of construction  
Sprinklers requirements for homes are addressed in the IRC. Working within the family of codes, this is not a change in requirements.

G33-15 : 308.3.4-  
BALDASSARRA4268

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The provisions assure that if these occupancies are built under the auspices of the *International Residential Code* that they are protected with an automatic sprinkler system. If the text is removed, that assurance is lost. With many states and localities removing sprinkler requirements when the IRC is adopted, this language in the IBC assures sprinkler protection.

**Assembly Motion:**

**As Submitted**

**Online Vote Results:**

**Failed**

Support: 23.27% (104) Oppose: 76.73% (343)

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : Carl Baldassarra, P.E., FSFPE, representing Code Technologies Committee ([CTC@iccsafe.org](mailto:CTC@iccsafe.org))**

**requests Approve as Submitted.**

**Commenter's Reason:** Much of the testimony against this proposal was regarding licensed facilities or businesses that take care of the elderly. This change is only dealing with facilities with 5 or fewer residents. They are allowed to use the IRC because this could literally be a single family home with someone who needed care. States do not require facilities with 5 or fewer to be licensed facilities. Also, the current text does not require this to be a business.

The committee stated that these facilities should be sprinklered. The IRC requires sprinklers. Requirements should not be buried in the IBC that is only to specifically over ride a jurisdiction possibly modifying the IRC. If the membership does not want to allow for anyone who needs custodial care to live in a single family home they

should change the requirement to keep these facilities within the IBC and not allow them to use the IRC as an option for construction.

## *Public Comment 2:*

**Proponent : Stephen Thomas, Colorado Code Consulting, LLC, representing International Association of Building Officials (IABO) (sthomas@coloradocode.net) requests Approve as Submitted.**

**Commenter's Reason:** Several local building officials have been sued for enforcing the current language in the code as it is now written. The lawsuits and threats of legal action are being filed under the Americans with Disabilities Act (ADA). The argument is that this creates an unequal requirement on buildings just because the occupants have a disability. If you require sprinklers in a home that has people with disabilities, but not a home where people without disabilities, you are violating the ADA. If you require fire sprinklers in homes whether they have people with disabilities or not, you are not in violation. You are providing equal enforcement. We should not have a provision in the code where we place the building official and local authority in a position of being sued under a federal law.

We do not need language in the IBC to provide fire sprinklers if the building is constructed under the IRC. The IRC already requires the fire sprinklers. One of the arguments against this proposal is that jurisdictions delete the fire sprinklers as part of their adoption of the code. Past actions of the code committees and the membership have confirmed that we cannot base a decision on a code change that is dependent on what amendments are made at the local level. We need to consider the code change based on the current language in the codes.

In addition, NFPA 101 does not require fire sprinklers in these types of facilities if they are converted facilities; they serve eight or less residents and the occupants are able to move to a point of safety within 3 minutes. The majority of the facilities that are covered by the code are converted units. The residents are generally able to evacuate on their own.

There is also no clarification on who is providing the medical or custodial care in these facilities. It could be read that if a family member has a disability and the family uses a visiting nurse service to provide the medical or custodial care, the code would require that the dwelling unit be provided with fire sprinklers. We do not believe that this is the intent of this section, but that is what it says. If I have one person receiving custodial or medical care, that is less than 5 and would require me to comply with these sections. If that is the case, the IRC requirements would be met.

---

G33-15

# G35-15

202 (New), 308.2, 308.5, 308.5.6 (New)

## Proposed Change as Submitted

**Proponent :** Edward Kulik, representing Building Code Action Committee (bcac@iccsafe.org)

### 2015 International Building Code

Add new definition as follows:

#### SECTION 202 DEFINITIONS

**LOCKUP FACILITY** Buildings containing holding cells, rooms or areas where occupants are restrained or detained.

Revise as follows:

**308.2 Definitions.** The following terms are defined in Chapter 2:

**24-HOUR BASIS.**

**CUSTODIAL CARE.**

**DETOXIFICATION FACILITIES.**

**FOSTER CARE FACILITIES.**

**HOSPITALS AND PSYCHIATRIC HOSPITALS.**

**LOCKUP FACILITY**

**INCAPABLE OF SELF-PRESERVATION.**

**MEDICAL CARE.**

**NURSING HOMES.**

**308.5 Institutional Group I-3.** Institutional Group I-3 occupancy shall include all buildings and structures or portions thereof that are inhabited by ~~more than five persons~~ people who are under restraint or security. A Group I-3 facility is occupied by persons who are generally *incapable of self-preservation* due to security measures not under the occupants' control. This group shall include, but not be limited to, the following:

Correctional centers

Detention centers jails

Lockup facility

Prerelease centers

Prisons

Reformatories

Buildings of Group I-3 shall be classified as one of the occupancy conditions specified in Sections 308.5.1 through 308.5.5 (see Section 408.1).

Add new text as follows:

**308.5.6 Lockup facilities.** A lockup facility for five or fewer persons shall be classified as a Group B occupancy or as part of the primary occupancy of the building. Such facilities shall comply with all of the following:

1. The area containing a lockup facility shall be separated from other rooms, spaces or areas by smoke barrier complying with Section 709.
2. The building containing a lockup facility shall be protected with an automatic fire sprinkler system complying with Section 903.

3. The area containing a lockup facility shall be provided with an automatic smoke detection system installed in accordance with Section 907.

4. There shall be not more than one lock-up facility within a building.

5. The restraint of individuals within the lock-up facility shall be for less than 24 hours.

**Reason:** This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

This code proposal adds a definition for lockup facilities that is needed in the Code that clarifies the use occupancies for buildings/spaces that contain five or less occupants under restraint or detained.

This code proposal includes the revision of Section 308.5 and the addition of Section 308.5.6. The revision removes more than five persons, and adds buildings and structures containing a room, holding cell or cellblock used to place persons under restraint or security. The new section adds lockup facilities and also clarifies that an approved smoke barrier complying with Section 709 be provided, and also fire sprinkler and smoke detectors be installed. There would be no more than one lockup facility within a building and the restraint of individuals is for less than 24 hours.

**Cost Impact:** Will increase the cost of construction

This proposal will increase the cost of construction of rooms or spaces used to restrain or detain occupants.

G35-15 : 308.5.6 (New)-  
KULIK4893

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee found that the proposal, while a good attempt to address the issue, left too many unanswered concerns. There was concern that the requirements would be too onerous when applied to a smaller building, or perhaps for a temporary holding room located in a mall or a school. On the other hand a large court building might have a small lock up next to each of 12 court rooms. Such would be prohibited by the limitation of one such lockup per building. In addition, the change in Section 308.5 would leave unanswered what was an I-3 with 5 or fewer occupants which was not a lockup facility.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : Edward Kulik, Chair, representing ICC Building Code Action Committee and Adolf Zubai, Chair, representing International Association of Fire Chiefs, Fire & Life Safety Section**

requests Approve as Modified by this Public Comment.

Modify as Follows:

## 2015 International Building Code

### SECTION 202 DEFINITIONS

~~**LOCKUP TEMPORARY DETENTION FACILITY**~~ Buildings containing holding cells, rooms or areas where occupants are restrained or detained for a duration of less than 24 hours.

**308.2 Definitions.** The following terms are defined in Chapter 2:

**24-HOUR BASIS.**

**CUSTODIAL CARE.**

**DETOXIFICATION FACILITIES.**

**FOSTER CARE FACILITIES.**

**HOSPITALS AND PSYCHIATRIC HOSPITALS.**

~~**LOCKUP FACILITY**~~

**INCAPABLE OF SELF-PRESERVATION.**

**MEDICAL CARE.**

**NURSING HOMES.**

**TEMPORARY DETENTION FACILITY**

**308.5 Institutional Group I-3.** Institutional Group I-3 occupancy shall include all buildings and structures or portions thereof that are inhabited by people who are under restraint or security. A Group I-3 facility is occupied by persons who are generally *incapable of self-preservation* due to security measures not under the occupants' control. This group shall include, but not be limited to, the following:

Correctional centers

Detention centers Jails

~~Lockup facility~~

Prerelease centers

Prisons

Reformatories

Temporary Detention Facilities

Buildings of Group I-3 shall be classified as one of the occupancy conditions specified in Sections 308.5.1 through ~~308.5.5~~ 308.5.6 (see Section 408.1).

**308.5.6 ~~Lockup Condition 6 temporary detention facilities.~~** ~~A lockup facility for five or fewer persons This occupancy shall be classified as a Group B occupancy or as part of the primary occupancy of the building. Such facilities shall comply~~ include temporary detention facilities complying with all of the following:

1. Condition 6 temporary detention facilities shall be permitted in other than Group I-1 or I-2 occupancies

~~1.2.~~ The area containing a lockup Condition 6 temporary detention facility shall be separated from other rooms, spaces or areas by smoke barrier barriers complying with Section 709.

~~2.3.~~ The building containing a lockup Condition 6 temporary detention facility shall be protected with an automatic fire sprinkler system

complying with Section 903.

~~3.4.~~ The area containing a lockup Condition 6 temporary detention facility shall be provided with an automatic smoke detection system installed in accordance with Section 907.

~~4. There shall be not more than one lock up facility within a building.~~

~~5~~ 5. The restraint of individuals within the lock-up Condition 6 temporary detention facility shall be for less than 24 hours.

6. Not more than five persons shall be detained in the Condition 6 temporary detention facility at any one time.

7. The Condition 6 temporary detention facility shall be under constant supervision by a responsible person with the ability to release any persons confined within the facility.

8. The Condition 6 temporary detention facility shall be permitted to be classified as part of the primary occupancy of the building.

-

**Commenter's Reason: Kulik:** This Public Comment is designed to clarify this proposal for temporary detention facilities.

To address committee concerns and testimony from the floor the proposal has been modified to eliminate the Group B classification. This change coupled with identifying the Temporary Detention parameters as an I-3 Condition 6 occupancy eliminates the question on what a small facility, 5 or less restrained individuals, would be. It would be an I-3 unless the temporary detention facility option was taken as permitted and the requirements of proposed Section 308.5.6 are complied with. The limitation on one temporary detention facility within a building has been eliminated to address situations such as court houses where each courtroom may have a temporary detention facility. The name of the use has been modified to more clearly reflect the temporary nature of the restraint.

**Zubia:** This Public Comment is designed to clarify this proposal for temporary detention facilities.

The original proposal contained internal conflicts. First it stated that a temporary detention facility was a Group I-3, then it stated they were Group B. This public comment continues with philosophy that anywhere a person's liberties are restricted should be considered a Group I-3. Therefore, this proposal adds Condition 6 as another level of detention under Group I-3.

Initially, the title of this use is revised to temporary detention facility. This title more accurately describes the use of these areas. These areas must be considered temporary since stay longer than 24 hours is not permitted.

Also, the use has been included as another Condition under Group I-3. Group I-3 currently offers 5 conditions for various levels of application and restraint. The temporary detention facility becomes Condition 6.

Requirements for Condition 6 temporary detention facilities include that the facility must be located in a sprinklered building, protected with a smoke detection system, separated from other portions of the building, contain no more than 5 persons, and have constant supervision.

These facilities can be found in a typical mall building, where security staff will detain someone until the police department arrives to take custody and transport. These provisions allow this situation to occur while providing a safe situation for the restrained persons. This proposal also allows the construction of the Group I-3 Condition 6 to meet the requirements for construction of the main building itself rather than Group I-3 construction for the room of restraint.

The limitation to only one Group I-3 Condition 6 in a building is deleted. Many larger facilities can have a need for different locations for temporary detention facilities. All of the provisions will apply in all locations.



# G40-15

## 310.5, 310.5.2

### **Proposed Change as Submitted**

**Proponent :** Edward Kulik, representing Building Code Action Committee (bcac@iccsafe.org)

## **2015 International Building Code**

### **Revise as follows:**

**310.5 Residential Group R-3.** Residential Group R-3 occupancies where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, R-4 or I, including:

Buildings that do not contain more than two *dwelling units*

*Boarding houses* (nontransient) with 16 or fewer occupants

*Boarding houses* (*transient*) with 10 or fewer occupants

Care facilities that provide accommodations for five or fewer persons receiving care

*Congregate living facilities* (nontransient) with 16 or fewer occupants

*Congregate living facilities* (*transient*) with 10 or fewer occupants

Owner-occupied Lodging houses (*transient*) with five or fewer guest rooms and 10 or fewer occupants

**310.5.2 Lodging houses.** Owner-occupied *lodging houses* with five or fewer guest rooms and 10 or fewer occupants shall be permitted to be constructed in accordance with the *International Residential Code*.

**Reason:** This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

The purpose of this code change is to provide for further clarification of the correlation between the International Residential Code and the International Building Code. During the 2009/2010 code cycle, an exemption to IRC Section R101.2 was approved allowing owner-occupied lodging houses with five or fewer guestrooms to be constructed under the IRC. However, a correlating provision was not added to the IBC, resulting in a conflict between the two codes and a potential for confusion in enforcement. Last cycle language was added to the IBC at the final action hearing to correlate the IBC with the IRC.

This proposal further refines the added language by inserting "owner occupied" which is a qualifier already in the IRC; by clarifying that the lodging use is of a "transient" nature consistent with other Group R-3 use language. It further ties in the 10 or fewer occupant load criteria which is also intended for consistency with the current Board house language, a lodging house is a form of a boarding house.

**Cost Impact:** Will not increase the cost of construction  
This proposal will decrease the cost of construction by further clarifying that certain

owner-occupied lodging houses can be constructed under the IRC rather than the IBC and by providing increased consistency of language and application.

G40-15 : 310.5-  
KULIK5031

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee found the dual limit confusing. What is the occupancy if there are 4 guest rooms but 12 occupants? There was reluctance to add 'owner occupied' to the code, even though it is consistent with the IRC.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : Edward Kulik, representing ICC Building Code Action Committee (bcac@iccsafe.org) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

**310.5 Residential Group R-3.** Residential Group R-3 occupancies where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, R-4 or I, including:

Buildings that do not contain more than two *dwelling units*

*Boarding houses* (nontransient) with 16 or fewer occupants

*Boarding houses* (transient) with 10 or fewer occupants

Care facilities that provide accommodations for five or fewer persons receiving care

*Congregate living facilities* (nontransient) with 16 or fewer occupants

*Congregate living facilities* (transient) with 10 or fewer occupants

~~Owner-occupied~~ *Lodging houses* (transient) with five or fewer *guest rooms* and 10 or fewer occupants

**310.5.2 Lodging houses.** Owner-occupied *lodging houses* with five or fewer *guest rooms* and 10 or fewer total occupants shall be permitted to be constructed in accordance with the *International Residential Code*.

**Commenter's Reason:** The purpose of this public comment is to address the committee comments as reflected in the ROCAH. The committee vote to disapprove the proposal was 8-6, a close vote which indicates the proposal had support from a number of the committee members.

Some committee members were hesitant about combining the number of guest rooms and number of occupants in one provision. Both elements are necessary in order to coordinate with the IRC while still maintaining internal consistency with the IBC. Occupant loads are not calculated in the IRC, hence the need to limit owner-occupied lodging houses by number of guest rooms to correlate with the existing exemption in the IRC. However, since there is no limit in either the IRC or IBC on the number of occupants in a guestroom, an overall limit on the number of occupants in the lodging house is needed to maintain consistency with the maximum number of

occupants for other similar Group R-3 occupancies such as boarding houses and congregate living facilities. By adding "total", the public comment further clarifies that the maximum occupant load includes the owner and his family in addition to the occupants of the guest rooms.

The committee was also hesitant about adding the term "owner occupied" to Section 310.5, though it appears in Section 310.5.2 and in the IRC. The committee was correct that this creates an unintended consequence. If the Group R-3 classification is limited to owner-occupied houses, other lodging houses become Group R-1 or R-2 regardless of the number of occupants. This was not the BCAC's intent, and this public comment deletes the term "owner-occupied" from the listing in 310.5. The term is retained in 310.5.2 to correlate with the IRC for the specific case where the owner is present. Other lodging houses would still be able to be classified a Group R-3 occupancy.

---

**G40-15**

# G41-15

## 310.5.2

### **Proposed Change as Submitted**

**Proponent :** Anthony Apfelbeck, representing City of Altamonte Springs (ACApfelbeck@altamonte.org)

## **2015 International Building Code**

**Revise as follows:**

**310.5.2 Lodging houses.** Owner-occupied *lodging houses* with five or fewer *guest rooms* shall be permitted to be constructed in accordance with the International Residential Code provided an automatic sprinkler system is installed in accordance with Section 903.3.1.3 or Section P2904 of the International Residential Code.

**Reason:** The base requirements of the IRC and the IBC require fire sprinkler protection for all Group R occupancies and for all One-and two-family dwelling and townhomes. This code change proposal clarifies fire sprinkler protection is still required for these uses regardless of an application under the IRC or IBC. This is similar language to that used above in 310.5.1 and other sections of the code that permit a use under the IRC but require fire sprinkler protection for occupant life safety protection under the base code requirements.

**Cost Impact:** Will not increase the cost of construction  
As the base IRC and the IBC already require fire sprinkler protection for this type of occupancy there is no cost when a jurisdiction adopts the IRC and IBC in unamended format.

G41-15 : 310.5.2-  
APFELBECK3859

---

### **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee concluded that the pointer to the IRC doesn't need to say sprinklers are required when the IRC requires the provisions of sprinklers. While testimony focused on the change of occupancy and what is needed when such change occurs. Discussion of change of occupancy is addressing the wrong code.

**Assembly Action :**

**None**

---

### **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : Jeff Hugo, National Fire Sprinkler Association, representing National Fire Sprinkler Association (hugo@nfsa.org) requests Approve as Submitted.**

**Commenter's Reason:** Lodging houses are a sprinklered occupancy in the IBC and when then IBC permits an occupancy to be constructed in the IRC, the fire sprinkler

stipulation is noted specifically in the IBC, as indicated in Sections 310.5.1 and 308.3.4. This is especially valid, when the user of the IBC, gets the permission to use the IRC in Chapter 3 (310.5.2) of the IBC. The user could easily, but incorrectly assume that the requirements of Chapter 9, specifically, Section 903.2.8.1 would not apply since the code path in the IBC stopped at Chapter 3. Noting the sprinkler requirements in Chapter 3 is consistent with other occupancies permitted to go to the IRC, such as Sections 310.5.1 and 308.3.4.

The 2012 IRC, by F28-09/10 Part II, permitted lodging house occupancies with five or fewer guestrooms, but only when equipped with a fire sprinkler system. The scope of the IRC should reflect in the Chapter 3 of the IBC to not confuse users of the code, especially on life safety systems.

## *Public Comment 2:*

**Proponent : Edward Kulik, representing ICC Building Code Action Committee (bcac@iccsafe.org) requests Approve as Submitted.**

**Commenter's Reason:** The proposed change is needed for correlation with IRC Section 101.2, which only allows owner-occupied lodging houses with 5 or fewer guestrooms to be built under the IRC when fire sprinklers are provided. Exception 2 of IRC Section 101.2 states:

"2. Owner-occupied lodging houses with five or fewer guestrooms shall be permitted to be constructed in accordance with the International Residential Code for One- and Two-family Dwellings where equipped with a fire sprinkler system in accordance with Section P2904."

It is important to point out that prior to the 2012 editions of the I-codes, there was NO allowance to build lodging houses under the IRC. The allowance was added by Proposal G28-09/10 with the specific provision that the IRC would retain the IBC's sprinkler requirement. By approving this proposal, it will be clear in the IBC that no one should expect to use the IRC for a lodging house unless it has fire sprinklers (just as is required for these uses under the IBC). Lodging houses are commercial businesses serving transient patrons who are unrelated to the owner and have no familiarity with the property, its maintenance or fire safety deficiencies that may be present.

Approval of Proposal G41-15 as submitted will improve code correlation and reinforce an important fire safety requirement.

---

**G41-15**

# G42-15

## 310.6

### **Proposed Change as Submitted**

**Proponent :** Carl Baldassarra, P.E., FSFPA, P.E., FSFPE, Chair, Code Technology Committee, representing Code Technology Committee (CTC@iccsafe.org)

## **2015 International Building Code**

### **Revise as follows:**

**310.6 Residential Group R-4.** Residential Group R-4 occupancy shall include buildings, structures or portions thereof for more than five but not more than 16 persons, excluding staff, who reside on a 24-hour basis in a supervised residential environment and receive *custodial care*. Buildings of Group R-4 occupancy shall be classified as one of the occupancy conditions specified in Section 310.6.1 or 310.6.2. This group shall include, but not be limited to, the following:

Alcohol and drug centers

Assisted living facilities

Congregate care facilities

*Group homes*

Halfway houses

Residential board and care facilities

Social rehabilitation facilities

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, ~~except as otherwise provided~~ where specific requirements for Group R-4 are prescribed. Group R-4, Condition 1 occupancies shall be permitted to comply with the construction requirements in this code the *International Residential Code*.

**Reason:** The Group R-4 facilities were developed to be consistent with the Fair Housing Act. Over time, changes have been made to the codes that have resulted in jurisdictions being subject to discrimination lawsuits under the Fair Housing Act. The Group R-4 occupancy, when it first was developed for the code, was permitted to comply with IRC. This allowance was taken away without technical justification. The IRC has a sprinkler requirement, so these homes should be permitted to be constructed in accordance with the IRC. Forcing a facility to drag a sprinkler system with them, just in case a jurisdiction may decide to not require single family home to sprinkler, is not good code practice.

If facilities decide to stay in the IBC, Group R-4, Condition 1 are required to have a NFPA 13D sprinkler system (Section 903.2.8.2) and Group R-4, Condition 2 are required to have a NFPA 13R sprinkler system (Section 903.2.8.3). The proposed wording is for consistency in the language in Chapter 3. The Group R-4, Condition 2, due to the level of care provided for the residents, the Condition 2 will stay with the IBC so it gets the increased sprinkler protection and attic protection. Group R-4, Condition 1, has residents capable of self-preservation, so they can go to the IRC and the sprinkler protection there.

The ICC Code Technology Committee (CTC) has just completed its 10th year. The ICC Board has decided to sunset the CTC. The sunset plan includes re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). The two remaining CTC Areas of Study are Care Facilities and Elevator Lobbies/WTC Elevator issues. This proposal falls under the Care Facilities Area of Study. Information on the

CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website at: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>.

**Cost Impact:** Will not increase the cost of construction  
The prescriptive requirements of the IRC are generally the same or lesser cost that IBC Type 5 construction.

G42-15 : 310.6-  
BALDASSARRA4269

---

## **Public Hearing Results**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The following is a corrected Committee Reason Statement for G42 -15 and was posted May 15, 2015. It replaces the previously posted statement:

The committee approved this proposal to provide clarification regarding the requirements for R-4 occupancies. While in general R-4 occupancies are to comply with R-3 standards, there are specific provisions which apply specifically to R-4 occupancies. The proposal also clarifies that only R-4 Condition 1 occupancies have the option of comply with the provisions of the IRC. This assures that the higher needs residents of an R-4 Condition 2 occupancy are covered by the standard of the IBC. Within the family of I-Codes, the R-4 occupancy will be provided with sprinkler protection regardless of the code it is developed under. The committee acknowledged that some state adoptions have removed sprinkler requirements in the IRC.

**Assembly Motion:**

**Disapprove**

**Online Vote Results:**

**Successful**

Support: 68.52% (283) Oppose: 31.48% (130)

**Assembly Action :**

**Disapproved**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : Jeffrey Shapiro, representing IRC Fire Sprinkler Coalition ([jeff.shapiro@intlcodeconsultants.com](mailto:jeff.shapiro@intlcodeconsultants.com)) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

**310.6 Residential Group R-4.** Residential Group R-4 occupancy shall include buildings, structures or portions thereof for more than five but not more than 16 persons, excluding staff, who reside on a 24-hour basis in a supervised residential environment and receive *custodial care*. Buildings of Group R-4 occupancy shall be classified as one of the occupancy conditions specified in Section 310.6.1 or 310.6.2. This group shall include, but not be limited to, the following:

Alcohol and drug centers  
Assisted living facilities

Congregate care facilities  
Group homes  
Halfway houses  
Residential board and care facilities  
Social rehabilitation facilities

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except where specific requirements for Group R-4 are prescribed. Group R-4, Condition 1 occupancies shall be permitted to comply with the construction requirements in the *International Residential Code* provided an automatic sprinkler system is installed in accordance with Section 903.3.1.3 or Section P2904 of the International Residential Code.

**Commenter's Reason:** We have no concern with this proposal being disapproved, as recommended by the online vote. However, if it is ultimately the membership's preference to allow R4 occupancies to be built under the IRC, the inclusion of fire sprinklers should be mandated by the IBC as a condition of this allowance.

Mandating the sprinkler system under the IBC correlates with the committee recommendation and assembly action on G33-15 and with how the IRC deals with lodging houses under IRC Section 101.2 (and in the IBC if the public comment to G41-15 is successful).

It is important that the IBC specify a sprinkler requirement as a condition of allowing application of the IRC to non-family uses of dwellings to ensure that sprinklers are provided to protect occupants. Relying solely on the IRC sprinkler requirement, which has been legislatively blocked in 16 states and not yet adopted in many other jurisdictions, would certainly be inconsistent with the intent of the IBC and IRC, which is to require fire sprinklers in all residential occupancies.

If G42-15 were approved without this amendment, it is realistic to expect that single family homes, duplexes and townhouses will be constructed for group home applications that include rehab facilities, halfway houses, etc. with up to 16 occupants plus staff in each dwelling unit and having no fire sprinklers. That's a life safety risk that far outweighs arguing semantics and philosophical aspects of model codes and code adoption.

## *Public Comment 2:*

**Proponent : Assembly Action requests Disapprove.**

**Commenter's Reason:** This code change proposal is on the agenda for individual consideration because the proposal received a successful assembly action. The assembly action for Disapprove was successful by a vote of 68.52% (283) to 31.48% (130) by eligible members online during the period of May 14 - May 28, 2015.

---

G42-15

# G43-15

## 311.1.1

### **Proposed Change as Submitted**

**Proponent :** Stephen Thomas, Colorado Code Consulting, LLC, representing International Association of Building Officials (sthomas@coloradocode.net)

## **2015 International Building Code**

**Revise as follows:**

**311.1.1 Accessory storage spaces.** A room or space used for storage purposes that is ~~less than 100 square feet (9.3 m<sup>2</sup>) in area and~~ accessory to another occupancy shall be classified as part of that occupancy. ~~The aggregate area of such rooms or spaces shall not exceed the allowable area limits of Section 508.2. \_~~

**Reason:** The subject of storage rooms has been discussed since the first edition of the IBC. The original code considered storage rooms as incidental uses and required them to be separated from the remainder of the building or be provided with a fire extinguishing system. The original requirement was based on health care uses, but was not introduced that way. That provision was deleted from the Incidental Use Table because it was causing problems with the design of buildings and there was no technical justification to maintain the requirement.

The 2015 IBC was revised with the above section limiting the area to 100 square feet once again. However, it does not tell the user what to do if it exceeds 100 square feet. There was also no technical justification provided to support the 100 square foot limit. This proposal deletes the square footage limit as well as deleting the last sentence that did not give any direction as to what occupancy was to be used to determine the maximum aggregate area.

**Cost Impact:** Will not increase the cost of construction. This change is a clarification of the code and reduction in the potential requirements. Therefore, it may be a reduction in construction cost.

G43-15 : 311.1.1-  
THOMAS5290

---

### **Public Hearing Results**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The square footage limitation is unneeded. The limit is unneeded. Many felt that the elimination of the whole provision would be appropriate since the accessory occupancy regulation is adequately addressed.

**Assembly Action :**

**None**

---

### **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : Maureen Traxler, Seattle Dept of Planning &**

**Development, representing Seattle Dept of Planning & Development (maureen.traxler@seattle.gov) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

## **2015 International Building Code**

~~**311.1.1 Accessory storage spaces.** A room or space used for storage purposes that is accessory to another occupancy shall be classified as part of that occupancy.~~

**Commenter's Reason:** Section 311.1.1 was added to the code during the last cycle to allow small storage rooms on upper floors. Since accessory occupancies are classified as the occupancy appropriate to their use, storage occupancies would be classified as Group S and limited to no more than 6 stories. However, this section isn't needed in the current IBC because Section 508.2.2 allows accessory occupancies to use the tabular values for height and stories of the main occupancy.

### *Public Comment 2:*

**Proponent : William Hall, Porand Cement Association, representing Portland Cement Association (jhall@cement.org) requests Disapprove.**

**Commenter's Reason:** Removing the 100 square foot. limit now means that storage rooms are unlimited in size and without door closers or even doors. The code is very clear on what to do if the storage area is greater than 100 square feet meet the separated or non-separated provisions of the code. If this change is approved, the storage area can be larger than the main occupancy and will cause conflict with other sections. Storage area have far greater fuel loads and are typically un-occupied.

---

**G43-15**

# G45-15

202, 202 (New), 312.1, C101.1

## Proposed Change as Submitted

**Proponent :** Joe Scibetta, representing Self

### 2015 International Building Code

**Revise as follows:**

#### SECTION 202 DEFINITIONS

**AGRICULTURAL BUILDING.** A structure designed and constructed to house farm implements, hay, grain, ~~poultry, livestock~~ or other horticultural products. This structure shall not be a place of human habitation or a place of employment where agricultural products are processed, treated or packaged, nor shall it be a place used by the public.

**Add new definition as follows:**

**ANIMAL HOUSING FACILITY.** Area of a building or structure, including interior and adjacent exterior spaces, where humans interact with animals for the purpose of feeding, resting, working, exercising, treating, examining, or exhibiting the animals in their care. Examples of animal housing facilities include, but are not limited to, barns, kennels, coops, stables, sheds, pens, corrals, runs, vivaria, terraria, laboratories, and zoos.

**Revise as follows:**

**312.1 General.** Buildings and structures of an accessory character and miscellaneous structures not classified in any specific occupancy shall be constructed, equipped and maintained to conform to the requirements of this code commensurate with the fire and life hazard incidental to their occupancy. Group U shall include, but not be limited to, the following:

- Agricultural buildings
- Aircraft hangars, accessory to a one or two-family residence (see Section 412.5)
- Animal housing facilities
- Barns
- Carports
- Fences more than 6 feet (1829 mm) in height
- Grain silos, accessory to a residential occupancy
- Greenhouses
- ~~Livestock shelters~~
- Private garages
- Retaining walls
- Sheds
- ~~Stables~~
- Tanks
- Towers

**C101.1 Scope.** The provisions of this appendix shall apply exclusively to

agricultural buildings and animal housing facilities. Such buildings shall be classified as Group U and shall include, but not be limited to, the following uses:

1. Livestock shelters or buildings, including shade structures and milking barns.
2. Poultry buildings or shelters.
3. Barns.
4. Storage of equipment and machinery used exclusively in agriculture.
5. Horticultural structures, including detached production greenhouses and crop protection shelters.
6. Sheds.
7. Grain silos.
8. Stables.

**Reason:** Agricultural buildings do not encompass the wide variety of animal housing facilities where humans interact with animals for the purpose of feeding, treating, exercising, working, etc. Therefore, animal housing facilities need to be incorporated into the current Group U listing. To avoid redundancies, and since animal housing facilities include but are not limited to livestock shelters and stables, those two entries have been deleted, as animal housing facilities would incorporate those structures and others fitting the definition of an animal housing facility. The current, individual listings of livestock shelters and stables do not, on their own, account for the variety of animal housing facilities that exist, whereas the term "animal housing facilities" does. The revision to the list in Section 312 is necessary to provide a better representation of structures where animals are housed and where human interaction occurs, as opposed to agricultural buildings where there is little to no human occupancy or interaction with animals. Such a refinement consolidates the separate listings of livestock shelters and stables into a broader and more encompassing heading of animal housing facilities. A corresponding definition of an animal housing facility is proposed for Chapter 2.

In keeping with those proposed changes, and since Appendix C addresses Group U structures, this proposal seeks to incorporate animal housing facilities accordingly. Since the listing in Appendix C lists some, but not all, types of animal housing facilities, the proposed language here includes the interjectory phrase "but not be limited to" so that animal housing facilities that do not fall within the categories of livestock shelter, poultry house or stable, may still be incorporated and viewed as a Group U occupancy.

**Cost Impact:** Will not increase the cost of construction  
No cost impact as this is simply a refinement of the existing list of Group U structures and providing a differentiation in terminology between animal housing facilities and agricultural buildings to ensure that both types of structures are addressed here.

G45-15 : 312.1-  
SCIBETTA3446

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** Adding the definition is adding confusion. Livestock and agricultural things are often in the same building. There was discomfort with including the terms 'zoos' and 'laboratories' because such may be more appropriate in different occupancies than Group U.

---

**Individual Consideration Agenda****Public Comment 1:**

**Proponent : Joe Scibetta, representing Self requests Approve as Submitted.**

**Commenter's Reason:** By disapproving Proposal G45-15 at the Action Hearings in April, the responsible committee is perpetuating a definition that is incorrect and overlooking an important type of facility that should be defined and placed within the proper classification.

The definition of Agricultural Buildings is incorrect and needs to be revised. Agricultural Buildings are for farm implements, feed, storage materials, etc., not for animals. Reference to poultry and livestock do not belong in that definition as animals are not storage material. NFPA 150, the Standard for Fire and Life Safety in Animal Housing Facilities, states that animals are "sentient beings with a value greater than that of simple property" (NFPA 150 A.1.1.1). Additionally, NFPA 101, The Life Safety Code, has eliminated reference to animals from both the Storage Occupancy definition and Storage Occupancy chapters in that document. Therefore, the IBC's inclusion of livestock and poultry housing in the definition of agricultural buildings, which again are structures for storage material, contradicts those two documents. The intent of the Code is to provide "safety to *life and property* from fire" (101.3). Animal housing facilities present a new opportunity for the Code to meet that intent without creating conflict or contradiction with other portions of the Code.

Proposal G45-15, therefore, refines and corrects the definition of Agricultural Buildings in keeping with the established view that animals are not storage material.

A new definition of Animal Housing Facilities provides a proper placeholder, then, for facilities that house, not just livestock and poultry, but animals in labs for medical research, animals in zoos, in stables, kennels, veterinary clinics, etc. The apparent confusion during the April Action Hearings over the inclusion of various structures like labs where animals might be housed was unfounded. The proposed definition makes it clear that where an area or portion of a structure houses animals, that area or portion is considered an animal housing facility. Those areas of a lab or zoo, for example, that do not house animals would fall under other classifications. Currently, though, those areas of a structure that house animals (all types, not just livestock and poultry) are not addressed anywhere in the Code.

Furthermore, by proposing the placement of Animal Housing Facilities into the Group U classification, the IBC will provide the needed guidance on how to address these types of facilities. The resistance to placing Animal Housing Facilities in Group U is insupportable. If not Group U, then where do such facilities belong? They need to be placed somewhere in the IBC as they are currently unaddressed. Group U, an obvious grouping for miscellaneous structures that do not fit nicely into other established classifications, is the perfect placeholder. Including reference to livestock and poultry under the Agricultural Building definition is not only inaccurate but ignores the wide variety of animal housing facilities that do **not** house livestock or poultry but house other types of animals instead. The committee statement that animals and agricultural storage can and do at times occupy the same space is *not in conflict with this proposal*. Both agricultural buildings and animal housing facilities would be addressed as Group U structures. It is inaccurate, however, to conclude that agricultural buildings and animal housing facilities are synonymous. Animals in a kennel or clinic, for example, are not being housed in an agricultural building. In short, animal housing facilities are unique areas where a much wider and varied

array of human interaction with animals takes place, areas that no definition or classification currently addresses.

Proposal G45-15 should be approved as submitted as it will satisfactorily, and without conflict, resolve both a clear inaccuracy and a clear oversight within the Code.

---

**G45-15**

# G48-15

## 312.1, 312.1.1 (New)

### Proposed Change as Submitted

**Proponent :** Vickie Lovell, InterCode Incorporated, representing National Greenhouse Manufacturers Association (vickie@intercodeinc.com)

## 2015 International Building Code

### Revise as follows:

**312.1 General.** Buildings and structures of an accessory character and miscellaneous structures not classified in any specific occupancy shall be constructed, equipped and maintained to conform to the requirements of this code commensurate with the fire and life hazard incidental to their occupancy. Group U shall include, but not be limited to, the following:

Agricultural buildings  
Aircraft hangars, accessory to a one or two-family residence (see Section 412.5)  
Barns  
Carports  
Fences more than 6 feet (1829 mm) in height  
Grain silos, accessory to a residential occupancy  
~~Greenhouses~~  
Livestock shelters  
Private garages  
Retaining walls  
Sheds  
Stables  
Tanks  
Towers

### Add new text as follows:

**312.1.1 Greenhouses.** Greenhouses not classified as Group A-3, B, Group E, F-2 or Group M shall be classified as Use Group U. Greenhouses that are accessory buildings to Group B, E or M occupancies, and utility or accessory greenhouses that are not classified in any specific occupancy shall be classified as Group U.

**Reason:** Greenhouses are a type of special structure intended to create and maintain a unique sunlit environment used exclusively for, and essential to, the commercial cultivation, protection or maintenance of plants. This proposal ONLY addresses commercial greenhouse structures and NOT other spaces such as sunrooms, solariums, glass enclosed walkways, atria or other types of interior spaces that permit ample sunlight so as to prominently feature plants for aesthetic purposes.

The majority of commercial greenhouses are truly agricultural structures that are classified as Group U.

The primary purpose of a greenhouse is for the propagation of plants. Many typical building requirements intended for human comfort, health, safety and welfare are not applicable or necessary for the construction or operation of greenhouses. However, this proposal is intended to clarify that some greenhouses can be used for

other enterprises, such as retail business, research by schools and universities, conservation, education, display by botanical institutions holding documented collections of specialty plants, and similar activities. This proposal, along with the other proposals that modify the occupancies to include greenhouses, has created indicators to assist the designer and the code official to recognize when appropriate design distinctions should be made, and to help determine more consistently when a greenhouse should be classified as a use group other than Group U.

{{235}}

Greenhouse - Use Group U.

**Cost Impact:** Will not increase the cost of construction  
THERE IS NO COST IMPACT RELATED TO THIS PROPOSAL BECAUSE THIS PROPOSAL MAINLY CLARIFIES EXISTING CODE LANGUAGE REGARDING GROUP U GREENHOUSES. THE PROPOSAL DOES NOT ADD REQUIREMENTS FOR GROUP B, E, OR M GREENHOUSES BEYOND WHAT THE CODE ALREADY REQUIRES FOR THOSE OCCUPANCIES.

G48-15 : 312.1-  
LOVELL5098

---

### **Public Hearing Results**

**Committee Action:** **Approved as Modified**

**Modification:**

**312.1.1 Greenhouses.** Greenhouses not classified as Group A-3, B, Group E, ~~F-2~~ F-1 or Group M shall be classified as Use Group U. ~~Greenhouses that are accessory buildings to Group B, E or M occupancies, and utility or accessory greenhouses that are not classified in any specific occupancy shall be classified as Group U.~~

**Committee Reason:** The industry has asked us to provide clarity for the code officials in addressing these buildings. With the collection of proposals, greenhouses used for other occupancies will take precedence and only those not otherwise classified would fall to the Group U. The overall package may need some further refinement, but the committee felt this should be the beginning of the solution. The modifications changed F-2 to F-1 recognizing that plant materials and the containers provide a level of combustible materials consistent with the F-1 occupancies. The second modification deletes language that is essentially redundant with the first sentence of the new section.

**Assembly Action :** **None**

---

### **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : Amanda Hickman, InterCode Incorporated, representing National Greenhouse Manufacturers Association (amanda@intercodeinc.com) requests Approve as Modified by this Public Comment.**

**Further Modify as Follows:**

## 2015 International Building Code

**312.1 General.** Buildings and structures of an accessory character and miscellaneous structures not classified in any specific occupancy shall be constructed, equipped and maintained to conform to the requirements of this code commensurate with the fire and life hazard incidental to their occupancy. Group U shall include, but not be limited to, the following:

Agricultural buildings

Aircraft hangars, accessory to a one or two-family residence (see Section 412.5)

Barns

Carports

Fences more than 6 feet (1829 mm) in height

Grain silos, accessory to a residential occupancy

Livestock shelters

Private garages

Retaining walls

Sheds

Stables

Tanks

Towers

**312.1.1 Greenhouses.** Greenhouses not classified as Group ~~A-3~~ A, B, ~~Group E~~, ~~F-1~~ E or ~~Group M~~ shall be classified as Use Group U.

**Commenter's Reason:** The committee members were favorable to the concept of assigning occupancy classifications to greenhouses when appropriate. However, they raised a practical problem relating to Use Groups F1 and F2 for commercial greenhouses. This public comment cleans up the new language that was approved by the committee, plus it captures the Use Group F correctly depending on the crop and growing conditions, the size and scope of the greenhouse and other considerations based on the height and area table.

The majority of greenhouses are truly agricultural structures and are classified as Group U because the primary purpose of a greenhouse is for the propagation of plants. The code should retain Group U being the default occupancy Use Group for these types of structures. However, this group of proposal acknowledges that some greenhouses are being used for other enterprises, such as retail business, research by schools and universities, conservation, education, display by botanical institutions holding documented collections of specialty plants, and similar activities. Such greenhouses may be assigned a Use Group such as A, B, E, F or M.

Commercial scale plant production facilities may be classified as Use Group F1 or F2, depending on the crop and growing conditions.

This proposal, along with other proposals that modify the occupancies to include greenhouses, have created identifiers to assist the designer and the code official to recognize when appropriate design distinctions should be made, and to help determine more consistently when a greenhouse should be classified as a use group other than Group U.

This proposal and subsequent public comment is part of a bigger cache of proposals intended to distinguish the various uses of greenhouses above and beyond the protection, cultivation and maintenance of plants:

G13

G27

G29

G30  
G31  
G48

This proposal ONLY addresses greenhouses, and NOT other sunny spaces such as sunrooms, solariums, glass enclosed walkways, atria or other types of interior spaces that permit ample sunlight so as to prominently feature plants for aesthetic purposes.

Cost Impact: Will not increase the cost of construction.

There is no cost impact related to this proposal because this proposal mainly clarifies existing code language regarding Group U greenhouses. The proposal does not add requirements for Group B, E, or M greenhouses beyond what the code already requires for those occupancies.

## *Public Comment 2:*

**Proponent : Vickie Lovell, InterCode Incorporated, representing National Greenhouse Manufacturers Association (vickie@intercodeinc.com) requests Approve as Modified by this Public Comment.**

**Further Modify as Follows:**

### **2015 International Building Code**

**312.1 General.** Buildings and structures of an accessory character and miscellaneous structures not classified in any specific occupancy shall be constructed, equipped and maintained to conform to the requirements of this code commensurate with the fire and life hazard incidental to their occupancy. Group U shall include, but not be limited to, the following:

Agricultural buildings

Aircraft hangars, accessory to a one or two-family residence (see Section 412.5)

Barns

Carports

Fences more than 6 feet (1829 mm) in height

Grain silos, accessory to a residential occupancy

Greenhouses not classified as Group A, B, E, F or M

Livestock shelters

Private garages

Retaining walls

Sheds

Stables

Tanks

Towers

~~**312.1.1 Greenhouses.** Greenhouses not classified as Group A, B, Group E, F or Group M shall be classified as Use Group U.~~

**Commenter's Reason:** The committee members were generally favorable to the concept of assigning occupancy classifications to greenhouses when appropriate. However, they raised a practical problem relating to Use Groups F1 and F2 for commercial greenhouses. This public comment cleans up the new language that was approved by the Committee, plus it captures the Use Group F correctly depending on the crop and growing conditions, the size and scope of the greenhouse

and other considerations based on the height and area table.

The majority of greenhouses are truly agricultural structures and are classified as Group U because the primary purpose of a greenhouse is for the propagation of plants. The code should retain Group U being the default occupancy Use Group for these types of structures. However, this group of proposal acknowledges that some greenhouses are being used for other enterprises, such as retail business, research by schools and universities, conservation, education, display by botanical institutions holding documented collections of specialty plants, and similar activities. Such greenhouses may be assigned a Use Group such as A, B, E, F or M. Commercial scale plant production facilities may be classified as Use Group F1 or F2, depending on the crop and growing conditions.

This proposal, along with other proposals that modify the occupancies to include greenhouses, have created identifiers to assist the designer and the code official to recognize when appropriate design distinctions should be made, and to help determine more consistently when a greenhouse should be classified as a use group other than Group U.

This proposal and subsequent public comment is part of a bigger cache of proposals intended to distinguish the various uses of greenhouses above and beyond the protection, cultivation and maintenance of plants:

G13  
G27  
G29  
G30  
G31  
G48

This proposal ONLY addresses greenhouses, and NOT other sunny spaces such as sunrooms, solariums, glass enclosed walkways, atria or other types of interior spaces that permit ample sunlight so as to prominently feature plants for aesthetic purposes.

Cost Impact: Will not increase the cost of construction.

There is no cost impact related to this proposal because this proposal mainly clarifies existing code language regarding Group U greenhouses. The proposal does not add requirements for Group B, E, or M greenhouses beyond what the code already requires for those occupancies.

### *Public Comment 3:*

**Proponent : Kathleen Petrie, representing City of Seattle, Department of Planning and Development (kathleen.petrie@seattle.gov) requests Approve as Modified by this Public Comment.**

**Further Modify as Follows:**

## **2015 International Building Code**

**312.1.1 Greenhouses.** Greenhouses not classified as ~~Group A-3, B, Group E, F-1 or Group M~~ another occupancy shall be classified as Use Group U.

**Commenter's Reason:** Code proposals G29, G30, and G31 were disapproved by the committee, so the B, E, and F occupancies listed in G48 would not be applicable if the committee action is upheld. Occupancy groups may also change with future code cycles so it is best to keep the language of new Section 302.1.1 more general. Therefore, using the term "another occupancy" can apply to any occupancy a

greenhouse may be categorized under.

**G48-15**

---

# G49-15

402, 402.1, 402.3, 402.4, [F] 402.5, 402.6, [F] 402.7, 402.8, 507.13

## Proposed Change as Submitted

**Proponent :** David Collins, representing The American Institute of Architects (dcollins@preview-group.com)

### 2015 International Building Code

Delete and substitute as follows:

#### ~~SECTION 402- COVERED MALL AND OPEN MALL BUILDINGS~~

Delete without substitution:

~~**402.1 Applicability.** The provisions of this section shall apply to buildings or structures defined herein as *covered or open mall buildings* not exceeding three floor levels at any point nor more than three *stories above grade plane*. Except as specifically required by this section, *covered and open mall buildings* shall meet applicable provisions of this code.~~

~~**Exceptions:**~~

- ~~1. Foyers and lobbies of Groups B, R-1 and R-2 are not required to comply with this section.~~
- ~~2. Buildings need not comply with the provisions of this section where they totally comply with other applicable provisions of this code.~~

Revise as follows:

#### **507.13 Covered and open mall buildings and anchor buildings.**

The area of *covered and open mall buildings* and *anchor buildings* not exceeding three *stories* in height ~~that~~ above grade plane.

**Exceptions:**

1. Foyers and lobbies of Groups B, R-1 and R-2 are not required to comply with Section 402 shall this section.
2. Buildings need not be limited. comply with the provisions of this section where they totally comply with other applicable provisions of this code.

#### ~~402.2~~ **507.13.1 Definitions.**

*(The text of this section and subsequent sections would be unchanged except to update section references.)*

#### ~~402.1.1~~ **507.13.2 Open space.** .

#### ~~402.1.2~~ **507.13.3 Open mall building perimeter line.** .

#### ~~402.3~~ **507.13.4 Lease plan.** .

**402.4 507.13.5 Construction.**

**402.4.1 507.13.5.1 Area and types of construction. .**

**402.4.1.1 507.13.5.1.1 Covered and open mall buildings.**

**402.4.1.2 507.13.5.1.2 Anchor buildings.**

**402.4.1.3 507.13.5.1.3 Parking garage. .**

**402.4.2 507.13.5.2 Fire-resistance-rated separation.**

**402.4.2.1 507.13.5.2.1 Tenant separations.**

**402.4.2.2 507.13.5.2.2 Anchor building separation.**

**402.4.2.2.1 507.13.5.2.1 Openings between anchor building and mall.**

**402.4.2.3 507.13.5.2.3 Parking garages.**

**402.4.3 507.13.5.3 Open mall construction.**

**402.4.3.1 507.13.5.3.1 Pedestrian walkways.**

**[F] 402.5 507.13.6 Automatic sprinkler system.**

**402.6 507.13.7 Interior finishes and features. .**

**402.6.1 507.13.7.1 Interior finish.**

**402.6.2 507.13.7.2 Kiosks.**

**402.6.3 507.13.7.3 Children's play structures.**

**402.6.4 507.13.7.4 Plastic signs.**

**402.6.4.1 507.13.7.4.1 Area.**

**402.6.4.2 507.13.7.4.2 Height and width.**

**402.6.4.3 507.13.7.4.3 Location. .**

**402.6.4.4 507.13.7.4.4 Plastics other than foam plastics.**

**402.6.4.4.1 507.13.7.4.4.1 Encasement. .**

**402.6.4.5 507.13.7.4.5 Foam plastics.**

**402.6.4.5.1 507.13.7.4.5.1 Density.**

**402.6.4.5.2 507.13.7.4.5.2 Thickness.**

**[F] 402.7 507.13.8 Emergency systems.**

**[F] 402.7.1 507.13.8.1 Standpipe system.**

**[F] 402.7.2 507.13.8.2 Smoke control.**

**[F] 402.7.3 507.13.8.3 Emergency power.**

**[F] 402.7.4 507.13.8.4 Emergency voice/alarm communication system.**

**[F] ~~402.7.5~~ 507.13.8.5 Fire department access to equipment.**

**~~402.8~~ 507.13.9 Means of egress.**

**~~402.8.1~~ 507.13.9.1 Mall width.**

**~~402.8.1.1~~ 507.13.9.1.1 Minimum width.**

**~~402.8.2~~ 507.13.9.2 Determination of occupant load.**

**~~402.8.2.1~~ 507.13.9.2.1 Occupant formula.**

**~~402.8.2.2~~ 507.13.9.2.2 OLF range.**

**~~402.8.2.3~~ 507.13.9.2.3 Anchor buildings.**

**~~402.8.2.4~~ 507.13.9.2.4 Food courts.**

**~~402.8.3~~ 507.13.9.3 Number of means of egress.**

**~~402.8.4~~ 507.13.9.4 Arrangements of means of egress.**

**~~402.8.4.1~~ 507.13.9.4.1 Anchor building means of egress.**

**~~402.8.5~~ 507.13.9.5 Distance to exits.**

**~~402.8.6~~ 507.13.9.6 Access to exits.**

**~~402.8.6.1~~ 507.13.9.6.1 Exit passageways.**

**~~402.8.7~~ 507.13.9.7 Service areas fronting on exit passageways.**

**~~402.8.8~~ 507.13.9.8 Security grilles and doors.**

**Reason:** Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features.

Malls are probably one of the more interesting special use and occupancy provisions, particularly since the open mall provisions were included. While there are several very specific criteria associated with a mall (the occupant load calculation, anchor buildings, etc.), fundamentally they are exceptions to the area limits of buildings. Having these provisions hidden in Chapter 4 clouds the choices users of the code have when designing large developments. One-story and two-story unlimited area buildings are included in the exceptions for the area limits of buildings, however malls, having many of the same limitations are permitted to be three stories in height and to have almost any occupancy. When examining choices for how to configure such a development should be rather simple by looking at the list within the section on area limitations.

By moving the provisions in Chapter 4 for mall buildings into the area limits in Chapter 5, the triggers and allowances for malls will be clear and obvious choices. Correlation of references to new code locations are not included in the proposal but need to be provided by the editorial staff.

**Cost Impact:** Will not increase the cost of construction

There are no technical changes in the sections of the code and there should be no cost impact related to what is currently required as compared with what is proposed. In reality it may reduce the cost of construction as the option to use the allowances for malls as an unlimited area building will become more obvious.

G49-15 : 402-  
COLLINS4639

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** This is one of a series of proposals (G49-15 through G75-15) which would systematically relocate all provisions of Chapter 4 of the IBC to another location in the code. The proponent of these changes would locate current Chapter 4 provisions with other code requirements that they are a logical extension. A primary argument by the proponent for the relocation Chapter 4 provisions is to make these various provisions more easily found during the design process. He believes that their location in Chapter 4 results in them being either overlooked or found late in the design process and requiring substantial modifications to a design. The committee in disapproving the series of changes concluded that Chapter 4 provides a convenient location for specialized use and design provisions. It allows designers to start in one location to find unique requirements of a use or building feature before proceeding through the rest of the code to determine allowed height, area, construction types, and fire protection requirements found in those specific topic chapters. Contrary to the reason provided by the proponent, the committee felt that Chapter 4 isn't an afterthought in the design process, but is a convenient first stop for specialized requirements. Moving all the provisions of Chapter 4 to other chapters would make other chapters more confusing by adding one or more specialized sets of requirements in the midst of chapters that are relatively straight forward in addressing their topics. There was concern that unique and key provisions found in Chapter 4 could be lost and overlooked if moved to other code locations.

Although none of the series of proposals was approved, some individual proposals found more support than others. While the committee did not support complete elimination of Chapter 4, a case for relocating some provisions was made by a larger minority of the committee. This proposal addressing mall buildings. There was some support for completely distributing egress provisions to chapter 10, sprinklers to Chapter 9, etc. But the proposal series would put topic specific provisions in other parts of the code - for example by moving malls to chapter 5, you move egress and sprinkler requirements to Chapter 5.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### ***Public Comment 1:***

**Proponent : David Collins, representing The American Institute of Architects (dcollins@preview-group.com) requests Approve as Modified by this Public Comment.**

**Replace Proposal as Follows:**

### **2015 International Building Code**

**507.13 Covered and open mall buildings and anchor buildings.**  
~~The area of Ccovered overed and open mall buildings and anchor buildings~~ not exceeding three stories in height above grade plane shall be in accordance with Section 402.

**Exceptions:**

1. Foyers and lobbies of Groups B, R-1 and R-2 are not required to comply with this section.
2. Buildings need not comply with the provisions of this section where they totally comply with other applicable provisions of this code.

**Commenter's Reason:** Covered mall buildings and anchor buildings are an option for unlimited area buildings in Chapter 5, Section 507.13, but no reference is made to the technical requirements of Section 402. This modification to the original proposal will make it clear to code users that the requirements of Section 402 are applicable in order to conform to the unlimited area buildings allowance.

---

**G49-15**

# G50-15

403, 403.1, 403.2, [F] 403.3, [F] 403.4, [F] 403.4.5, [F] 403.4.6, 403.4.7, [F] 403.4.8, 403.5, 403.6

## Proposed Change as Submitted

**Proponent :** David Collins (dcollins@preview-group.com)

### 2015 International Building Code

Delete without substitution:

#### ~~SECTION 403- HIGH-RISE BUILDINGS~~

Revise as follows:

~~403.1~~ 504.3.1 **Applicability.** *High-rise buildings* shall comply with Sections ~~403.2~~ 504.3.2 through ~~403.6~~ 504.3.6.

**Exception:** The provisions of Sections ~~403.2~~ 504.3.2 through ~~403.6~~ 504.3.6 shall not apply to the following buildings and structures:

1. Airport traffic control towers in accordance with Section 412.3.
2. *Open parking garages* in accordance with Section 406.5.
3. The portion of a building containing a Group A-5 occupancy in accordance with Section 303.6.
4. Special industrial occupancies in accordance with Section 503.1.1.
5. Buildings with:
  - 5.1. A Group H-1 occupancy;
  - 5.2. A Group H-2 occupancy in accordance with Section 415.8, 415.9.2, 415.9.3 or 426.1; or,
  - 5.3. A Group H-3 occupancy in accordance with Section 415.8.

#### ~~403.2~~ 504.3.2 **Construction.**

*(The text of this section and subsequent sections would be unchanged except to update section references.)*

#### ~~403.2.1~~ 504.3.2.1 **Reduction in fire-resistance rating.**

#### ~~403.2.1.1~~ 504.3.2.1.1 **Type of construction.**

#### ~~403.2.1.2~~ 504.3.2.1.2 **Shaft enclosures.**

#### ~~403.2.2~~ 504.3.2.2 **Seismic considerations.**

#### ~~403.2.3~~ 504.3.2.3 **Structural integrity of interior exit stairways and elevator hoistway enclosures.**

#### ~~403.2.3.1~~ 504.3.2.3.1 **Wall assembly.**

#### ~~403.2.3.2~~ 504.3.2.3.2 **Wall assembly materials.**

#### ~~403.2.3.3~~ 504.3.2.3.3 **Concrete and masonry walls.**

**~~403.2.3.4~~ 504.3.2.3.4 Other wall assemblies.**

**TABLE ~~403.2.4~~ 504.3.2.4  
MINIMUM BOND STRENGTH**

**~~403.2.4~~ 504.3.2.4 Sprayed fire-resistant materials (SFRM).**

**[F] ~~403.3~~ 504.3.3 Automatic sprinkler system.**

**[F] ~~403.3.1~~ 504.3.3.1 Number of sprinkler risers and system design.**

**[F] ~~403.3.1.1~~ 504.3.3.1.1 Riser location.**

**[F] ~~403.3.2~~ 504.3.3.2 Water supply to required fire pumps.**

**[F] ~~403.3.3~~ 504.3.3.3 Secondary water supply.**

**[F] ~~403.3.4~~ 504.3.3.4 Fire pump room.**

**[F] ~~403.4~~ 504.3.4 Emergency systems.**

**[F] ~~403.4.1~~ 504.3.4.1 Smoke detection.**

**[F] ~~403.4.2~~ 504.3.4.2 Fire alarm system.**

**[F] ~~403.4.3~~ 504.3.4.3 Standpipe system.**

**[F] ~~403.4.4~~ 504.3.4.4 Emergency voice/alarm communication system.**

**[F] ~~403.4.5~~ 504.3.4.5 Emergency responder radio coverage.**

**[F] ~~403.4.6~~ 504.3.4.6 Fire command.**

**~~403.4.7~~ 504.3.4.7 Smoke removal.**

**[F] ~~403.4.8~~ 504.3.4.8 Standby and emergency power.**

**[F] ~~403.4.8.1~~ 504.3.4.8.1 Equipment room.**

**[F] ~~403.4.8.2~~ 504.3.4.8.2 Fuel line piping protection.**

**[F] ~~403.4.8.3~~ 504.3.4.8.3 Standby power loads.**

**[F] ~~403.4.8.4~~ 504.3.4.8.4 Emergency power loads.**

**~~403.5~~ 504.3.5 Means of egress and evacuation.**

**~~403.5.1~~ 504.3.5.1 Remoteness of interior exit stairways.**

**~~403.5.2~~ 504.3.5.2 Additional interior exit stairway.**

**~~403.5.3~~ 504.3.5.3 Stairway door operation.**

**~~403.5.3.1~~ 504.3.5.3.1 Stairway communication system.**

**~~403.5.4~~ 504.3.5.4 Smokeproof enclosures.**

**~~403.5.5~~ 504.3.5.5 Luminous egress path markings.**

**~~403.5.6~~ 504.3.5.6 Emergency escape and rescue.**

## **403.6 504.3.6 Elevators.**

### **403.6.1 504.3.6.1 Fire service access elevator.**

### **403.6.2 504.3.6.2 Occupant evacuation elevators.**

**Reason:** Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features.

High-rise buildings is a good example of the issues with the use of the IBC and tall buildings. Section 504 very specifically limits the height of buildings but references the criteria in Section 510 for some exceptions. Nowhere in that section is high-rise buildings mentioned. Is the designer supposed to know that Chapter 4 contains provisions that simply because of the buildings proportions these additional allowances and criteria must be met? Does the code official understand when the thresholds for the specific requirements in Chapter 4 are meant to apply to buildings that Table 503 would allow to be built in excess of the 75 foot, 120 foot and 420 foot limits? Nothing in the code provides that clarity.

By moving the provisions in Chapter 4 for high-rise buildings into the height limits in Chapter 5, the triggers and requirements for high-rise will be clear and obvious. Correlation of references to new code locations are not included in the proposal but need to be provided by the editorial staff.

**Cost Impact:** Will not increase the cost of construction

This change simply reorganizes the code to make it clearer for code users to understand how the code is intended to apply. There is no cost impact for this change.

**G50-15 : 403-  
COLLINS4649**

---

## **Public Hearing Results**

### **Committee Action:**

**Disapproved**

**Committee Reason:** This is one of a series of proposals (G49-15 through G75-15) which would systematically relocate all provisions of Chapter 4 of the IBC to another location in the code. The proponent of these changes would locate current Chapter 4 provisions with other code requirements that they are a logical extension. A primary argument by the proponent for the relocation Chapter 4 provisions is to make these various provisions more easily found during the design process. He believes that their location in Chapter 4 results in them being either overlooked or found late in the design process and requiring substantial modifications to a design. The committee in disapproving the series of changes concluded that Chapter 4 provides a convenient location for specialized use and design provisions. It allows designers to start in one location to find unique requirements of a use or building feature before proceeding through the rest of the code to determine allowed height, area, construction types, and fire protection requirements found in those specific topic chapters. Contrary to the reason provided by the proponent, the committee felt that Chapter 4 isn't an afterthought in the design process, but is a convenient first stop for specialized requirements. Moving all the provisions of Chapter 4 to other chapters would make other chapters more confusing by adding one or more specialized sets of requirements in the midst of chapters that are relatively straight forward in addressing their topics. There was concern that unique and key provisions found in

Chapter 4 could be lost and overlooked if moved to other code locations.

Although none of the series of proposals was approved, some individual proposals found more support than others. While the committee did not support complete elimination of Chapter 4, a case for relocating some provisions was made by a minority of the committee. This proposal addresses high-rise buildings. The committee felt that these buildings do provide unique needs and requirements and the regulations should remain as a package in Chapter 4.

**Assembly Action :**

**None**

---

**Individual Consideration Agenda**

***Public Comment 1:***

**Proponent : David Collins, representing The American Institute of Architects (dcollins@preview-group.com) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

**2015 International Building Code**

**504.1 General.** The height, in feet, and the number of stories of a building shall be determined based on the type of construction, occupancy classification and whether there is an *automatic sprinkler system* installed throughout the building.

**Exception Exceptions:**

1. The *building height* of one-story aircraft hangars, aircraft paint hangars and buildings used for the manufacturing of aircraft shall not be limited where the building is provided with an *automatic sprinkler system* or *automatic fire-extinguishing system* in accordance with Chapter 9 and is entirely surrounded by *public ways* or *yards* not less in width than one and one-half times the *building height*.

2. High-rise buildings shall comply with Sections 403.2 through 403.6.

**Commenter's Reason:** There is nothing in Chapter 5 that references the requirements in Chapter 4 for high rise buildings. Originally we had proposed to move the requirements for high rise into Chapter 5, but the Code Change Committee rejected that indicating that the special requirements belong in Chapter 4. This change will introduce an exception for the height requirements for buildings and reference the provisions in Section 403 for high-rise buildings.

---

**G50-15**

# G51-15

404, 404.1, 404.1.1, 712.1.7, 404.2, [F] 404.3, [F] 404.4, 404.5, 404.6, [F] 404.7, 404.8, 404.9, 404.9.1, 404.9.2, 404.9.3

## **Proposed Change as Submitted**

**Proponent :** David Collins, representing The American Institute of Architects (dcollins@preview-group.com)

### **2015 International Building Code**

**Delete without substitution:**

#### **~~SECTION 404-~~ ~~ATRIUMS~~**

~~**404.1 General.** In other than Group H occupancies, and where permitted by Section 712.1.7, the provisions of Sections 404.1 through 404.10 shall apply to buildings or structures containing vertical openings defined as "Atriums."~~

~~**404.1.1 Definition.** The following term is defined in Chapter 2:~~

**Revise as follows:**

**712.1.7 Atriums.** In other than Group H occupancies, atriums floor openings connecting three or more stories and complying with Section 404 ~~this section~~ shall be permitted.

**Exception:** As used in this section, balconies within assembly groups or mezzanines that comply with Section 505 are not considered stories.

**404.2 712.1.7.1 Use.**

*(The text of this section and subsequent sections would be unchanged except to update section references.)*

**[F] 404.3 712.1.7.2 Automatic sprinkler protection.**

**[F] 404.4 712.1.7.3 Fire alarm system.**

**404.5 712.1.7.4 Smoke control.**

**404.6 712.1.7.5 Enclosure of atriums.**

**[F] 404.7 712.1.7.6 Standby power.**

**404.8 712.1.7.7 Interior finish.**

**404.9 712.1.7.8 Exit access travel distance.**

**404.9.1 712.1.7.8.1 Egress not through the atrium.**

**404.9.2 712.1.7.8.2 Exit access travel distance at the level of exit discharge.**

**404.9.3 712.1.7.8.3 Exit access travel distance at other than the level of exit discharge.**

**404.10 712.1.7.9 Interior exit stairways.**

**Reason:** Reason: Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features.

The provisions for Atriums in Chapter 4 are a classic case of the confusion caused by the code. As defined an atrium includes virtually any opening between two or more floors. However, in the code there are a myriad of options for openings through two or more floors and indeed, an atrium is simply only one option for creation of openings and providing the necessary protection because of that opening as listed in section 712.1. However, because it is listed in Chapter 4 without any direction that limits its application to a choice by the designer, it is often cited as being necessary, when in fact it is not because another option has been chosen. Similarly, because of the definition other floor openings are not being permitted, which is why the definition is being deleted and the charging language in the Section 712.1 for atriums includes the appropriate limitations from the definition.

By moving the provisions for atrium design to Chapter 7 and referencing the determination of when it is to be applied, the code users will much more readily understand the intent of the code.

**Cost Impact:** Will not increase the cost of construction

As a needed clarification of the code, this will actually reduce the cost of construction where the unnecessary application of this section will allow for less onerous solutions the code allows.

G51-15 : [F] 404.3-  
COLLINS4655

---

**Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** This is one of a series of proposals (G49-15 through G75-15) which would systematically relocate all provisions of Chapter 4 of the IBC to another location in the code. The proponent of these changes would locate current Chapter 4 provisions with other code requirements that they are a logical extension. A primary argument by the proponent for the relocation Chapter 4 provisions is to make these various provisions more easily found during the design process. He believes that their location in Chapter 4 results in them being either overlooked or found late in the process and requiring substantial modifications to a design. The committee in disapproving the series of changes concluded that Chapter 4 provides a convenient location for specialized use and design provisions. It allows designers to start in one location to find unique requirements a use or building feature before proceeding throught the rest of the code to determine allowed height, area, construcion types, and fire protection requirments found in those specific topic chapters. Contrary to the reason provided by the proponent, the committee felt that Chapter 4 isn't an afterthought in the design process, but is a convenient first stop for specilized requirements. Moving all the provisions of Chapter 4 to other chapters would make other chapters more confusing by adding one or specialized

set of requirements in the midst of chapters that are relatively straight forward in addressing their topics. There was concern that unique and key provisions found in Chapter 4 could be lost and overlooked if moved to other code locations.

Although none of the series of proposals was approved, some individual proposals found more support than others. While the committee did not support complete elimination of Chapter 4, a case for relocating some provisions was made by a larger minority of the committee. This proposal was addressing atriums, the proposed location is Chapter 7. Section 712 provides various options for addressing how openings in horizontal assemblies should be addressed. While there was support for relocating the atrium provisions, the committee expressed concern that improvements to text of the provisions needs to be done. There was a call to improve the definition of atrium. The committee raised the distinction of atriums that are an occupied space where the other methods for addressing openings in horizontal assemblies do not focus on the space as an occupied portion of the building.

<b>Assembly Motion:</b>	<b>As Submitted</b>
<b>Online Vote Results:</b>	<b>Failed</b>
Support: 13.18% (46) Oppose: 86.82% (303)	
<b>Assembly Action :</b>	<b>None</b>

---

### **Individual Consideration Agenda**

#### *Public Comment 1:*

**Proponent : David Collins, The Preview Group, Inc., representing The American Institute of Architects (dcollins@preview-group.com) requests Approve as Modified by this Public Comment.**

**Replace Proposal as Follows:**

#### **2015 International Building Code**

**404.1.1 Definition.** The following term is defined in Chapter 2:

ATRIUM. An opening connecting three or more stories other than enclosed stairways, elevators, hoistways, escalators, plumbing, electrical, air-conditioning or other equipment, which is closed at the top and not defined as a mall. Stories, as used in this definition, do not include balconies within assembly groups or mezzanines that comply with Section 505.

**712.1.7 Atriums.** In other than Group H occupancies, atriums connecting three or more floors, complying with Section 404 shall be permitted.

**Commenter's Reason:** Users of the code are often confused by the duplication and overlap of the definition of an atrium and a floor opening. Both are permitted by Section 712.1, and the only requirements additional requirements for an atrium are when it connects three or more floors. With this change to the definition, it will be clear that the provisions of 404.1 for Atriums only apply when it connects three levels.

---

G51-15

# G52-15

**405, 504.4, 405.1, 405.2, [F] 405.3, 405.4, 405.4.1, 405.4.2, 405.4.3, 405.5, 405.5.1, 405.5.2, [F] 405.6, 405.7, 405.7.1, 405.7.2, [F] 405.8, [F] 405.8.1, [F] 405.8.2, [F] 405.9**

## **Proposed Change as Submitted**

**Proponent :** David Collins, representing The American Institute of Architects (dcollins@preview-group.com)

## **2015 International Building Code**

**Delete without substitution:**

### **~~SECTION 405- UNDERGROUND BUILDINGS~~**

**Revise as follows:**

**504.4 Number of stories above grade plane.** The maximum number of stories of a building shall not exceed the limits specified in Table 504.4.

**~~405.1~~ 504.5 General Floors below the level of exit discharge.** The provisions of Sections ~~405.2~~ 504.5.1 through ~~405.9~~ 504.5.8 apply to building spaces having a floor level used for human occupancy more than 30 feet (9144 mm) below the finished floor of the lowest *level of exit discharge*.

**Exceptions:** The provisions of Section ~~405~~ 504.5 are not applicable to the following buildings or portions of buildings:

1. One- and two-family *dwellings*, sprinklered in accordance with Section 903.3.1.3.
2. Parking garages provided with *automatic sprinkler systems* in compliance with Section 405.3.
3. Fixed guideway transit systems.
4. *Grandstands, bleachers*, stadiums, arenas and similar facilities.
5. Where the lowest *story* is the only *story* that would qualify the building as an underground building and has an area not greater than 1,500 square feet (139 m<sup>2</sup>) and has an *occupant load* less than 10.
6. Pumping stations and other similar mechanical spaces intended only for limited periodic use by service or maintenance personnel.

**~~405.2~~ 504.5.1 Construction requirements.**

*(The text of this section and subsequent sections would be unchanged except to update section references.)*

**[F] ~~405.3~~ 504.5.2 Automatic sprinkler system.**

**~~405.4~~ 504.5.3 Compartmentation.**

**~~405.4.1~~ 504.5.3.1 Number of compartments.**

**~~405.4.2~~ 504.5.3.2 Smoke barrier penetration.**

**~~405.4.3~~ 504.5.3.3 Elevators.**

**~~405.5~~ 504.5.4 Smoke control system.**

**~~405.5.1~~ 504.5.4.1 Control system.**

**~~405.5.2~~ 504.5.4.2 Compartment smoke control system.**

**[F] ~~405.6~~ 504.5.5 Fire alarm systems.**

**~~405.7~~ 504.5.6 Means of egress.**

**~~405.7.1~~ 504.5.6.1 Number of exits.**

**~~405.7.2~~ 504.5.6.2 Smokeproof enclosure.**

**[F] ~~405.8~~ 504.5.7 Standby and emergency power.**

**[F] ~~405.8.1~~ 504.5.7.1 Standby power loads.**

**[F] ~~405.8.2~~ 504.5.7.2 Emergency power loads.**

**[F] ~~405.9~~ 504.5.8 Standpipe system.**

**Reason:** Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features.

All criteria for the height of buildings is found in Chapter 5 of the IBC. Requirements associated with portions below grade and the distinction between basements and "underground buildings" is located in Chapter 4. These concepts and principles in the code for parts of buildings are not distinct, but are tied directly to the design and planning for the arrangement of facilities and their support areas which are often found in spaces which meet the underground portions of a building. Isolating these criteria from the typical height limitations does not help the code user understand the ramifications of decisions being made often very early in the design process.

By moving the provisions in Chapter 4 for underground buildings into the height limits in Chapter 5, the triggers and requirements for underground buildings will be clear and obvious. Correlation of references to new code locations are not included in the proposal but need to be provided by the editorial staff.

**Cost Impact:** Will not increase the cost of construction

This code change simply clarifies and connects portions of the code addressing the same subject and will not increase the cost of construction.

G52-15 : 405-  
COLLINS4797

---

**Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** This is one of a series of proposals (G49-15 through G75-15) which would systematically relocate all provisions of Chapter 4 of the IBC to another

location in the code. The proponent of these changes would locate current Chapter 4 provisions with other code requirements that they are a logical extension. A primary argument by the proponent for the relocation Chapter 4 provisions is to make these various provisions more easily found during the design process. He believes that their location in Chapter 4 results in them being either overlooked or found late in the design process and requiring substantial modifications to a design. The committee in disapproving the series of changes concluded that Chapter 4 provides a convenient location for specialized use and design provisions. It allows designers to start in one location to find unique requirements of a use or building feature before proceeding through the rest of the code to determine allowed height, area, construction types, and fire protection requirements found in those specific topic chapters. Contrary to the reason provided by the proponent, the committee felt that Chapter 4 isn't an afterthought in the design process, but is a convenient first stop for specialized requirements. Moving all the provisions of Chapter 4 to other chapters would make other chapters more confusing by adding one or more specialized sets of requirements in the midst of chapters that are relatively straight forward in addressing their topics. There was concern that unique and key provisions found in Chapter 4 could be lost and overlooked if moved to other code locations.

Although none of the series of proposals was approved, some individual proposals found more support than others. While the committee did not support complete elimination of Chapter 4, a case for relocating some provisions was made by a larger minority of the committee. This proposal addresses underground buildings.

**Assembly Action :**

**None**

---

### **Individual Consideration Agenda**

#### ***Public Comment 1:***

**Proponent : David Collins, representing The American Institute of Architects (dcollins@preview-group.com) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

#### **2015 International Building Code**

**504.5 Floors below the level of exit discharge.** The provisions of Sections ~~504.5.1 through 504.5.8~~ Section 405 shall apply to building spaces having a floor level used for human occupancy more than 30 feet (9144 mm) below the finished floor of the lowest *level of exit discharge*.

**Exceptions:** The provisions of Section 504.5 are not applicable to the following buildings or portions of buildings:

1. One- and two-family *dwellings*, sprinklered in accordance with Section 903.3.1.3.
2. Parking garages provided with *automatic sprinkler systems* in compliance with Section 405.3.
3. Fixed guideway transit systems.
4. *Grandstands, bleachers*, stadiums, arenas and similar facilities.
5. Where the lowest *story* is the only *story* that would qualify the building as an underground building and has an area not greater than 1,500 square feet (139 m<sup>2</sup>) and has an *occupant load* less than 10.
6. Pumping stations and other similar mechanical spaces intended only for limited periodic use by service or

maintenance personnel.

**Commenter's Reason:** The original proposal was to move the provisions in Section 403 into a new Section 504.5 where the requirements for underground buildings could be found as part of the height and area requirements. The Code Change Committee rejected that concept and indicated that they preferred to have these special provisions in Chapter 4. As there are no references in Chapter 5 to these provisions, this modification will add a direct reference to these provisions and eliminate any confusion as to how to treat stories below grade.

---

**G52-15**

# G53-15

406, 406.1, 406.2, 406.3, 406.3.1, 406.3.2, 406.3.3, 406.3.4, 406.3.4.1, 406.3.4.2, 406.3.4.3, 406.3.5, 406.3.5.1, 406.3.6

## Proposed Change as Submitted

**Proponent :** David Collins, representing The American Institute of Architects (dcollins@preview-group.com)

## 2015 International Building Code

Delete without substitution:

### ~~SECTION 406- MOTOR-VEHICLE-RELATED OCCUPANCIES~~

~~**406.1 General.** Motor vehicle-related occupancies shall comply with Sections 406.1 through 406.8.~~

~~**406.2 Definitions.** The following terms are defined in Chapter 2:  
**MECHANICAL-ACCESS OPEN PARKING GARAGES.**  
**OPEN PARKING GARAGE.**  
**PRIVATE GARAGE.**  
**RAMP-ACCESS OPEN PARKING GARAGES.**~~

Revise as follows:

~~**406.3**~~ **312.2** Private garages and carports.

*(The text of this section and subsequent sections would be unchanged except to update section references.)*

~~**406.3.1**~~ **312.2.1** Classification.

~~**406.3.2**~~ **312.2.2** Clear height.

~~**406.3.3**~~ **312.2.3** Garage floor surfaces.

~~**406.3.4**~~ **312.2.4** Separation.

~~**406.3.4.1**~~ **312.2.4.1** Dwelling unit separation..

~~**406.3.4.2**~~ **312.2.4.2** Openings prohibited.

~~**406.3.4.3**~~ **312.2.4.3** Ducts.

~~**406.3.5**~~ **312.2.5** Carports.

~~**406.3.5.1**~~ **312.2.5.1** Carport separation.

~~**406.3.6**~~ **312.2.6** Automatic garage door openers.

**Reason:** Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the

mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features.

Requirements for motor vehicle related occupancies are located in Chapter 4 and all the limitations for where they are parts of other occupancies is found in Chapter 5, while the classification is found in Chapter 3 with limitations for when it is classified as a Group U, but no indication as to what the classification should be if it is larger than the U limitations. Moving the provisions from Chapter 4 to Chapter 3 and adding provisions for when it is not a Group U, users will more readily understand and use the code appropriately.

**Cost Impact:** Will not increase the cost of construction

Because the identical language is simply being moved to a new section and clarifying language indicating the intent of the section, no increase in cost should occur as a result of this change.

G53-15 : 406.3-  
COLLINS4806

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** This is one of a series of proposals (G49-15 through G75-15) which would systematically relocate all provisions of Chapter 4 of the IBC to another location in the code. The proponent of these changes would locate current Chapter 4 provisions with other code requirements that they are a logical extension. A primary argument by the proponent for the relocation Chapter 4 provisions is to make these various provisions more easily found during the design process. He believes that their location in Chapter 4 results in them being either overlooked or found late in the design process and requiring substantial modifications to a design. The committee in disapproving the series of changes concluded that Chapter 4 provides a convenient location for specialized use and design provisions. It allows designers to start in one location to find unique requirements of a use or building feature before proceeding through the rest of the code to determine allowed height, area, construction types, and fire protection requirements found in those specific topic chapters. Contrary to the reason provided by the proponent, the committee felt that Chapter 4 isn't an afterthought in the design process, but is a convenient first stop for specialized requirements. Moving all the provisions of Chapter 4 to other chapters would make other chapters more confusing by adding one or more specialized sets of requirements in the midst of chapters that are relatively straight forward in addressing their topics. There was concern that unique and key provisions found in Chapter 4 could be lost and overlooked if moved to other code locations.

Although none of the series of proposals was approved, some individual proposals found more support than others. While the committee did not support complete elimination of Chapter 4, a case for relocating some provisions was made by a larger minority of the committee. This proposal addresses private garages. There was support to move this to chapter 3 as it was occupancy specific.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

***Public Comment 1:***

**Proponent : David Collins, the Preview Group, representing The**

**American Institute of Architects ([\[email protected\]](#))**

)

**requests Approve as Submitted.**

**Commenter's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the "motor vehicle related" occupancy provisions that include requirements for height and area are not referenced in Chapter 5, and the only reference in the IBC is found in a footnote in Table 602. No requirements for separation in 406.3 are referenced in the code, no reference to carports in Section 406.3.5 can be found in the codes, etc.

While the Code Change Committee rejected this proposal, there was support for this change as it is occupancy specific and the requirements should relate closely to the scoping provisions in Chapter 3 for the occupancy in which these parking facilities are classified. We believe that much confusion and failure to understand how the code intends to be applied can be eliminated by placing these requirements into Section 312.

### *Public Comment 2:*

**Proponent : Steven Winkel, the Preview Group representing The American Institute of Architects ([swinkel@preview-group.com](mailto:swinkel@preview-group.com)) requests Approve as Modified by this Public Comment.**

**Replace Proposal as Follows:**

## **2015 International Building Code**

**312.2 Private garages and carports. Private garages and carports shall comply with Section 406.3.**

**Commenter's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the "motor vehicle related" occupancy provisions that include requirements for height and area are not referenced in Chapter 5, and the only reference in the IBC is found in a footnote in Table 602. No requirements for separation in 406.3 are referenced in the code, no reference to carports in Section 406.3.5 can be found in the codes, etc.

While the Code Change Committee rejected this proposal, there was support for this change as it is occupancy specific and the requirements should relate closely to the scoping provisions in Chapter 3 for the occupancy in which these parking facilities are classified. We believe that much confusion and failure to understand how the code intends to be applied can be eliminated by placing a reference to 406.3 in Section 312.

# **G54-15**

**406.4, 406.5, 406.6, 406.7, 406.8**

## **Proposed Change as Submitted**

**Proponent :** David Collins, representing The American Institute of Architects (dcollins@preview-group.com)

### **2015 International Building Code**

**Revise as follows:**

**~~406.7~~ 309.3 Motor fuel-dispensing facilities.**

*(The text of this section and subsequent sections would be unchanged except to update section references.)*

**~~406.7.1~~ 309.3.1 Vehicle fueling pad. .**

**~~406.7.2~~ 309.3.2 Canopies.**

**~~406.7.2.1~~ 309.3.2.1 Canopies used to support gaseous hydrogen systems.**

**~~406.8~~ 311.2.1 Repair garages.**

**~~406.8.1~~ 311.2.1.1 Mixed uses.**

**~~406.8.2~~ 311.2.1.2 Ventilation.**

**~~406.8.3~~ 311.2.1.3 Floor surface.**

**~~406.8.4~~ 311.2.1.4 Heating equipment.**

**[F] ~~406.8.5~~ 311.2.1.5 Gas detection system.**

**[F] ~~406.8.5.1~~ 311.2.1.5.1 System design.**

**[F] ~~406.8.5.1.1~~ 311.2.1.5.1.1 Gas detection system components.**

**[F] ~~406.8.5.2~~ 311.2.1.5.2 Operation.**

**[F] ~~406.8.5.3~~ 311.2.1.5.3 Failure of the gas detection system.**

**[F] ~~406.8.6~~ 311.2.1.6 Automatic sprinkler system.**

**~~406.4~~ 311.3.1 Public parking garages.**

**~~406.4.1~~ 311.3.1.1 Clear height.**

**~~406.4.2~~ 311.3.1.2 Guards.**

**~~406.4.3~~ 311.3.1.3 Vehicle barriers.**

**~~406.4.4~~ 311.3.1.4 Ramps.**

**~~406.4.5~~ 311.3.1.5 Floor surface.**

**~~406.4.6~~ 311.3.1.6 Mixed occupancy separation.**

**~~406.4.7~~ 311.3.1.7 Special hazards.**

**~~406.4.8~~ 311.3.1.8 Attached to rooms.**

**~~406.5~~ 311.3.2 Open parking garages.**

**~~406.5.1~~ 311.3.2.1 Construction.**

**~~406.5.2~~ 311.3.2.2 Openings.**

**~~406.5.2.1~~ 311.3.2.2.1 Openings below grade.**

**~~406.5.3~~ 311.3.2.3 Uses.**

**~~406.5.4~~ 311.3.2.4 Area and height.**

**TABLE ~~406.5.4~~ 311.3.2.4  
OPEN PARKING GARAGES AREA AND HEIGHT**

**~~406.5.4.1~~ 311.3.2.4.1 Single use.**

**~~406.5.5~~ 311.3.2.5 Area and height increases.**

**~~406.5.6~~ 311.3.2.6 Fire separation distance.**

**~~406.5.7~~ 311.3.2.7 Means of egress.**

**[F] ~~406.5.8~~ 311.3.2.8 Standpipe system.**

**~~406.5.9~~ 311.3.2.9 Enclosure of vertical openings.**

**~~406.5.10~~ 311.3.2.10 Ventilation.**

**~~406.5.11~~ 311.3.2.11 Prohibitions.**

**~~406.6~~ 311.3.3 Enclosed parking garages.**

**~~406.6.1~~ 311.3.3.1 Heights and areas.**

**~~406.6.2~~ 311.3.3.2 Ventilation.**

**[F] ~~406.6.3~~ 311.3.3.3 Automatic sprinkler system.**

**Reason:** Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features.

By moving the provisions in Chapter 4 for mall buildings into the area limits in Chapter 5, the triggers and allowances for malls will be clear and obvious choices. Correlation of references to new code locations are not included in the proposal but need to be provided by the editorial staff.

**Cost Impact:** Will not increase the cost of construction

---

## **Public Hearing Results**

### **Committee Action:**

**Disapproved**

**Committee Reason:** This is one of a series of proposals (G49-15 through G75-15) which would systematically relocate all provisions of Chapter 4 of the IBC to another location in the code. The proponent of these changes would locate current Chapter 4 provisions with other code requirements that they are a logical extension. A primary argument by the proponent for the relocation Chapter 4 provisions is to make these various provisions more easily found during the design process. He believes that their location in Chapter 4 results in them being either overlooked or found late in the design process and requiring substantial modifications to a design. The committee in disapproving the series of changes concluded that Chapter 4 provides a convenient location for specialized use and design provisions. It allows designers to start in one location to find unique requirements of a use or building feature before proceeding through the rest of the code to determine allowed height, area, construction types, and fire protection requirements found in those specific topic chapters. Contrary to the reason provided by the proponent, the committee felt that Chapter 4 isn't an afterthought in the design process, but is a convenient first stop for specialized requirements. Moving all the provisions of Chapter 4 to other chapters would make other chapters more confusing by adding one or more specialized sets of requirements in the midst of chapters that are relatively straight forward in addressing their topics. There was concern that unique and key provisions found in Chapter 4 could be lost and overlooked if moved to other code locations.

Although none of the series of proposals was approved, some individual proposals found more support than others. While the committee did not support complete elimination of Chapter 4, a case for relocating some provisions was made by a larger minority of the committee. This proposal addresses a variety of vehicle related uses there was support for relocation to Chapter 3.

### **Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### ***Public Comment 1:***

**Proponent : David Collins, representing The American Institute of Architects (dcollins@preview-group.com) requests Approve as Submitted.**

**Commenter's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the "motor fuel-dispensing facilities" occupancy provisions that include requirements for height and area are not referenced in Chapter 5, and the only reference in the IBC is found in a footnote in Table 602. No requirements for separation in 406.3 are referenced in the code, no reference to carports in Section 406.3.5 can be found in the codes, etc.

While the Code Change Committee rejected this proposal, there was support for this change as it is occupancy specific and the requirements should relate closely to the scoping provisions in Chapter 3 for the occupancy in which these vehicle fueling

facilities are classified. We believe that much confusion and failure to understand how the code intends to be applied can be eliminated by placing these requirements into Section 311.

## *Public Comment 2:*

**Proponent : Steven Winkel, the Preview Group representing The American Institute of Architects (swinkel@preview-group.com) requests Approve as Modified by this Public Comment.**

**Replace Proposal as Follows:**

### **2015 International Building Code**

**309.3 Motor fuel-dispensing facilities** Motor fuel-dispensing facilities shall comply with the International Fire Code and Sections 406.7.1 and 406.7.2.

**Commenter's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the "motor vehicle related" occupancy provisions that include requirements for height and area are not referenced in Chapter 5, and the only reference in the IBC is found in a footnote in Table 602. No requirements for compliance with the fire code, or the requirements for canopies in 406.7 are referenced in the code, etc.

While the Code Change Committee rejected this proposal, there was support for this change as it is occupancy specific and the requirements should relate closely to the scoping provisions in Chapter 3 for the occupancy in which these parking facilities are classified. We believe that much confusion and failure to understand how the code intends to be applied can be eliminated by placing a reference to 406 in Section 309.3.

---

G54-15

# G55-15

407, [F] 407.6, [F] 407.7, [F] 407.8, 308.3.4.3 (New),  
308.4.3.2 (New)

## Proposed Change as Submitted

**Proponent :** David Collins, representing The American Institute of Architects (dcollins@preview-group.com)

### 2015 International Building Code

Delete without substitution:

#### ~~SECTION 407 -GROUP I-2~~

Revise as follows:

#### ~~407.1~~ **308.4.3 General. Group I-2 occupancy**

**requirements** Occupancies in Group I-2 shall comply with the provisions of Sections ~~407.1~~ 308.4.3.1 through ~~407.10~~ 308.4.3.10 and other applicable provisions of this code.

#### ~~407.2~~ **308.4.3.1 Corridors continuity and separation.**

*(The text of this section and subsequent sections would be unchanged except to update section references.)*

#### ~~407.2.1~~ **308.4.3.1.1 Waiting and similar areas.**

#### ~~407.2.2~~ **308.4.3.1.2 Care providers' stations.**

#### ~~407.2.3~~ **308.4.3.1.3 Psychiatric treatment areas.**

#### ~~407.2.4~~ **308.4.3.1.4 Gift shops.**

#### ~~407.2.5~~ **308.4.3.1.5 Nursing home housing units.**

#### ~~407.2.6~~ **308.4.3.1.6 Nursing home cooking facilities.**

#### ~~407.3~~ **308.4.3.2 Corridor wall construction.**

#### ~~407.3.1~~ **308.4.3.2.1 Corridor doors.**

#### ~~407.4~~ **308.4.3.4 Means of egress.**

#### ~~407.4.1~~ **308.4.3.4.1 Direct access to a corridor.**

#### ~~407.4.1.1~~ **308.4.3.4.1.1 Locking devices.**

#### ~~407.4.2~~ **308.4.3.4.2 Distance of travel.**

#### ~~407.4.3~~ **308.4.3.4.3 Projections in nursing home corridors.**

#### ~~407.4.4~~ **308.4.3.4.4 Group I-2 care suites.**

#### ~~407.4.4.1~~ **308.4.3.4.4.1 Exit access through care suites.**

#### ~~407.4.4.2~~ **308.4.3.4.4.2 Separation.**

~~407.4.4.3~~ 308.4.3.4.4.3 Access to corridor.

~~407.4.4.4~~ 308.4.3.4.4.4 Doors within care suites.

~~407.4.4.5~~ 308.4.3.4.4.5 Care suites containing sleeping room areas.

~~407.4.4.5.1~~ 308.4.3.4.4.5.1 Area.

~~407.4.4.5.2~~ 308.4.3.4.4.5.2 Exit access.

~~407.4.4.6~~ 308.4.3.4.4.6 Care suites not containing sleeping rooms.

~~407.4.4.6.1~~ 308.4.3.4.4.6.1 Area.

~~407.4.4.6.2~~ 308.4.3.4.4.6.2 Exit access.

~~407.5~~ 308.4.3.5 Smoke barriers.

~~407.5.1~~ 308.4.3.5.1 Refuge area.

~~407.5.2~~ 308.4.3.5.2 Independent egress.

~~407.5.3~~ 308.4.3.5.3 Horizontal assemblies.

[F] ~~407.6~~ 308.4.3.6 Automatic sprinkler system.

[F] ~~407.7~~ 308.4.3.7 Fire alarm system.

[F] ~~407.8~~ 308.4.3.8 Automatic fire detection.

~~407.9~~ 308.4.3.9 Secured yards.

~~407.10~~ 308.4.3.10 Electrical systems.

**Reason:** Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features.

I-2 criteria in Chapter 4 are typical of the occupancy criteria that provide a summary of various provisions from the code for one occupancy. While an I-2 is somewhat special, many of these criteria are well recognized in the code for various occupancies. To make the application of these provisions obvious to the code user, their placement in Chapter 3 along with the classification information will provide greater clarity to their necessity by the code users.

**Cost Impact:** Will not increase the cost of construction

By making the special provisions for an I-2 occupancy obvious, the cost of construction should be reduced.

G55-15 : 407-  
COLLINS4807

---

## **Public Hearing Results**

## **Committee Action:**

**Disapproved**

**Committee Reason:** This is one of a series of proposals (G49-15 through G75-15) which would systematically relocate all provisions of Chapter 4 of the IBC to another location in the code. The proponent of these changes would locate current Chapter 4 provisions with other code requirements that they are a logical extension. A primary argument by the proponent for the relocation Chapter 4 provisions is to make these various provisions more easily found during the design process. He believes that their location in Chapter 4 results in them being either overlooked or found late in the design process and requiring substantial modifications to a design. The committee in disapproving the series of changes concluded that Chapter 4 provides a convenient location for specialized use and design provisions. It allows designers to start in one location to find unique requirements of a use or building feature before proceeding through the rest of the code to determine allowed height, area, construction types, and fire protection requirements found in those specific topic chapters. Contrary to the reason provided by the proponent, the committee felt that Chapter 4 isn't an afterthought in the design process, but is a convenient first stop for specialized requirements. Moving all the provisions of Chapter 4 to other chapters would make other chapters more confusing by adding one or more specialized sets of requirements in the midst of chapters that are relatively straight forward in addressing their topics. There was concern that unique and key provisions found in Chapter 4 could be lost and overlooked if moved to other code locations.

Although none of the series of proposals was approved, some individual proposals found more support than others. While the committee did not support complete elimination of Chapter 4, a case for relocating some provisions was made by a larger minority of the committee. This proposal addresses I-2 occupancies, there was support for relocation to Chapter 3 because it is only related to an occupancy.

## **Assembly Action :**

**None**

---

### **Individual Consideration Agenda**

#### *Public Comment 1:*

**Proponent : David Collins, the Preview Group, representing The American Institute of Architects ([\[email protected\]](#))**

**) requests Approve as Submitted.**

**Commenter's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the "institutional" occupancy provisions that include requirements for height and area are not referenced in Chapter 5, and the only reference in the IBC is found in an exception for fire alarms in Section 907.2.6.3.3. While the Code Change Committee rejected this proposal, there was support for this change as it is occupancy specific and the requirements should relate closely to the scoping provisions in Chapter 3 for the occupancy in which these parking facilities are classified. We believe that much confusion and failure to understand how the code intends to be applied can be eliminated by placing a reference to 407 in Section 308.

#### *Public Comment 2:*

**Proponent : Steven Winkel, the Preview Group representing The American Institute of Architects (swinkel@preview-group.com) requests Approve as Modified by this Public Comment.**

**Replace Proposal as Follows:**

## **2015 International Building Code**

**308.4.3 Group I-2 occupancy requirements.** Occupancies in Group I-2 shall comply with the provisions of Sections 407 and other applicable provisions of this code.

**Commenter's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the "institutional" occupancy provisions that include requirements for specific I-2 institutional spaces and conditions, and the only reference in the IBC to Section 407 is for fire alarms in Section 907.2.6.2.

While the Code Change Committee rejected this proposal, there was support for this change as it is occupancy specific and the requirements should relate closely to the scoping provisions in Chapter 3 for the occupancy in which these institutional facilities are classified. We believe that much confusion and failure to understand how the code intends to be applied can be eliminated by referncing the provisions in Section 407 in Section 308.

---

**G55-15**

# G56-15

408, 408.1, 408.2, 408.3, 408.4, 408.5, 408.6, 408.7, 408.8, 408.9, [F] 408.10, [F] 408.11

## Proposed Change as Submitted

**Proponent :** David Collins, representing The American Institute of Architects (dcollins@preview-group.com)

### 2015 International Building Code

Delete without substitution:

#### ~~SECTION 408- GROUP I-3~~

Revise as follows:

#### ~~408.1~~ 308.5.6 ~~General.~~ **Group I-3 occupancy**

**requirements** Occupancies in Group I-3 shall comply with the provisions of Sections ~~408.1~~ 308.5.6.1 through ~~408.11~~ 308.5.6.11 and other applicable provisions of this code (see Section ~~308.5~~).

#### ~~408.1.1~~ 308.5.6.1 **Definitions.**

*(The text of this section and subsequent sections would be unchanged except to update section references.)*

#### ~~408.2~~ 308.5.6.2 **Other occupancies.**

#### ~~408.3~~ 308.5.6.3 **Means of egress.**

#### ~~408.3.1~~ 308.5.6.3.1 **Door width.**

#### ~~408.3.2~~ 308.5.6.3.2 **Sliding doors.**

#### ~~408.3.3~~ 308.5.6.3.3 **Guard tower doors.**

#### ~~408.3.4~~ 308.5.6.3.4 **Spiral stairways.**

#### ~~408.3.5~~ 308.5.6.3.5 **Ships ladders.**

#### ~~408.3.6~~ 308.5.6.3.6 **Exit discharge.**

#### ~~408.3.7~~ 308.5.6.3.7 **Sallyports.**

#### ~~408.3.8~~ 308.5.6.3.8 **Interior exit stairway and ramp construction.**

#### ~~408.4~~ 308.5.6.4 **Locks.**

#### ~~408.4.1~~ 308.5.6.4.1 **Remote release.**

#### [F] ~~408.4.2~~ 308.5.6.4.2 **Power-operated doors and locks.**

#### ~~408.4.3~~ 308.5.6.4.3 **Redundant operation.**

#### ~~408.4.4~~ 308.5.6.4.4 **Relock capability.**

**~~408.5~~ 308.5.6.5 Protection of vertical openings.**

**~~408.5.1~~ 308.5.6.5.1 Floor openings.**

**~~408.5.2~~ 308.5.6.5.2 Shaft openings in communicating floor levels.**

**~~408.6~~ 308.5.6.6 Smoke barrier.**

**~~408.6.1~~ 308.5.6.6.1 Smoke compartments.**

**~~408.6.2~~ 308.5.6.6.2 Refuge area.**

**~~408.6.3~~ 308.5.6.6.3 Independent egress.**

**~~408.7~~ 308.5.6.7 Security glazing.**

**~~408.8~~ 308.5.6.8 Subdivision of resident housing areas.**

**~~408.8.1~~ 308.5.6.8.1 Occupancy Conditions 3 and 4.**

**~~408.8.2~~ 308.5.6.8.2 Occupancy Condition 5.**

**~~408.8.3~~ 308.5.6.8.3 Openings in room face.**

**~~408.8.4~~ 308.5.6.8.4 Smoke-tight doors.**

**~~408.9~~ 308.5.6.9 Windowless buildings.**

**[F] ~~408.10~~ 308.5.6.10 Fire alarm system.**

**[F] ~~408.11~~ 308.5.6.11 Automatic sprinkler system.**

**Reason:** Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features.

I-3 criteria in Chapter 4 are typical of the occupancy criteria that provide a summary of various provisions from the code for one occupancy. While an I-3 is somewhat special, many of these criteria are well recognized in the code for various occupancies. To make the application of these provisions obvious to the code user, their placement in Chapter 3 along with the classification information will provide greater clarity to their necessity by the code users.

**Cost Impact:** Will not increase the cost of construction  
Clarifying how the code is to be used for particular occupancies will not increase the cost of construction.

G56-15 : 408-  
COLLINS4808

---

**Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** This is one of a series of proposals (G49-15 through G75-15) which would systematically relocate all provisions of Chapter 4 of the IBC to another

location in the code. The proponent of these changes would locate current Chapter 4 provisions with other code requirements that they are a logical extension. A primary argument by the proponent for the relocation Chapter 4 provisions is to make these various provisions more easily found during the design process. He believes that their location in Chapter 4 results in them being either overlooked or found late in the design process and requiring substantial modifications to a design. The committee in disapproving the series of changes concluded that Chapter 4 provides a convenient location for specialized use and design provisions. It allows designers to start in one location to find unique requirements of a use or building feature before proceeding through the rest of the code to determine allowed height, area, construction types, and fire protection requirements found in those specific topic chapters. Contrary to the reason provided by the proponent, the committee felt that Chapter 4 isn't an afterthought in the design process, but is a convenient first stop for specialized requirements. Moving all the provisions of Chapter 4 to other chapters would make other chapters more confusing by adding one or more specialized sets of requirements in the midst of chapters that are relatively straight forward in addressing their topics. There was concern that unique and key provisions found in Chapter 4 could be lost and overlooked if moved to other code locations.

Although none of the series of proposals was approved, some individual proposals found more support than others. While the committee did not support complete elimination of Chapter 4, a case for relocating some provisions was made by a larger minority of the committee. This proposal addresses I-3 occupancies, there was support for relocation to Chapter 3 because it is only related to an occupancy. Others find that moving to Chapter 3 provides no clear benefits.

**Assembly Action :**

**None**

---

### **Individual Consideration Agenda**

#### *Public Comment 1:*

**Proponent : David Collins, representing The American Institute of Architects (dcollins@preview-group.com) requests Approve as Submitted.**

**Commenter's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the "institutional" occupancy provisions that include requirements for specific I-3 institutional spaces and conditions, and the only reference in the IBC to Section 408 is in an exception in Section 1019.4 for exit access stairways and ramps.

While the Code Change Committee rejected this proposal, there was support for this change as it is occupancy specific and the requirements should relate closely to the scoping provisions in Chapter 3 for the occupancy in which these institutional facilities are classified. We believe that much confusion and failure to understand how the code intends to be applied to I-3 occupancies can be eliminated by placing the provisions in Section 407 in Section 308.

#### *Public Comment 2:*

**Proponent : Steven Winkel, the Preview Group representing The American Institute of Architects (swinkel@preview-group.com)**

**requests Approve as Modified by this Public Comment.**

**Replace Proposal as Follows:**

## **2015 International Building Code**

**308.5.6 I-3 occupancy requirements.** Occupancies in Group I-3 shall comply with the provisions of Sections 408.5.6.1 through 408.11 and other applicable provisions of this code.

**Commenter's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the "institutional" occupancy provisions that include requirements for specific I-3 institutional spaces and conditions, and the only reference in the IBC to Section 408 is in an exception in Section 1019.4 for exit access stairways and ramps.

While the Code Change Committee rejected this proposal, there was support for this change as it is occupancy specific and the requirements should relate closely to the scoping provisions in Chapter 3 for the occupancy in which these institutional facilities are classified. We believe that much confusion and failure to understand how the code intends to be applied to I-3 occupancies can be eliminated by referencing the provisions in Section 407 in Section 308.

---

**G56-15**

# G57-15

[F] 307.1.1, 409, 409.1, 409.1.1, 409.2, 409.3, 409.3.1, 409.3.2, 409.3.3, 409.4, 409.5

## Proposed Change as Submitted

**Proponent :** David Collins, representing The American Institute of Architects (dcollins@preview-group.com)

## 2015 International Building Code

### Revise as follows:

[F] 307.1.1 **Uses other than Group H.** An occupancy that stores, uses or handles hazardous materials as described in one or more of the following items shall not be classified as Group H, but shall be classified as the occupancy that it most nearly resembles.

1. Buildings and structures occupied for the application of flammable finishes, provided that such buildings or areas conform to the requirements of Section 416 and the *International Fire Code*.
2. Wholesale and retail sales and storage of flammable and combustible liquids in mercantile occupancies conforming to the *International Fire Code*.
3. Closed piping system containing flammable or combustible liquids or gases utilized for the operation of machinery or equipment.
4. Cleaning establishments that utilize combustible liquid solvents having a flash point of 140°F (60°C) or higher in closed systems employing equipment *listed* by an *approved* testing agency, provided that this occupancy is separated from all other areas of the building by 1-hour *fire barriers* constructed in accordance with Section 707 or 1-hour *horizontal assemblies* constructed in accordance with Section 711, or both.
5. Cleaning establishments that utilize a liquid solvent having a flash point at or above 200°F (93°C).
6. Liquor stores and distributors without bulk storage.
7. Refrigeration systems.
8. The storage or utilization of materials for agricultural purposes on the premises.
9. Stationary batteries utilized for facility emergency power, uninterruptable power supply or telecommunication facilities, provided that the batteries are provided with safety venting caps and *ventilation* is provided in accordance with the *International Mechanical Code*.
10. Corrosive personal or household products in their original packaging used in retail display.
11. Commonly used corrosive building materials.
12. Buildings and structures occupied for aerosol storage shall be classified as Group S-1, provided that such buildings conform to the requirements of the *International Fire Code*.
13. Display and storage of nonflammable solid and nonflammable or noncombustible liquid hazardous materials in quantities not

- exceeding the maximum allowable quantity per *control area* in Group M or S occupancies complying with Section 414.2.5.
14. The storage of black powder, smokeless propellant and small arms primers in Groups M and R-3 and special industrial explosive devices in Groups B, F, M and S, provided such storage conforms to the quantity limits and requirements prescribed in the *International Fire Code*.
  15. Motion picture projection rooms in which ribbon-type cellulose acetate or other safety film is utilized in conjunction with electric arc, xenon or other light-source projection equipment that develops hazardous gases, dust or radiation. Where cellulose nitrate film is utilized or stored, such rooms shall comply with NFPA 40. All such projection rooms, appertenant electrical equipment, such as rheostats, transformers and generators shall be enclosed in an enclosure meeting the requirements of Section 307.1.3.

**Delete without substitution:**

~~**SECTION 409**~~  
~~**MOTION PICTURE PROJECTION ROOMS**~~

**Revise as follows:**

~~**409.1 307.1.3 General.**~~ **Motion picture projection rooms** The provisions of Sections ~~409.1 307.1.3.1~~ through ~~409.5 307.1.3.5~~ shall apply to rooms in which ribbon-type cellulose acetate or other safety film is utilized in conjunction with electric arc, xenon or other light-source projection equipment that develops hazardous gases, dust or radiation. Where cellulose nitrate film is utilized or stored, such rooms shall comply with NFPA 40.

~~**409.1.1 307.1.3.1**~~ **Projection room required.**

*(The text of this section and subsequent sections would be unchanged except to update section references.)*

~~**409.2 307.1.3.2**~~ **Construction of projection rooms.**

~~**409.3 307.1.3.3**~~ **Projection room and equipment ventilation.**

~~**409.3.1 307.1.3.3.1**~~ **Supply air.**

~~**409.3.2 307.1.3.3.2**~~ **Exhaust air.**

~~**409.3.3 307.1.3.3.3**~~ **Projection machines.**

~~**409.4 307.1.3.4**~~ **Lighting control.**

~~**409.5 307.1.3.5**~~ **Miscellaneous equipment.**

**Reason:** Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features.

Motion picture projection rooms as classified by this special section are indicated as having hazardous materials or producing them. How those are treated is addressed in part in Chapters 3 and 4. This change consolidates them into one section where a great deal of information regarding the application of the codes for hazardous materials is located making it easier for the code user to understand how to treat these spaces.

**Cost Impact:** Will not increase the cost of construction  
This correlation of provisions for motion picture rooms will not increase the cost of construction.

G57-15 : 409-  
COLLINS4810

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** This is one of a series of proposals (G49-15 through G75-15) which would systematically relocate all provisions of Chapter 4 of the IBC to another location in the code. The proponent of these changes would locate current Chapter 4 provisions with other code requirements that they are a logical extension. A primary argument by the proponent for the relocation Chapter 4 provisions is to make these various provisions more easily found during the design process. He believes that their location in Chapter 4 results in them being either overlooked or found late in the design process and requiring substantial modifications to a design. The committee in disapproving the series of changes concluded that Chapter 4 provides a convenient location for specialized use and design provisions. It allows designers to start in one location to find unique requirements of a use or building feature before proceeding through the rest of the code to determine allowed height, area, construction types, and fire protection requirements found in those specific topic chapters. Contrary to the reason provided by the proponent, the committee felt that Chapter 4 isn't an afterthought in the design process, but is a convenient first stop for specialized requirements. Moving all the provisions of Chapter 4 to other chapters would make other chapters more confusing by adding one or more specialized sets of requirements in the midst of chapters that are relatively straight forward in addressing their topics. There was concern that unique and key provisions found in Chapter 4 could be lost and overlooked if moved to other code locations.

Although none of the series of proposals was approved, some individual proposals found more support than others. While the committee did not support complete elimination of Chapter 4, a case for relocating some provisions was made by a larger minority of the committee. This proposal addresses motion picture projection booths. The committee did find the proposed additional #15 in Section 307.1.1 would be a useful point to these regulations whether kept in Chapter 4 or moved to a new location.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : David Collins, representing The American Institute of Architects (dcollins@preview-group.com) requests Approve as Submitted.**

**Commenter's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the "motion picture" provisions that include requirements for construction of projection rooms, supply and exhaust air, etc. There are no references in the IBC to Section 409.

While the Code Change Committee rejected this proposal, there was support for this change as it is occupancy specific and the requirements should relate closely to the scoping provisions in Chapter 3 for the hazard these facilities are classified in. We believe that much confusion and failure to understand how the code intends to be applied can be eliminated by placing the requirements in Section 409 in Section 307.

## *Public Comment 2:*

**Proponent : Steven Winkel, representing The Preview Group (swinkel@preview-group.com) requests Approve as Modified by this Public Comment.**

**Replace Proposal as Follows:**

### **2015 International Building Code**

**307.1.3 Motion picture proejection rooms.** The provisions of Sections 409.1 through 409.5 shall apply to rooms in which ribbon-type cellulose acetate or other safety film is utilized in conjunction with electric arc, xenon or other light-source projection equipment that develops hazardous gases, dust or radiation. Where cellulose nitrate film is utilized or stored, such rooms shall comply with NFPA 40.

**Commenter's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the "motion picture" provisions that include requirements for construction of projection rooms, supply and exhaust air, etc. There are no references in the IBC to Section 409.

While the Code Change Committee rejected this proposal, there was support for this change as it is occupancy specific and the requirements should relate closely to the scoping provisions in Chapter 3 for the hazard these facilities are classified in. We believe that much confusion and failure to understand how the code intends to be applied can be eliminated by referencing the requirements in Section 409 in Section 307.

# G58-15

410, 410.1, 410.2, 410.3, 410.4, 410.5, 410.6, [F] 410.7, [F] 410.8, 602.6 (New),

## Proposed Change as Submitted

**Proponent :** David Collins, representing The American Institute of Architects (dcollins@preview-group.com)

### 2015 International Building Code

Delete without substitution:

#### ~~SECTION 410- STAGES, PLATFORMS AND TECHNICAL PRODUCTION AREAS~~

Add new text as follows:

**602.6 Stages, platforms and technical production areas** The provisions of Sections 602.6.1 through 602.6.8 shall apply to all parts of buildings and structures that contain stages or platforms and similar appurtenances as herein defined.

Revise as follows:

~~410.1~~ **602.6.1 Applicability.** The provisions of Sections ~~410.1~~ 602.6.1 through ~~410.8~~ 602.6.8 shall apply to all parts of buildings and structures that contain *stages* or *platforms* and similar appurtenances as herein defined.

~~410.2~~ **602.6.2 Definitions.**

*(The text of this section and subsequent sections would be unchanged except to update section references.)*

~~410.3~~ **602.6.3 Stages.**

~~410.3.1~~ **602.6.3.1 Stage construction.**

~~410.3.1.1~~ **602.6.3.1.1 Stage height and area.**

~~410.3.2~~ **602.6.3.2 Technical production areas: galleries, gridirons and catwalks.**

~~410.3.3~~ **602.6.3.3 Exterior stage doors.**

~~410.3.4~~ **602.6.3.4 Proscenium wall.**

~~410.3.5~~ **602.6.3.5 Proscenium curtain.**

~~410.3.6~~ **602.6.3.6 Scenery.**

~~410.3.7~~ **602.6.3.7 Stage ventilation.**

~~410.3.7.1~~ **602.6.3.7.1 Roof vents.**

[F] ~~410.3.7.2~~ **602.6.3.7.2 Smoke control.**

**410.4 602.6.4 Platform construction.**

**410.4.1 602.6.4.1 Temporary platforms.**

**410.5 602.6.5 Dressing and appurtenant rooms.**

**410.5.1 602.6.5.1 Separation from stage.**

**410.5.2 602.6.5.2 Separation from each other.**

**410.6 602.6.6 Means of egress.**

**410.6.1 602.6.6.1 Arrangement.**

**410.6.2 602.6.6.2 Stairway and ramp enclosure.**

**410.6.3 602.6.6.3 Technical production areas. .**

**410.6.3.1 602.6.6.3.1 Number of means of egress.**

**410.6.3.2 602.6.6.3.2 Exit access travel distance.**

**410.6.3.3 602.6.6.3.3 Two means of egress.**

**410.6.3.4 602.6.6.3.4 Path of egress travel.**

**410.6.3.5 602.6.6.3.5 Width.**

**[F] 410.7 602.6.7 Automatic sprinkler system.**

**[F] 410.8 602.6.8 Standpipes.**

**Reason:** Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features.

The provisions in the code for stages, platforms and technical production areas in Chapter 4 includes elements of construction, wall criteria and opening protection methods required because of the hazards present. Moving these requirements to Chapter 6 to coincide with the construction requirements of buildings will make it obvious to users of the code how such features are to be integrated with the building construction limitations in the code.

**Cost Impact:** Will not increase the cost of construction  
Moving these provisions from Chapter 4 to Chapter 6 will not change the cost of construction.

G58-15 : 410-  
COLLINS4811

---

**Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** This is one of a series of proposals (G49-15 through G75-15) which would systematically relocate all provisions of Chapter 4 of the IBC to another

location in the code. The proponent of these changes would locate current Chapter 4 provisions with other code requirements that they are a logical extension. A primary argument by the proponent for the relocation Chapter 4 provisions is to make these various provisions more easily found during the design process. He believes that their location in Chapter 4 results in them being either overlooked or found late in the design process and requiring substantial modifications to a design. The committee in disapproving the series of changes concluded that Chapter 4 provides a convenient location for specialized use and design provisions. It allows designers to start in one location to find unique requirements of a use or building feature before proceeding through the rest of the code to determine allowed height, area, construction types, and fire protection requirements found in those specific topic chapters. Contrary to the reason provided by the proponent, the committee felt that Chapter 4 isn't an afterthought in the design process, but is a convenient first stop for specialized requirements. Moving all the provisions of Chapter 4 to other chapters would make other chapters more confusing by adding one or more specialized sets of requirements in the midst of chapters that are relatively straight forward in addressing their topics. There was concern that unique and key provisions found in Chapter 4 could be lost and overlooked if moved to other code locations.

Although none of the series of proposals was approved, some individual proposals found more support than others. While the committee did not support complete elimination of Chapter 4, a case for relocating some provisions was made by a larger minority of the committee. This proposal addresses stages which is a specialized construction feature. There was limited support to moving this provision to a different location.

**Assembly Action :**

**None**

---

### **Individual Consideration Agenda**

#### ***Public Comment 1:***

**Proponent : David Collins, representing The American Institute of Architects (dcollins@preview-group.com) requests Approve as Submitted.**

**Commenter's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the requirements for stages and platforms that include requirements for the size and configuration, doors, scenery, ventilation, etc. are not referenced anywhere in the codes

While the Code Change Committee rejected this proposal, there was support for this change as it is occupancy specific and the requirements should relate closely to the scoping provisions in Chapter 6 for the construction limitations, configuration and materials allowed. We believe that much confusion and failure to understand how the code intends to be applied to stages and platforms can be eliminated by placing the provisions in Section 410 in Section 602. It is interesting to note that in the "effective use" portion of the IBC it states:

*In some instances, it may not be necessary to apply the provisions of Chapter 4. For example, if a covered mall building complies with the provisions of the code for Group M, Section 402 does not apply; however, other sections that address a use, process or operation must be applied to that specific occupancy, such as stages and platforms, special amusement buildings and hazardous materials (Sections 410, 411 and 414).*

It appears that there are "occupancies" associated with "stages and platforms, special amusement buildings and hazardous materials" and yet nothing within these sections refers to the occupancy, nor do the occupancies refer to these "special" provisions. The code is broken and should be fixed.

## *Public Comment 2:*

**Proponent : Steven Winkel, the Preview Group representing The American Institute of Architects (swinkel@preview-group.com) requests Approve as Modified by this Public Comment.**

**Replace Proposal as Follows:**

### **2015 International Building Code**

**602.6 Stages, platforms and technical production areas.** The provisions of Sections 410 shall apply to all parts of buildings and structures that contain stages or platforms and similar appurtenances as herein defined.

**Commenter's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the requirements for stages and platforms that include requirements for the size and configuration, doors, scenery, ventilation, etc. are not referenced anywhere in the codes

While the Code Change Committee rejected this proposal, there was support for this change as it is occupancy specific and the requirements should relate closely to the scoping provisions in Chapter 6 for the construction limitations, configuration and materials allowed. We believe that much confusion and failure to understand how the code intends to be applied to stages and platforms can be eliminated by placing a reference to the provisions in Section 410 in Section 602. It is interesting to note that in the "effective use" portion of the IBC it states:

*In some instances, it may not be necessary to apply the provisions of Chapter 4. For example, if a covered mall building complies with the provisions of the code for Group M, Section 402 does not apply; however, other sections that address a use, process or operation must be applied to that specific occupancy, such as stages and platforms, special amusement buildings and hazardous materials (Sections 410, 411 and 414).*

It appears that there are "occupancies" associated with "stages and platforms, special amusement buildings and hazardous materials" and yet nothing within these sections refers to the occupancy, nor do the occupancies refer to these "special" provisions. The code is broken and should be fixed.

---

G58-15

# G59-15

411, 411.1, 411.2, [F] 411.3, [F] 411.4, [F] 411.5, [F] 411.6, 411.7, 411.7.1, 411.8, 304.3 (New)

## Proposed Change as Submitted

**Proponent :** David Collins, representing The American Institute of Architects (dcollins@preview-group.com)

### 2015 International Building Code

Delete without substitution:

#### ~~SECTION 411— SPECIAL AMUSEMENT BUILDINGS~~

Revise as follows:

~~411.1 303.7 General Special amusement buildings. Special amusement buildings having an occupant load of 50 or more shall comply with the requirements for the appropriate Group A occupancy and Sections 411.1 303.7.1 through 411.8 303.7.7. Special amusement buildings having an occupant load of less than 50 shall comply with the requirements for a Group B occupancy and Sections 411.1 through 411.8. \_~~

**Exception:** *Special amusement buildings* or portions thereof that are without walls or a roof and constructed to prevent the accumulation of smoke need not comply with this section.

For flammable *decorative materials*, see the *International Fire Code*.

#### ~~411.2 303.7.1 Definition.~~

*(The text of this section and subsequent sections would be unchanged except to update section references.)*

#### ~~[F] 411.3 303.7.2 Automatic fire detection.~~

#### ~~[F] 411.4 303.7.3 Automatic sprinkler system.~~

#### ~~[F] 411.5 303.7.4 Alarm.~~

#### ~~[F] 411.6 303.7.5 Emergency voice/alarm communications system.~~

#### ~~411.7 303.7.6 Exit marking.~~

#### ~~411.7.1 303.7.6.1 Photoluminescent exit signs.~~

#### ~~411.8 303.7.7 Interior finish.~~

Add new text as follows:

**304.3 Special amusement buildings.** Special amusement buildings having an occupant load of less than 50 shall comply with the requirements for a Group B occupancy and Sections 303.7.1 through 303.7.7.

**Exception:** Special amusement buildings or portions thereof that are without walls or a roof and constructed to prevent the accumulation of smoke need not comply with this section.

For flammable decorative materials, see the *International Fire Code*.

**Reason:** Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features.

Special amusement buildings with more than 50 occupants or more are classified in Section 411.1 as being in an A occupancy. Those that are less than 50 are part of the B occupancy. This same requirements apply to assembly spaces within an office building, but are clearly delineated in Sections 301 and 304. With this change the same clarity for special amusement facilities will be brought to the code.

**Cost Impact:** Will not increase the cost of construction  
By moving these provisions out of Chapter 4 into Chapter 3, no change in the cost of construction will result.

G59-15 : 411-  
COLLINS4813

---

## **Public Hearing Results**

### **Committee Action:**

**Disapproved**

**Committee Reason:** This is one of a series of proposals (G49-15 through G75-15) which would systematically relocate all provisions of Chapter 4 of the IBC to another location in the code. The proponent of these changes would locate current Chapter 4 provisions with other code requirements that they are a logical extension. A primary argument by the proponent for the relocation Chapter 4 provisions is to make these various provisions more easily found during the design process. He believes that their location in Chapter 4 results in them being either overlooked or found late in the design process and requiring substantial modifications to a design. The committee in disapproving the series of changes concluded that Chapter 4 provides a convenient location for specialized use and design provisions. It allows designers to start in one location to find unique requirements of a use or building feature before proceeding through the rest of the code to determine allowed height, area, construction types, and fire protection requirements found in those specific topic chapters. Contrary to the reason provided by the proponent, the committee felt that Chapter 4 isn't an afterthought in the design process, but is a convenient first stop for specialized requirements. Moving all the provisions of Chapter 4 to other chapters would make other chapters more confusing by adding one or more specialized sets of requirements in the midst of chapters that are relatively straight forward in addressing their topics. There was concern that unique and key provisions found in Chapter 4 could be lost and overlooked if moved to other code locations.

Although none of the series of proposals was approved, some individual proposals found more support than others. While the committee did not support complete elimination of Chapter 4, a case for relocating some provisions was made by a larger minority of the committee. This proposal addresses special amusement facilities. The additional reference in Section 304.3 would prove helpful regardless of the future disposition of this proposal. As this is occupancy driven, there was more

support for its relocation.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : David Collins, representing The American Institute of Architects (dcollins@preview-group.com) requests Approve as Submitted.**

**Commenter's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the requirements for special amusement buildings that include requirements for detection and suppression, alarms, voice communication, etc. are not referenced anywhere in the codes.

While the Code Change Committee rejected this proposal, there was support for this change as it is occupancy specific and the requirements should relate closely to the scoping provisions in Chapter 3 for the occupancy classification as places of assembly. We believe that much confusion and failure to understand how the code intends to be applied to stages and platforms can be eliminated by placing the provisions in Section 411 in Section 303. It is interesting to note that in the "effective use" portion of the IBC it states:

*In some instances, it may not be necessary to apply the provisions of Chapter 4. For example, if a covered mall building complies with the provisions of the code for Group M, Section 402 does not apply; however, other sections that address a use, process or operation must be applied to that specific occupancy, such as stages and platforms, special amusement buildings and hazardous materials (Sections 410, 411 and 414).*

It appears that there are "occupancies" associated with "stages and platforms, special amusement buildings and hazardous materials" and yet nothing within these sections refers to the occupancy, nor do the occupancies refer to these "special" provisions. The code is broken and should be fixed.

### *Public Comment 2:*

**Proponent : Steven Winkel, the Preview Group representing The American Institute of Architects (swinkel@preview-group.com) requests Approve as Modified by this Public Comment.**

**Replace Proposal as Follows:**

## **2015 International Building Code**

**303.7 Special amusement buildings.** Special amusement buildings having an occupant load of 50 or more shall comply with the requirements for the appropriate Group A occupancy and Section 411.

**Exception:** Special amusement buildings or portions thereof that are without walls or a roof and constructed to prevent the accumulation of smoke need not comply with this section.

For flammable decorative materials, see the International Fire Code.

**Commenter's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the requirements for special amusement buildings that include requirements for detection and suppression, alarms, voice communication, etc. are not referenced anywhere in the codes.

While the Code Change Committee rejected this proposal, there was support for this change as it is occupancy specific and the requirements should relate closely to the scoping provisions in Chapter 3 for the occupancy classification as places of assembly. We believe that much confusion and failure to understand how the code intends to be applied to stages and platforms can be eliminated by placing the requirements in Section 411 in Section 303. It is interesting to note that in the "effective use" portion of the IBC it states:

*In some instances, it may not be necessary to apply the provisions of Chapter 4. For example, if a covered mall building complies with the provisions of the code for Group M, Section 402 does not apply; however, other sections that address a use, process or operation must be applied to that specific occupancy, such as stages and platforms, special amusement buildings and hazardous materials (Sections 410, 411 and 414).*

It appears that there are "occupancies" associated with "stages and platforms, special amusement buildings and hazardous materials" and yet nothing within these sections refers to the occupancy, nor do the occupancies refer to these "special" provisions. The code is broken and should be fixed.

---

G59-15

# G60-15

412, 412.1, 412.2, 412.3, 412.3.1, 412.3.2, 412.3.3, 412.3.4, 412.3.4.1, [F] 412.3.5, 412.3.6, 412.3.7, 412.3.7.1, 412.3.8, 412.7, 412.7.1, [F] 412.6, [F] 412.6.1, 412.6.2, [F] 412.6.3, [F] 412.6.4, [F] 412.6.5, [F] 412.6.6, 412.4, 412.4.1, 412.4.2, 412.4.3, 412.4.4, 412.4.5, [F] 412.4.6, [F] 412.4.6.1, [F] 412.4.6.2, 412.5, 412.5.1, 412.5.2, [F] 412.5.3, 412.5.4, 412.5.5, [F] 412.8, [F] 412.8.1, [F] 412.8.2, [F] 412.8.3, [F] 412.8.4, [F] 412.8.5

## *Proposed Change as Submitted*

**Proponent :** David Collins, representing The American Institute of Architects (dcollins@preview-group.com)

## 2015 International Building Code

Delete without substitution:

### ~~SECTION 412- AIRCRAFT-RELATED OCCUPANCIES~~

~~412.1 General.~~ Aircraft-related occupancies shall comply with Sections 412.1 through 412.8 and the International Fire Code.

~~412.2 Definitions.~~

Revise as follows:

~~412.3~~304.3.2 Airport traffic control towers.

(The text of this section and subsequent sections would be unchanged except to update section references.)

### TABLE ~~412.3.1~~ 304.3.2.1 HEIGHT LIMITATIONS FOR AIRPORT TRAFFIC CONTROL TOWERS

~~412.3.1~~ 304.3.2.1 Type of construction. .

~~412.3.2~~ 304.3.2.2 Stairways.

~~412.3.3~~ 304.3.2.3 Exit access.

~~412.3.4~~ 304.3.2.4 Number of exits.

~~412.3.4.1~~ 304.3.2.4.1 Interior finish.

[F] ~~412.3.5~~ 304.3.2.5 Automatic fire detection systems.

~~412.3.6~~ 304.3.2.6 Automatic sprinkler system.

~~412.3.7~~ 304.3.2.7 Elevator protection. .

**~~412.3.7.1~~ 304.3.2.7.1 Elevators for occupant evacuation.**

**~~412.3.8~~ 304.3.2.8 Accessibility.**

**TABLE ~~412.7~~306.2.1  
AIRCRAFT MANUFACTURING EXIT ACCESS TRAVEL DISTANCE**

**~~412.7~~ 306.2.1 Aircraft manufacturing facilities.** In buildings used for the manufacturing of aircraft, exit access travel distances indicated in Section 1017.1 shall be increased in accordance with the following:

1. The building shall be of Type I or II construction.
2. Exit access travel distance shall not exceed the distances given in Table ~~412.7~~306.2.1.

**~~412.7.1~~ 306.2.1.1 Ancillary areas.**

**[F] ~~412.6~~ 307.4.1 Aircraft paint hangars.** Aircraft painting operations where flammable liquids are used in excess of the maximum allowable quantities per *control area* listed in Table 307.1(1) shall be conducted in an aircraft paint hangar that complies with the provisions of Sections ~~412.6.1~~ 307.4.1.1 through ~~412.6.6~~ 307.4.1.6.

**[F] ~~412.6.1~~ 307.4.1.1 Occupancy group.**

**~~412.6.2~~ 307.4.1.2 Construction.**

**[F] ~~412.6.3~~ 307.4.1.3 Operations.**

**[F] ~~412.6.4~~ 307.4.1.4 Storage.**

**[F] ~~412.6.5~~ 307.4.1.5 Fire suppression.**

**[F] ~~412.6.6~~ 307.4.1.6 Ventilation.**

**~~412.4~~ 311.2.1 Aircraft hangars.** ~~Aircraft hangars—~~ All aircraft hangers shall be in accordance with 311.2.1.1 through 311.2.1.6. In addition, aircraft painting hangers, manufacturing hangers and helipads shall be in accordance with Sections 412.4.1 through 412.4.6. Secions 311.3, 311.4 and 311.5 respectively.

**~~412.4.1~~ 311.2.1.1 Exterior walls.**

**~~412.4.2~~ 311.2.1.2 Basements.**

**~~412.4.3~~ 311.2.1.3 Floor surface.**

**~~412.4.4~~ 311.2.1.4 Heating equipment.**

**~~412.4.5~~ 311.2.1.5 Finishing.**

**[F] ~~412.4.6~~ 311.2.1.6 Fire suppression.**

**TABLE [F] 311.2.1.6  
HANGAR FIRE SUPPRESSION REQUIREMENTS<sup>a,b,c</sup>**

[F] ~~412.4.6.1~~ 311.2.1.6.1 **Hazardous operations.**

[F] ~~412.4.6.2~~ 311.2.1.6.2 **Separation of maximum single fire areas.**

~~412.5~~ 312.7 **Residential aircraft hangars.** *Residential aircraft hangars shall comply with Sections ~~412.5.1~~ 312.7.1 through ~~412.5.5~~ 312.7.5.*

~~412.5.1~~ 312.7.1 **Fire separation.**

~~412.5.2~~ 312.7.2 **Egress.**

[F] ~~412.5.3~~ 312.7.3 **Smoke alarms.**

~~412.5.4~~ 312.7.4 **Independent systems. .**

~~412.5.5~~ 312.7.5 **Height and area limits.**

[F] ~~412.8~~ 1510.10 **Heliports and helistops.** *Heliports and helistops shall be permitted to be erected on buildings or other locations where they are constructed in accordance with Sections ~~412.8.1~~ through ~~412.8.5~~ 1510.10.1 through 1510.10.5*

[F] ~~412.8.1~~ 1510.10.1 **Size.** *No change to text.*

[F] ~~412.8.2~~ 1510.10.2 **Design.**

[F] ~~412.8.3~~ 1510.10.3 **Means of egress.**

[F] ~~412.8.4~~ 1510.10.4 **Rooftop heliports and helistops.**

[F] ~~412.8.5~~ 1510.10.5 **Standpipe system.**

**Reason:** Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features.

Aircraft related occupancies involves a broad number of applications. Aircraft control towers are listed as a B occupancy and items specific to them have been move to this location. Other elements of Section 412 include hangers and manufacturing which are part of the storage occupancies, as well as heliports and helitstops that are addressed as facilities on a rooftop. Those requirements are moved to the storage parts of the code and rooftop structures which include them for clarification.

**Cost Impact:** Will not increase the cost of construction  
These provisions are moved for clarification with no technical changes and should not affect the cost of construction.

G60-15 : 412-  
COLLINS4814

---

## **Public Hearing Results**

## **Committee Action:**

**Disapproved**

**Committee Reason:** This is one of a series of proposals (G49-15 through G75-15) which would systematically relocate all provisions of Chapter 4 of the IBC to another location in the code. The proponent of these changes would locate current Chapter 4 provisions with other code requirements that they are a logical extension. A primary argument by the proponent for the relocation Chapter 4 provisions is to make these various provisions more easily found during the design process. He believes that their location in Chapter 4 results in them being either overlooked or found late in the design process and requiring substantial modifications to a design. The committee in disapproving the series of changes concluded that Chapter 4 provides a convenient location for specialized use and design provisions. It allows designers to start in one location to find unique requirements of a use or building feature before proceeding through the rest of the code to determine allowed height, area, construction types, and fire protection requirements found in those specific topic chapters. Contrary to the reason provided by the proponent, the committee felt that Chapter 4 isn't an afterthought in the design process, but is a convenient first stop for specialized requirements. Moving all the provisions of Chapter 4 to other chapters would make other chapters more confusing by adding one or more specialized sets of requirements in the midst of chapters that are relatively straight forward in addressing their topics. There was concern that unique and key provisions found in Chapter 4 could be lost and overlooked if moved to other code locations.

Although none of the series of proposals was approved, some individual proposals found more support than others. While the committee did not support complete elimination of Chapter 4, a case for relocating some provisions was made by a larger minority of the committee. This section addresses aircraft control towers. This continues to be a very special type of occupancy/facility and it needs to remain in Chapter 4

## **Assembly Action :**

**None**

---

### **Individual Consideration Agenda**

#### ***Public Comment 1:***

**Proponent : David Collins, representing The American Institute of Architects (dcollins@preview-group.com) requests Approve as Submitted.**

**Commenter's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the requirements for aircraft control towers that include requirements for type of construction, stairways, egress access, fire detection and suppression systems, etc. are not referenced anywhere in the codes except as an exception to fire protection in 907.2.13. It isn't clear why that particular exception was created and all the others weren't treated similarly

While the Code Change Committee rejected this proposal, there was support for this change as it is occupancy specific and the requirements should relate closely to the scoping provisions in Chapter 3 for the occupancy classification as a business where it appears as the first item on the list of such occupancies. We believe that much confusion and failure to understand how the code intends to be applied to stages and platforms can be eliminated by placing the provisions in Section 411 in Section 303.

## Public Comment 2:

**Proponent : Steven Winkel, the Preview Group representing The American Institute of Architects (swinkel@preview-group.com) requests Approve as Modified by this Public Comment.**

**Replace Proposal as Follows:**

### **2015 International Building Code**

**304.3.2 Airport traffic control towers.** The provisions of Section 412.3 shall apply to airport traffic control towers occupied only for the following uses:

1. Airport traffic control cab.
2. Electrical and mechanical equipment rooms.
3. Airport terminal radar and electronics rooms.
4. Office spaces incidental to the tower operation.
5. Lounges for employees, including sanitary facilities.

**Commenter's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the requirements for aircraft control towers that include requirements for type of construction, stairways, egress access, fire detection and suppression systems, etc. are not referenced anywhere in the codes except as an exception to fire protection in 907.2.13. It isn't clear why that particular exception was created and all the others weren't treated similarly

While the Code Change Committee rejected this proposal, there was support for this change as it is occupancy specific and the requirements should relate closely to the scoping provisions in Chapter 3 for the occupancy classification as a business where it appears as the first item on the list of such occupancies. We believe that much confusion and failure to understand how the code intends to be applied to stages and platforms can be eliminated by placing a reference to the provisions in Section 411 in Section 303.

---

G60-15

# G61-15

412, 412.4, 412.4.1, 412.4.2, 412.4.3, 412.4.4, 412.4.5, [F] 412.4.6, [F] 412.4.6.1, [F] 412.4.6.2

## Proposed Change as Submitted

**Proponent :** David Collins, representing The American Institute of Architects (dcollins@preview-group.com)

### 2015 International Building Code

Delete without substitution:

#### ~~SECTION 412- AIRCRAFT-RELATED OCCUPANCIES~~

Revise as follows:

~~412.4~~ **311.2.1 Aircraft hangars.** Aircraft hangars shall be in accordance with Sections ~~412.4.1~~ 311.2.1.1 through ~~412.4.6~~ 311.2.1.6.

~~412.4.1~~ **311.2.1.1 Exterior walls.**

*(The text of this section and subsequent sections would be unchanged except to update section references.)*

~~412.4.2~~ **311.2.1.2 Basements.**

~~412.4.3~~ **311.2.1.3 Floor surface.**

~~412.4.4~~ **311.2.1.4 Heating equipment.**

~~412.4.5~~ **311.2.1.5 Finishing.**

[F] ~~412.4.6~~ **311.2.1.6 Fire suppression.**

#### TABLE [F] ~~412.4.6~~ 311.2.1.6 HANGAR FIRE SUPPRESSION REQUIREMENTS<sup>a,b,c</sup>

[F] ~~412.4.6.1~~ **311.2.1.6.1 Hazardous operations.**

[F] ~~412.4.6.2~~ **311.2.1.6.2 Separation of maximum single fire areas.**

**Reason:** Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features.

By moving the provisions in Chapter 4 for aircraft hangers into the area limits in Chapter 3, the triggers and allowances for malls will be clear and obvious choices. Correlation of references to new code locations are not included in the proposal but

need to be provided by the editorial staff.

**Cost Impact:** Will not increase the cost of construction  
Simply moving the technical requirements from Chapter 4 to Chapter 3 does not change their application and will not increase the cost of construction.

G61-15 : 412-  
COLLINS4967

---

## **Public Hearing Results**

### **Committee Action:**

**Disapproved**

**Committee Reason:** This is one of a series of proposals (G49-15 through G75-15) which would systematically relocate all provisions of Chapter 4 of the IBC to another location in the code. The proponent of these changes would locate current Chapter 4 provisions with other code requirements that they are a logical extension. A primary argument by the proponent for the relocation Chapter 4 provisions is to make these various provisions more easily found during the design process. He believes that their location in Chapter 4 results in them being either overlooked or found late in the design process and requiring substantial modifications to a design. The committee in disapproving the series of changes concluded that Chapter 4 provides a convenient location for specialized use and design provisions. It allows designers to start in one location to find unique requirements of a use or building feature before proceeding through the rest of the code to determine allowed height, area, construction types, and fire protection requirements found in those specific topic chapters. Contrary to the reason provided by the proponent, the committee felt that Chapter 4 isn't an afterthought in the design process, but is a convenient first stop for specialized requirements. Moving all the provisions of Chapter 4 to other chapters would make other chapters more confusing by adding one or more specialized sets of requirements in the midst of chapters that are relatively straight forward in addressing their topics. There was concern that unique and key provisions found in Chapter 4 could be lost and overlooked if moved to other code locations.

Although none of the series of proposals was approved, some individual proposals found more support than others. While the committee did not support complete elimination of Chapter 4, a case for relocating some provisions was made by a larger minority of the committee. This section addresses aircraft hangers.

### **Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### ***Public Comment 1:***

**Proponent : David Collins, representing The American Institute of Architects (dcollins@preview-group.com) requests Approve as Submitted.**

**Commenter's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the requirements for "aircraft-related occupancies" that include requirements for the exterior walls of hangers, basements, floor surfaces and fire suppression, etc. are not referenced anywhere in the codes.

While the Code Change Committee rejected this proposal, there was support for this

change as it is occupancy specific and the requirements should relate closely to the scoping provisions in Chapter 3 for the occupancy classification as storage. We believe that much confusion and failure to understand how the code intends to be applied to aircraft-related occupancies can be eliminated by placing the provisions in Section 412 in Section 311.

## *Public Comment 2:*

**Proponent : Steven Winkel, the Preview Group representing The American Institute of Architects (swinkel@preview-group.com) requests Approve as Modified by this Public Comment.**

**Replace Proposal as Follows:**

### **2015 International Building Code**

**311.2.1 Aircraft hangers.** Aircraft hangars shall be in accordance with Section 412.4.1.

**Commenter's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the requirements for "aircraft-related occupancies" that include requirements for the exterior walls of hangers, basements, floor surfaces and fire suppression, etc. are not referenced anywhere in the codes.

While the Code Change Committee rejected this proposal, there was support for this change as it is occupancy specific and the requirements should relate closely to the scoping provisions in Chapter 3 for the occupancy classification as storage. We believe that much confusion and failure to understand how the code intends to be applied to aircraft-related occupancies can be eliminated by referencing the provisions in Section 412 in Section 311.

---

**G61-15**

# G62-15

413, 413.1, 413.2

## Proposed Change as Submitted

**Proponent :** David Collins, representing The American Institute of Architects (dcollins@preview-group.com)

### 2015 International Building Code

Delete without substitution:

#### ~~SECTION 413- COMBUSTIBLE STORAGE~~

Revise as follows:

~~413.1~~ 311.2.1 **General High-piled stock or rack storage.** High-piled stock or rack storage in any occupancy group shall comply with the *International Fire Code*.

~~413.2~~ 311.2.2 **Attic, under-floor and concealed spaces.**

*(The text of this section would be unchanged except to update section references.)*

**Reason:** Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features.

Provisions of the code for high-piles stock or rack storage are being moved to the occupancy sections which include the criteria for these conditions of storage and will provide a single location for users to find the requirements for this condition.

**Cost Impact:** Will not increase the cost of construction  
The provisions for storage are not being changed and the new location should not create any additional cost of construction.

G62-15 : 413-  
COLLINS4816

---

## Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** This is one of a series of proposals (G49-15 through G75-15) which would systematically relocate all provisions of Chapter 4 of the IBC to another location in the code. The proponent of these changes would locate current Chapter 4 provisions with other code requirements that they are a logical extension. A primary argument by the proponent for the relocation Chapter 4 provisions is to make these various provisions more easily found during the design process. He believes that their location in Chapter 4 results in them being either overlooked or found late in

the design process and requiring substantial modifications to a design. The committee in disapproving the series of changes concluded that Chapter 4 provides a convenient location for specialized use and design provisions. It allows designers to start in one location to find unique requirements of a use or building feature before proceeding through the rest of the code to determine allowed height, area, construction types, and fire protection requirements found in those specific topic chapters. Contrary to the reason provided by the proponent, the committee felt that Chapter 4 isn't an afterthought in the design process, but is a convenient first stop for specialized requirements. Moving all the provisions of Chapter 4 to other chapters would make other chapters more confusing by adding one or more specialized sets of requirements in the midst of chapters that are relatively straight forward in addressing their topics. There was concern that unique and key provisions found in Chapter 4 could be lost and overlooked if moved to other code locations.

Although none of the series of proposals was approved, some individual proposals found more support than others. While the committee did not support complete elimination of Chapter 4, a case for relocating some provisions was made by a larger minority of the committee. This section is a leftover after all other provisions were moved to the fire code. High pile storage isn't limited to the S occupancy.

**Assembly Action :**

**None**

---

### **Individual Consideration Agenda**

#### ***Public Comment 1:***

**Proponent : David Collins, representing The American Institute of Architects (dcollins@preview-group.com) requests Approve as Submitted.**

**Commenter's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the requirements for "combustible storage" that includes simply a reference to the IFC and attic or under-floor spaces which address fire separation is not referenced anywhere in the codes.

While the Code Change Committee rejected this proposal, there was support for this change as it is occupancy specific and the requirements should relate closely to the scoping provisions in Chapter 3 for the occupancy classification as storage. We believe that much confusion and failure to understand how the code intends to be applied to combustible storage can be eliminated by placing the provisions in Section 413 in Section 311.

---

**G62-15**

# G63-15

414, [F] 414.1, [F] 414.1.1, [F] 414.1.2, [F] 414.1.2.1, [F] 414.1.3, [F] 414.2, [F] 414.2.1, [F] 414.2.2, [F] 414.2.3, [F] 414.2.4, [F] 414.2.5, [F] 414.3, [F] 414.4, [F] 414.5, [F] 414.5.1, [F] 414.5.2, [F] 414.5.2.1, [F] 414.5.2.2, [F] 414.5.3, [F] 414.6, [F] 414.6.1, [F] 414.6.1.1, [F] 414.6.1.2, [F] 414.6.1.3

## Proposed Change as Submitted

**Proponent :** David Collins, representing The American Institute of Architects (dcollins@preview-group.com)

## 2015 International Building Code

Delete without substitution:

### ~~SECTION 414- HAZARDOUS MATERIALS~~

Revise as follows:

[F] ~~414.1~~ 307.9 **General.** The provisions of Sections ~~414.1~~ 307.9.1 through ~~414.6~~ 307.9.6 shall apply to buildings and structures occupied for the manufacturing, processing, dispensing, use or storage of hazardous materials.

[F] ~~414.1.1~~ 307.9.1.1 **Other provisions.**

*(The text of this section and subsequent sections would be unchanged except to update section references.)*

[F] ~~414.1.2~~ 307.9.1.2 **Materials.**

[F] ~~414.1.2.1~~ 307.9.1.2.1 **Aerosols.**

[F] ~~414.1.3~~ 307.9.1.3 **Information required.**

[F] ~~414.2~~ 307.9.2 **Control areas.**

[F] ~~414.2.1~~ 307.9.2.1 **Construction requirements.**

### TABLE [F] ~~414.2.2~~ 307.9.2.2 DESIGN AND NUMBER OF CONTROL AREAS

[F] ~~414.2.2~~ 307.9.2.2 **Percentage of maximum allowable quantities.**

[F] ~~414.2.3~~ 307.9.2.3 **Number.**

[F] ~~414.2.4~~ 307.9.2.4 **Fire-resistance-rating requirements.**

[F] ~~414.2.5~~ 307.9.2.5 **Hazardous material in Group M display and storage areas and in Group S storage areas.**

### TABLE [F] ~~414.2.5(1)~~ 307.9.2.5 (1) MAXIMUM ALLOWABLE QUANTITY OF FLAMMABLE AND COMBUSTIBLE

**LIQUIDS IN WHOLESALE AND RETAIL SALES OCCUPANCIES PER  
CONTROL AREA<sup>a</sup>**

**TABLE [F] ~~414.2.5(2)~~ 307.9.2.5(2)  
MAXIMUM ALLOWABLE QUANTITY PER INDOOR AND OUTDOOR  
CONTROL AREA IN GROUP M AND S OCCUPANCIES NONFLAMMABLE  
SOLIDS AND NONFLAMMABLE AND NONCOMBUSTIBLE LIQUIDS<sup>d,e,f</sup>**

**[F] ~~414.3~~ 307.9.3 Ventilation.**

**[F] ~~414.4~~ 307.9.4 Hazardous material systems.**

**[F] ~~414.5~~ 307.9.5 Inside storage, dispensing and use.**

**TABLE [F]~~414.5.1~~ 307.9.5.1  
EXPLOSION CONTROL REQUIREMENTS<sup>a, h</sup>**

**[F] ~~414.5.1~~ 307.9.5.1 Explosion control.**

**[F] ~~414.5.2~~ 307.9.5.2 Emergency or standby power.**

**[F] ~~414.5.2.1~~ 307.9.5.2.1 Exempt applications.**

**[F] ~~414.5.2.2~~ 307.9.5.2.2 Fail-safe engineered systems.**

**[F] ~~414.5.3~~ 307.9.5.3 Spill control, drainage and containment.**

**[F] ~~414.6~~ 307.9.6 Outdoor storage, dispensing and use.**

**[F] ~~414.6.1~~ 307.9.6.1 Weather protection.**

**[F] ~~414.6.1.1~~ 307.9.6.1.1 Walls.**

**[F] ~~414.6.1.2~~ 307.9.6.1.2 Separation distance.**

**[F] ~~414.6.1.3~~ 307.9.6.1.3 Noncombustible construction.**

**Reason:** Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features. Provisions of the code for manufacturing, processing, dispensing, use or storage are being moved to the occupancy sections which include the criteria for these conditions and will provide a single location for users to find the requirements for this condition.

**Cost Impact:** Will not increase the cost of construction because the technical provisions of the code are not being changed, but simply moved, there is no impact on the cost of construction.

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** This is one of a series of proposals (G49-15 through G75-15) which would systematically relocate all provisions of Chapter 4 of the IBC to another location in the code. The proponent of these changes would locate current Chapter 4 provisions with other code requirements that they are a logical extension. A primary argument by the proponent for the relocation Chapter 4 provisions is to make these various provisions more easily found during the design process. He believes that their location in Chapter 4 results in them being either overlooked or found late in the design process and requiring substantial modifications to a design. The committee in disapproving the series of changes concluded that Chapter 4 provides a convenient location for specialized use and design provisions. It allows designers to start in one location to find unique requirements of a use or building feature before proceeding through the rest of the code to determine allowed height, area, construction types, and fire protection requirements found in those specific topic chapters. Contrary to the reason provided by the proponent, the committee felt that Chapter 4 isn't an afterthought in the design process, but is a convenient first stop for specialized requirements. Moving all the provisions of Chapter 4 to other chapters would make other chapters more confusing by adding one or more specialized sets of requirements in the midst of chapters that are relatively straight forward in addressing their topics. There was concern that unique and key provisions found in Chapter 4 could be lost and overlooked if moved to other code locations.

Although none of the series of proposals was approved, some individual proposals found more support than others. While the committee did not support complete elimination of Chapter 4, a case for relocating some provisions was made by a larger minority of the committee. This section addresses requirements which are only needed where hazardous materials are used in larger quantities.

**Assembly Action :**

**None**

### **Individual Consideration Agenda**

#### *Public Comment 1:*

**Proponent : David Collins, representing The American Institute of Architects (dcollins@preview-group.com) requests Approve as Submitted.**

**Commenter's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the requirements for hazardous materials that include requirements for specific materials, aerosols, control areas, etc. are referenced in Section 307.1 stating:

*... quantities in excess of those allowed in control areas complying with Section 414, based on the maximum allowable quantity limits for control areas set forth in Tables 307.1(1) and 307.1(2).*

While the Code Change Committee rejected this proposal, there was support for this change as it is occupancy specific and the requirements should relate closely to the scoping provisions in Chapter 3 for the occupancy classification for high-hazard occupancies. We believe that much confusion and failure to understand how the code intends to be applied to hazardous materials can be eliminated by placing the provisions in Section 414 in Section 307. It is interesting to note that in the

"effective use" portion of the IBC it states:

*In some instances, it may not be necessary to apply the provisions of Chapter 4. For example, if a covered mall building complies with the provisions of the code for Group M, Section 402 does not apply; however, other sections that address a use, process or operation must be applied to that specific occupancy, such as stages and platforms, special amusement buildings and hazardous materials (Sections 410, 411 and 414).*

It appears that there are "occupancies" associated with "stages and platforms, special amusement buildings and hazardous materials" and yet nothing within these sections refers to the occupancy, nor do the occupancies refer to these "special" provisions. The code is broken and should be fixed. Section 307 includes a large quantity of information on how to control and limit the hazardous materials, but one of the fundamental parts of that decision is what are the control areas within which they are located. Moving those requirements into 307 will simplify the use of the code.

---

**G63-15**

# G64-15

[F] 307.2, 307.6.1 (New), [F] 415.2, [F] 415.1, [F] 415.3, [F] 415.4, [F] 415.5, [F] 415.6, [F] 415.7, [F] 415.8, [F] 415.9, [F] 415.10, [F] 415.11

## Proposed Change as Submitted

**Proponent:** David Collins, representing The American Institute of Architects (dcollins@preview-group.com)

## 2015 International Building Code

Delete and substitute as follows:

### ~~SECTION 415- GROUPS H-1, H-2, H-3, H-4 AND H-5~~

~~[F] 415.2 Definitions. The following terms are defined in Chapter 2:~~

~~CONTINUOUS GAS DETECTION SYSTEM.  
DETACHED BUILDING.  
EMERGENCY CONTROL STATION.  
EXHAUSTED ENCLOSURE.  
FABRICATION AREA.  
FLAMMABLE VAPORS OR FUMES.  
GAS CABINET.  
GASROOM.  
HAZARDOUS PRODUCTION MATERIAL (HPM).  
HPM FLAMMABLE LIQUID.  
HPM ROOM.  
IMMEDIATELY DANGEROUS TO LIFE AND HEALTH (IDLH).  
LIQUID.  
LIQUID STORAGE ROOM.  
LIQUID USE, DISPENSING AND MIXING ROOM.  
LOWER FLAMMABLE LIMIT (LFL).  
NORMAL TEMPERATURE AND PRESSURE (NTP).  
PHYSIOLOGICAL WARNING THRESHOLD LEVEL.  
SERVICE CORRIDOR.  
SOLID.  
STORAGE, HAZARDOUS MATERIALS.  
USE (MATERIAL).  
WORKSTATION.~~

Revise as follows:

~~[F] 415.1~~ **307.1.3 Scope. General provisions of H-1, H-2, H-3, H-4 and H-5 occupancies** The provisions of Sections ~~415.1~~ 307.1.3.1 through ~~415.11~~ 307.1.3.3 shall apply to the Group H occupancy buildings where storage and use of hazardous materials occurs in excess of the maximum allowable quantities per *control area* listed in Section 307.1. Buildings and structures with an occupancy in Group H shall also comply with the

applicable provisions of Section 414 and the *International Fire Code*.  
Specific Group H occupancies shall comply with Sections 307.3, 307.4, 307.5, 307.6 and 307.7 as applicable.

**[F] ~~415.3~~ 307.1.3.1 Automatic fire detection systems.**

*(The text of this section and subsequent sections would be unchanged except provide appropriate charging text and to update section references.)*

**[F] ~~415.4~~ 307.1.3.2 Automatic sprinkler system.**

**[F] ~~415.5~~ 307.1.3.3 Emergency alarms.**

**[F] ~~415.5.1~~ 307.1.3.3.1 Storage.**

**[F] ~~415.5.2~~ 307.1.3.3.2 Dispensing, use and handling.**

**[F] ~~415.5.3~~ 307.1.3.3.3 Supervision.**

**[F] ~~415.5.4~~ 307.1.3.3.4 Emergency alarm systems.**

**[F] ~~415.6~~ 307.1.3.4 Fire separation distance.**

**[F] ~~415.6.1~~ 307.1.3.4.1 Group H occupancy minimum fire separation distance.**

**[F] ~~415.6.1.1~~ 307.1.3.4.1.1 Group H-1.**

**[F] ~~415.6.1.2~~ 307.1.3.4.1.2 Group H-2.**

**[F] ~~415.6.1.3~~ 307.1.3.4.1.3 Groups H-2 and H-3.**

**[F] ~~415.6.1.4~~ 307.1.3.4.1.4 Explosive materials.**

**TABLE [F] ~~415.6.2~~ 307.1.3.4.2  
DETACHED BUILDING REQUIRED**

**[F] ~~415.6.2~~ 307.1.3.4.2 Detached buildings for Group H-1, H-2 or H-3 occupancy.**

**[F] ~~415.6.2.1~~ 307.1.3.4.2.1 Wall and opening protection.**

**[F] 307.2 Definitions.** The following terms are defined in Chapter 2:

**AEROSOL**

Level 1 aerosol products.

Level 2 aerosol products.

Level 3 aerosol products.

**AEROSOL CONTAINER.**

**BALED COTTON.**

**BALED COTTON, DENSELY PACKED.**

**BARRICADE.**

Artificial barricade.

Natural barricade.

**BOILING POINT.**

**CLOSED SYSTEM.**

**COMBUSTIBLE DUST.**

**COMBUSTIBLE FIBERS.**

**COMBUSTIBLE LIQUID.**

Class II.  
Class IIIA.  
Class IIIB.  
**COMPRESSED GAS.**  
**CONTINUOUS GAS DETECTION SYSTEM.**  
**CONTROL AREA.**  
**CORROSIVE.**  
**CRYOGENIC FLUID.**  
**DAY BOX.**  
**DEFLAGRATION.**  
**DETACHED BUILDING.**  
**DETONATION.**  
**DISPENSING.**  
**EMERGENCY CONTROL STATION.**  
**EXHAUSTED ENCLOSURE.**  
**EXPLOSION.**  
**EXPLOSIVE.**  
    High explosive.  
    Low explosive.  
    Mass-detonating explosives.  
    UN/DOtn Class 1 explosives.  
    Division 1.1.  
    Division 1.2.  
    Division 1.3.  
    Division 1.4.  
    Division 1.5.  
    Division 1.6.  
**FABRICATION AREA.**  
**FIREWORKS.**  
    Fireworks, 1.3G.  
    Fireworks, 1.4G.  
**FLAMMABLE GAS.**  
**FLAMMABLE LIQUEFIED GAS.**  
**FLAMMABLE LIQUID.**  
    Class IA.  
    Class IB.  
    Class IC.  
**FLAMMABLE MATERIAL.**  
**FLAMMABLE SOLID.**  
**FLAMMABLE VAPORS OR FUMES.**  
**FLASH POINT.**  
**GAS CABINET.**  
**GASROOM.**  
**HANDLING.**  
**HAZARDOUS MATERIALS.**  
**HAZARDOUS PRODUCTION MATERIAL (HPM).**  
**HEALTH HAZARD.**  
**HIGHLY TOXIC.**  
**HPM FLAMMABLE LIQUID.**  
**HPM ROOM.**  
**IMMEDIATELY DANGEROUS TO LIFE AND HEALTH (IDLH).**  
**INCOMPATIBLE MATERIALS.**  
**INERT GAS.**  
**LIQUID.**

**LIQUID STORAGE ROOM.**  
**LIQUID USE, DISPENSING AND MIXING ROOM.**  
**LOWER FLAMMABLE LIMIT (LFL).**  
**NORMAL TEMPERATURE AND PRESSURE (NTP).**  
**OPEN SYSTEM.**  
**OPERATING BUILDING.**  
**ORGANIC PEROXIDE.**  
    Class I.  
    Class II.  
    Class III.  
    Class IV.  
    Class V.  
    Unclassified detonable.  
**OXIDIZER.**  
    Class 4.  
    Class 3.  
    Class 2.  
    Class 1.  
**OXIDIZING GAS.**  
**PHYSICAL HAZARD.**  
**PHYSIOLOGICAL WARNING THRESHOLD LEVEL.**  
**PYROPHORIC.**  
**PYROTECHNIC COMPOSITION.**  
**SERVICE CORRIDOR.**  
**SOLID.**  
**STORAGE, HAZARDOUS MATERIALS.**  
**TOXIC.**  
**UNSTABLE (REACTIVE) MATERIAL.**  
    Class 4.  
    Class 3.  
    Class 2.  
    Class 1.  
**USE (MATERIAL).**  
**WATER-REACTIVE MATERIAL.**  
    Class 3.  
    Class 2.  
    Class 1.  
**WORKSTATION.**

[F] ~~415.7~~ 307.3.2 Special provisions for Group H-1 occupancies.

[F] ~~415.7.1~~ 307.3.2.1 Floors in storage rooms.

[F] ~~415.8~~ 307.4.1 Special provisions for Group H-2 and H-3 occupancies.

[F] ~~415.8.1~~ 307.4.1.1 Multiple hazards.

[F] ~~415.8.2~~ 307.4.1.2 Separation of incompatible materials.

[F] ~~415.8.3~~ 307.4.1.3 Water reactives.

[F] ~~415.8.4~~ 307.4.1.4 Floors in storage rooms.

[F] ~~415.8.5~~ 307.4.1.5 Waterproof room.

[F] ~~415.9~~ 307.4.2 **Group H-2 occupancy requirements.**

[F] ~~415.9.1~~ 307.4.2.1 **Flammable and combustible liquids.**

[F] ~~415.9.1.1~~ 307.4.2.1.1 **Mixed occupancies.**

[F] ~~415.9.1.1.1~~ 307.4.2.1.1.1 **Height exception.**

[F] ~~415.9.1.2~~ 307.4.2.1.2 **Tank protection.**

[F] ~~415.9.1.3~~ 307.4.2.1.3 **Tanks.**

[F] ~~415.9.1.4~~ 307.4.2.1.4 **Leakage containment.**

[F] ~~415.9.1.5~~ 307.4.2.1.5 **Leakage alarm.**

[F] ~~415.9.1.6~~ 307.4.2.1.6 **Tank vent.**

[F] ~~415.9.1.7~~ 307.4.2.1.7 **Room ventilation.**

[F] ~~415.9.1.8~~ 307.4.2.1.8 **Explosion venting.**

[F] ~~415.9.1.9~~ 307.4.2.1.9 **Tank openings other than vents.**

[F] ~~415.9.2~~ 307.4.2.2 **Liquefied petroleum gas facilities.**

[F] ~~415.9.3~~ 307.4.2.3 **Dry cleaning plants.**

[F] ~~415.10~~ 307.5 **Groups H-3 and H-4.** Group H-3 occupancies shall be constructed in accordance with Section 307.4.1. Groups H-3 and H-4 shall be constructed in accordance with the applicable provisions of this ~~code~~ section and the *International Fire Code*.

[F] ~~415.10.1~~ 307.5.1 **Flammable and combustible liquids.**

[F] ~~415.10.2~~ 307.5.2 **Gas rooms.**

[F] ~~415.10.3~~ 307.5.3 **Floors in storage rooms.**

[F] ~~415.10.4~~ 307.5.4 **Separation-highly toxic solids and liquids.**

**Add new text as follows:**

**307.6.1 Provisions of H-4 occupancies** Group H-4 occupancies shall be constructed in accordance with Section 308.5.1

**Revise as follows:**

[F] ~~415.11~~ 307.7.1 **Group H-5.** In addition to the requirements set forth elsewhere in this code, Group H-5 shall comply with the provisions of Sections ~~415.11.1~~ 307.7.1.1 through ~~415.11.11~~ 307.7.1.11 and the *International Fire Code*.

[F] ~~415.11.1~~ 307.7.1.1 **Fabrication areas.**

[F] ~~415.11.1.1~~ 307.7.1.1.1 **Hazardous materials.**

[F] ~~415.11.1.1.1~~ 307.7.1.1.1.1 **Aggregate quantities.**

**TABLE [F] ~~415.11.1.1.1~~ 307.7.1.1.1.1**

**QUANTITY LIMITS FOR HAZARDOUS MATERIALS IN A SINGLE  
FABRICATION AREA IN GROUP H-5<sup>a</sup>**

- [F] ~~415.11.1.1.2~~ 307.7.1.1.1.2 Hazardous production materials.
- [F] ~~415.11.1.2~~ 307.7.1.1.2 Separation.
- [F] ~~415.11.1.3~~ 307.7.1.1.3 Location of occupied levels.
- [F] ~~415.11.1.4~~ 307.7.1.1.4 Floors.
- [F] ~~415.11.1.5~~ 307.7.1.1.5 Shafts and openings through floors.
- [F] ~~415.11.1.6~~ 307.7.1.1.6 Ventilation.
- [F] ~~415.11.1.7~~ 307.7.1.1.7 Transporting hazardous production materials to fabrication areas.
- [F] ~~415.11.1.8~~ 307.7.1.1.8 Electrical.
- [F] ~~415.11.1.8.1~~ 307.7.1.1.8.1 Workstations.
- [F] ~~415.11.2~~ 307.7.1.2 Corridors.
- [F] ~~415.11.3~~ 307.7.1.3 Service corridors.
- [F] ~~415.11.3.1~~ 307.7.1.3.1 Use conditions.
- [F] ~~415.11.3.2~~ 307.7.1.3.2 Mechanical ventilation.
- [F] ~~415.11.3.3~~ 307.7.1.3.3 Means of egress.
- [F] ~~415.11.3.4~~ 307.7.1.3.4 Minimum width.
- [F] ~~415.11.3.5~~ 307.7.1.3.5 Emergency alarm system. .
- [F] ~~415.11.3.5.1~~ 307.7.1.3.5.1 Service corridors.
- [F] ~~415.11.3.5.2~~ 307.7.1.3.5.2 Corridors and interior exit stairways and ramps.
- [F] ~~415.11.3.5.3~~ 307.7.1.3.5.3 Liquid storage rooms, HPM rooms and gas rooms. .
- [F] ~~415.11.3.5.4~~ 307.7.1.3.5.4 Alarm-initiating devices.
- [F] ~~415.11.3.5.5~~ 307.7.1.3.5.5 Alarm signals.
- [F] ~~415.11.4~~ 307.7.1.4 Storage of hazardous production materials.
- [F] ~~415.11.5~~ 307.7.1.5 HPM rooms, gas rooms, liquid storage room construction.
- [F] ~~415.11.5.1~~ 307.7.1.5.1 HPM rooms and gas rooms.
- [F] ~~415.11.5.2~~ 307.7.1.5.2 Liquid storage rooms.
- [F] ~~415.11.5.3~~ 307.7.1.5.3 Floors.
- [F] ~~415.11.5.4~~ 307.7.1.5.4 Location.

- [F] ~~415.11.5.5~~ 307.7.1.5.5 Explosion control.
- [F] ~~415.11.5.6~~ 307.7.1.5.6 Exits..
- [F] ~~415.11.5.7~~ 307.7.1.5.7 Doors.
- [F] ~~415.11.5.8~~ 307.7.1.5.8 Ventilation.
- [F] ~~415.11.5.9~~ 307.7.1.5.9 Emergency alarm system.
- [F] ~~415.11.6~~ 307.7.1.6 Piping and tubing.
- [F] ~~415.11.6.1~~ 307.7.1.6.1 HPM having a health-hazard ranking of 3 or 4. .
- [F] ~~415.11.6.2~~ 307.7.1.6.2 Location in service corridors.
- [F] ~~415.11.6.3~~ 307.7.1.6.3 Excess flow control.
- [F] ~~415.11.6.4~~ 307.7.1.6.4 Installations in corridors and above other occupancies.
- [F] ~~415.11.6.5~~ 307.7.1.6.5 Identification.
- [F] ~~415.11.7~~ 307.7.1.7 Continuous gas detection systems.
- [F] ~~415.11.7.1~~ 307.7.1.7.1 Where required.
- [F] ~~415.11.7.1.1~~ 307.7.1.7.1.1 Fabrication areas.
- [F] ~~415.11.7.1.2~~ 307.7.1.7.1.2 HPM rooms.
- [F] ~~415.11.7.1.3~~ 307.7.1.7.1.3 Gas cabinets, exhausted enclosures and gas rooms.
- [F] ~~415.11.7.1.4~~ 307.7.1.7.1.4 Corridors.
- [F] ~~415.11.7.2~~ 307.7.1.7.2 Gas detection system operation.
- [F] ~~415.11.7.2.1~~ 307.7.1.7.2.1 Alarms.
- [F] ~~415.11.7.2.2~~ 307.7.1.7.2.2 Shutoff of gas supply.
- [F] ~~415.11.8~~ 307.7.1.8 Manual fire alarm system.
- [F] ~~415.11.9~~ 307.7.1.9 Emergency control station.
- [F] ~~415.11.9.1~~ 307.7.1.9.1 Location.
- [F] ~~415.11.9.2~~ 307.7.1.9.2 Staffing.
- [F] ~~415.11.9.3~~ 307.7.1.9.3 Signals.
- [F] ~~415.11.10~~ 307.7.1.10 Emergency power system.
- [F] ~~415.11.10.1~~ 307.7.1.10.1 Required electrical systems.
- [F] ~~415.11.10.2~~ 307.7.1.10.2 Exhaust ventilation systems.
- [F] ~~415.11.11~~ 307.7.1.11 Automatic sprinkler system protection in exhaust ducts for HPM.
- [F] ~~415.11.11.1~~ 307.7.1.11.1 Metallic and noncombustible nonmetallic exhaust ducts.

**[F] ~~415.11.11.2~~ 307.7.1.11.2 Combustible nonmetallic exhaust ducts.**

**[F] ~~415.11.11.3~~ 307.7.1.11.3 Automatic sprinkler locations.**

**Reason:** Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features. Provisions of the code for manufacturing, processing, dispensing, use or storage are being moved to the occupancy sections which include the criteria for these conditions and will provide a single location for users to find the requirements for this condition.

**Cost Impact:** Will not increase the cost of construction. Because the technical provisions of the code are not being changed, but simply moved, there is no impact on the cost of construction.

G64-15 : [F] 415.10.4-COLLINS5973

---

**Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** This is one of a series of proposals (G49-15 through G75-15) which would systematically relocate all provisions of Chapter 4 of the IBC to another location in the code. The proponent of these changes would locate current Chapter 4 provisions with other code requirements that they are a logical extension. A primary argument by the proponent for the relocation Chapter 4 provisions is to make these various provisions more easily found during the design process. He believes that their location in Chapter 4 results in them being either overlooked or found late in the design process and requiring substantial modifications to a design. The committee in disapproving the series of changes concluded that Chapter 4 provides a convenient location for specialized use and design provisions. It allows designers to start in one location to find unique requirements of a use or building feature before proceeding through the rest of the code to determine allowed height, area, construction types, and fire protection requirements found in those specific topic chapters. Contrary to the reason provided by the proponent, the committee felt that Chapter 4 isn't an afterthought in the design process, but is a convenient first stop for specialized requirements. Moving all the provisions of Chapter 4 to other chapters would make other chapters more confusing by adding one or more specialized sets of requirements in the midst of chapters that are relatively straight forward in addressing their topics. There was concern that unique and key provisions found in Chapter 4 could be lost and overlooked if moved to other code locations.

Although none of the series of proposals was approved, some individual proposals found more support than others. While the committee did not support complete elimination of Chapter 4, a case for relocating some provisions was made by a larger minority of the committee. This section addresses hazardous material related occupancies. There was support moving this to Chapter 3 with other occupancy driven requirements.

**Assembly Action :**

**None**

---

**Individual Consideration Agenda**

## *Public Comment 1:*

**Proponent : David Collins, representing The American Institute of Architects (dcollins@preview-group.com) requests Approve as Submitted.**

**Commenter's Reason:** his is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the requirements for hazardous materials that include requirements for alarms and suppression, storage, dispensing, supervision, fire separation, etc. are simply referenced in Section 307.1 stating:

*Hazardous occupancies are classified in Groups H-1, H-2, H-3, H-4 and H-5 and shall be in accordance with this section, the requirements of Section 415 and the International Fire Code.*

While the Code Change Committee rejected this proposal, there was support for this change as it is occupancy specific and the requirements should relate closely to the scoping provisions in Chapter 3 for the occupancy classification for high-hazrd occupancies. We believe that much confusion and failure to understand how the code intends to be applied to hazardous materials can be eliminated by placing the provisions in Section 415 in Section 307.

The code is broken and should be fixed. Section 307 includes a large quantity of information on how to control and limit the hazardous materials, but one of the fundamental parts of that decision is what are the control areas within which they are located. Moving those requirements into 307 will simplify the use of the code.

---

**G64-15**

# G65-15

416, [F] 416.1, [F] 416.2, [F] 416.2.1, [F] 416.2.2, [F] 416.3, [F] 416.3.1, [F] 416.4, [F] 416.5

## Proposed Change as Submitted

**Proponent :** David Collins, representing The American Institute of Architects (dcollins@preview-group.com)

## 2015 International Building Code

Delete without substitution:

### ~~SECTION 416 APPLICATION OF FLAMMABLE FINISHES~~

Revise as follows:

**[F] ~~416.1~~ 307.1.3 ~~General.~~ Application of flammable finishes** The provisions of this section shall apply to the construction, installation and use of buildings and structures, or parts thereof, for the application of flammable finishes. Such construction and equipment shall comply with the *International Fire Code*.

**[F] ~~416.2~~ 307.1.3.1 ~~Spray rooms.~~**

*(The text of this section and subsequent sections would be unchanged except to update section references.)*

**[F] ~~416.2.1~~ 307.1.3.1.1 ~~Surfaces.~~**

**[F] ~~416.2.2~~ 307.1.3.1.2 ~~Ventilation.~~**

**[F] ~~416.3~~ 307.1.3.2 ~~Spraying spaces.~~**

**[F] ~~416.3.1~~ 307.1.3.2.1 ~~Surfaces.~~**

**[F] ~~416.4~~ 307.1.3.3 ~~Spray booths.~~**

**[F] ~~416.5~~ 307.1.3.4 ~~Fire protection.~~**

**Reason:** Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features.

Flammable finishes are specifically part of the hazardous materials requirements and with this change are moved to Section 307 where all the criteria are located for identifying such materials. With this change once the code user is clear that the materials are hazardous, the requirements will be located in the same section making it clear what is necessary as a result.

**Cost Impact:** Will not increase the cost of construction

Because there are no changes to the technical requirements of the code for the spray applications of flammable materials, there will be no change in the cost of

---

## **Public Hearing Results**

### **Committee Action:**

**Disapproved**

**Committee Reason:** This is one of a series of proposals (G49-15 through G75-15) which would systematically relocate all provisions of Chapter 4 of the IBC to another location in the code. The proponent of these changes would locate current Chapter 4 provisions with other code requirements that they are a logical extension. A primary argument by the proponent for the relocation Chapter 4 provisions is to make these various provisions more easily found during the design process. He believes that their location in Chapter 4 results in them being either overlooked or found late in the design process and requiring substantial modifications to a design. The committee in disapproving the series of changes concluded that Chapter 4 provides a convenient location for specialized use and design provisions. It allows designers to start in one location to find unique requirements of a use or building feature before proceeding through the rest of the code to determine allowed height, area, construction types, and fire protection requirements found in those specific topic chapters. Contrary to the reason provided by the proponent, the committee felt that Chapter 4 isn't an afterthought in the design process, but is a convenient first stop for specialized requirements. Moving all the provisions of Chapter 4 to other chapters would make other chapters more confusing by adding one or more specialized sets of requirements in the midst of chapters that are relatively straight forward in addressing their topics. There was concern that unique and key provisions found in Chapter 4 could be lost and overlooked if moved to other code locations.

Although none of the series of proposals was approved, some individual proposals found more support than others. While the committee did not support complete elimination of Chapter 4, a case for relocating some provisions was made by a larger minority of the committee.

### **Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### ***Public Comment 1:***

**Proponent : David Collins, representing The American Institute of Architects (dcollins@preview-group.com) requests Approve as Submitted.**

**Commenter's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the requirements for hazardous materials that include requirements for specific application of finishes, ventilation, spray booths and fire protection are only referenced in Section 307.1 stating:

*An occupancy that stores, uses or handles hazardous materials as described in one or more of the following items shall not be classified as Group H, but shall be classified as the occupancy that it most nearly resembles.*

*1. Buildings and structures occupied for the application of flammable finishes, provided that such buildings or areas conform to the requirements of Section 416 and the International Fire Code.*

While the Code Change Committee rejected this proposal, there was support for this

change as it is occupancy specific and the requirements should relate closely to the scoping provisions in Chapter 3 for the occupancy classification for high-hazrd occupancies. We believe that much confusion and failure to understand how the code intends to be applied to hazardous materials can be eliminated by placing the provisions in Section 416 in Section 307.

---

**G65-15**

# G66-15

417, [F] 417.1, [F] 417.2, [F] 417.3, [F] 417.4

## Proposed Change as Submitted

**Proponent :** David Collins, representing The American Institute of Architects (dcollins@preview-group.com)

### 2015 International Building Code

Delete without substitution:

#### ~~SECTION 417- DRYING ROOMS~~

-

Revise as follows:

~~[F] 417.1~~ **307.6.2.1 General. Drying rooms** A drying room or dry kiln installed within a building shall be constructed entirely of *approved* noncombustible materials or assemblies of such materials regulated by the *approved* rules or as required in the general and specific sections of this chapter for special occupancies and where applicable to the general requirements of the *International Mechanical Code*.

~~[F] 417.2~~ **307.6.2.1.1 Piping clearance.**

*(The text of this section and subsequent sections would be unchanged except to update section references.)*

~~[F] 417.3~~ **307.6.2.1.2 Insulation.**

~~[F] 417.4~~ **307.6.2.1.3 Fire protection.**

**Reason:** Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features.

Drying rooms often involve the use of materials with hazardous characteristics and must be addressed by their classification as such and the quantities of such materials when they exceed the exempt quantities. By moving the provisions from Chapter 4 to the hazardous materials classifications, the code user will better understand the link with these provisions.

**Cost Impact:** Will not increase the cost of construction

Because there is no technical change to the code requirements, there will be no increase in the cost of construction.

G66-15 : [F] 417-  
COLLINS4820

---

## Public Hearing Results

**Committee Action:****Disapproved**

**Committee Reason:** This is one of a series of proposals (G49-15 through G75-15) which would systematically relocate all provisions of Chapter 4 of the IBC to another location in the code. The proponent of these changes would locate current Chapter 4 provisions with other code requirements that they are a logical extension. A primary argument by the proponent for the relocation Chapter 4 provisions is to make these various provisions more easily found during the design process. He believes that their location in Chapter 4 results in them being either overlooked or found late in the design process and requiring substantial modifications to a design. The committee in disapproving the series of changes concluded that Chapter 4 provides a convenient location for specialized use and design provisions. It allows designers to start in one location to find unique requirements of a use or building feature before proceeding through the rest of the code to determine allowed height, area, construction types, and fire protection requirements found in those specific topic chapters. Contrary to the reason provided by the proponent, the committee felt that Chapter 4 isn't an afterthought in the design process, but is a convenient first stop for specialized requirements. Moving all the provisions of Chapter 4 to other chapters would make other chapters more confusing by adding one or more specialized sets of requirements in the midst of chapters that are relatively straight forward in addressing their topics. There was concern that unique and key provisions found in Chapter 4 could be lost and overlooked if moved to other code locations.

Although none of the series of proposals was approved, some individual proposals found more support than others. While the committee did not support complete elimination of Chapter 4, a case for relocating some provisions was made by a larger minority of the committee. This is repeating provisions in Mechanical code and may not need to be in the IBC at all.

**Assembly Action :****None****Individual Consideration Agenda*****Public Comment 1:***

**Proponent : David Collins, the Preview Group, representing The American Institute of Architects ([\[email protected\]](#))**

**)**

**requests Approve as Submitted.**

**Commenter's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the requirements for a drying room or dry kiln that include requirements for such rooms are not referenced anywhere in the building code. While the Code Change Committee rejected this proposal, there was support for this change as it is occupancy specific and the requirements should relate closely to the scoping provisions in Chapter 3 for the occupancy classification for high-hazard occupancies. We believe that much confusion and failure to understand how the code intends to be applied to the hazards associated with these devices can be eliminated by placing the provisions in Section 417 in Section 307.

**G66-15**

# G67-15

418, [F]307.1.3 (New), [F] 418.1, [F] 418.2, [F] 418.3, [F] 418.4, [F] 418.5, [F] 418.6

## Proposed Change as Submitted

Proponent: David Collins, representing The American Institute of Architects (dcollins@preview-group.com)

### 2015 International Building Code

Delete and substitute as follows:

#### ~~SECTION 418~~ ~~ORGANIC COATINGS~~

Add new text as follows:

[F]307.1.3 Organic coatings. Manufacturing of organic coatings shall be done only in buildings in compliance with Sections 307.1.3.1 through 307.1.3.6.

Revise as follows:

~~[F] 418.1~~ 307.1.3.1 Building features.

*(The text of this section and subsequent sections would be unchanged except to update section references.)*

~~[F] 418.2~~ 307.1.3.2 Location.

~~[F] 418.3~~ 307.1.3.3 Process mills.

~~[F] 418.4~~ 307.1.3.4 Tank storage.

~~[F] 418.5~~ 307.1.3.5 Nitrocellulose storage.

~~[F] 418.6~~ 307.1.3.6 Finished products.

**Reason:** Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features.

Organic coatings are specifically part of the hazardous materials requirements and with this change are moved to Section 307 where all the criteria are located for identifying such materials. With this change once the code user is clear that the materials are hazardous, the requirements will be located in the same section making it clear what is necessary as a result.

**Cost Impact:** Will not increase the cost of construction

Because there are not changes to the technical requirements of the code for organic coatings, there will be no change in the cost of construction as a result of this

---

## **Public Hearing Results**

**Committee Action:****Disapproved**

**Committee Reason:** This is one of a series of proposals (G49-15 through G75-15) which would systematically relocate all provisions of Chapter 4 of the IBC to another location in the code. The proponent of these changes would locate current Chapter 4 provisions with other code requirements that they are a logical extension. A primary argument by the proponent for the relocation Chapter 4 provisions is to make these various provisions more easily found during the design process. He believes that their location in Chapter 4 results in them being either overlooked or found late in the design process and requiring substantial modifications to a design. The committee in disapproving the series of changes concluded that Chapter 4 provides a convenient location for specialized use and design provisions. It allows designers to start in one location to find unique requirements of a use or building feature before proceeding through the rest of the code to determine allowed height, area, construction types, and fire protection requirements found in those specific topic chapters. Contrary to the reason provided by the proponent, the committee felt that Chapter 4 isn't an afterthought in the design process, but is a convenient first stop for specialized requirements. Moving all the provisions of Chapter 4 to other chapters would make other chapters more confusing by adding one or more specialized sets of requirements in the midst of chapters that are relatively straight forward in addressing their topics. There was concern that unique and key provisions found in Chapter 4 could be lost and overlooked if moved to other code locations.

Although none of the series of proposals was approved, some individual proposals found more support than others. While the committee did not support complete elimination of Chapter 4, a case for relocating some provisions was made by a larger minority of the committee.

**Assembly Action :****None**


---

## **Individual Consideration Agenda**

**Public Comment 1:**

**Proponent : David Collins, the Preview Group, representing The American Institute of Architects ([\[email protected\]](#))**

)

**requests Approve as Submitted.**

**Commenter's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the requirements for organic coatings that include requirements for pits and basements, mixed occupancies, processing, tank storage, etc. are not referenced in the *IBC*. Many of the characteristics associated with organic coatings parallel hazardous, it isn't clear what is the appropriate classification; H or F.

While the Code Change Committee rejected this proposal, there was support for this change as it is occupancy specific and the requirements should relate closely to the scoping provisions in Chapter 3 for the occupancy classification for high-hazard

occupancies. We believe that much confusion and failure to understand how the code intends to be applied to hazardous conditions can be eliminated by placing the provisions in Section 418 in Section 307.

---

**G67-15**

# G68-15

419, 419.1, 419.1.1, 419.2, 419.3, 419.3.1, 419.3.2, 419.4, [F] 419.5, 419.6, 419.7, 419.8, 419.9

## Proposed Change as Submitted

**Proponent :** David Collins, representing The American Institute of Architects (dcollins@preview-group.com)

### 2015 International Building Code

Delete without substitution:

#### ~~SECTION 419- LIVE/WORK UNITS~~

Revise as follows:

**419.1 510.10 General Live/Work units.** A *live/work unit* shall comply with Sections ~~419.1~~ 510.10.1 through ~~419.9~~ 510.10.9.

**Exception:** Dwelling or sleeping units that include an office that is less than 10 percent of the area of the *dwelling unit* are permitted to be classified as *dwelling units* with accessory occupancies in accordance with Section 508.2.

**~~419.1.1~~ 510.10.1 Limitations.**

(The text of this section and subsequent sections would be unchanged except to update section references.)

**~~419.2~~ 510.10.2 Occupancies.**

**~~419.3~~ 510.10.3 Means of egress.**

**~~419.3.1~~ 510.10.3.1 Egress capacity.**

**~~419.3.2~~ 510.10.3.2 Spiral stairways.**

**~~419.4~~ 510.10.4 Vertical openings. .**

**[F] ~~419.5~~ 510.10.5 Fire protection.**

**~~419.6~~ 510.10.6 Structural.**

**~~419.7~~ 510.10.7 Accessibility. .**

**~~419.8~~ 510.10.8 Ventilation.**

**~~419.9~~ 510.10.9 Plumbing facilities.**

**Reason:** Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features.

Live/work units, which perhaps a special subclassification of residential occupancy is in fact at part of the special provisions in Chapter 5 for mixed uses that are not separated. Section 510 is titled special provisions and is where the live/work provisions should also be found.

**Cost Impact:** Will not increase the cost of construction

No technical changes are made to the requirements for live/work and will not change how the code applies and will cause no increase in cost of construction.

G68-15 : 419.1-  
COLLINS4822

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** This is one of a series of proposals (G49-15 through G75-15) which would systematically relocate all provisions of Chapter 4 of the IBC to another location in the code. The proponent of these changes would locate current Chapter 4 provisions with other code requirements that they are a logical extension. A primary argument by the proponent for the relocation Chapter 4 provisions is to make these various provisions more easily found during the design process. He believes that their location in Chapter 4 results in them being either overlooked or found late in the process and requiring substantial modifications to a design. The committee in disapproving the series of changes concluded that Chapter 4 provides a convenient location for specialized use and design provisions. It allows designers to start in one location to find unique requirements a use or building feature before proceeding through the rest of the code to determine allowed height, area, construction types, and fire protection requirements found in those specific topic chapters. Contrary to the reason provided by the proponent, the committee felt that Chapter 4 isn't an afterthought in the design process, but is a convenient first stop for specialized requirements. Moving all the provisions of Chapter 4 to other chapters would make other chapters more confusing by adding one or specialized set of requirements in the midst of chapters that are relatively straight forward in addressing their topics. There was concern that unique and key provisions found in Chapter 4 could be lost and overlooked if moved to other code locations.

Although none of the series of proposals was approved, some individual proposals found more support than others. While the committee did not support complete elimination of Chapter 4, a case for relocating some provisions was made by a larger minority of the committee. This proposal was addressing live/work units. The proponent made the case that live/work units are simply a specialized set of mixed occupancy requirements. Mixed occupancies are generally addressed in Section 508 with specialized designs contained in Section 510. Consistent with previous actions in the series, the committee chose to retain the Chapter 4 location.

**Assembly Motion:**

**As Submitted**

**Online Vote Results:**

**Failed**

Support: 10.47% (36) Oppose: 89.53% (308)

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : David Collins, the Preview Group, representing The American Institute of Architects ([\[email protected\]](#))**

)

**requests Approve as Submitted.**

**Commenter's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the requirements for live-work units that include requirements for the means of egress, vertical openings fire suppression, accessibility, plumbing fixtures, etc.

While the Code Change Committee rejected this proposal, there was support for this change as it is occupancy specific and the requirements should relate closely to the exceptions for mixed use provisions in the code. We believe that much confusion and failure to understand how the code intends to be applied to hazardous materials can be eliminated by placing the provisions in Section 419 in Section 510. Section 510 includes similar exceptions for horizontal separation, S-2 garages associated with other occupancies, R-1 and R-2 buildings and their type of construction and multiple buildings over a platform. Live-work units share many of the same interaction as these conditions that are covered in Section 510 for "special provisions" associated with height and area.

---

G68-15

# G69-15

308.3.5 (New), 308.3.6 (New), 308.3.7 (New), 308.3.8 (New), 308.3.8.1 (New), 310.3 (New), 310.4 (New), 310.5 (New), 420, 420.1, 420.2, 420.3, 420.4, 420.4.1, [F] 420.5, [F] 420.6

## Proposed Change as Submitted

**Proponent :** David Collins, representing The American Institute of Architects (dcollins@preview-group.com)

### 2015 International Building Code

Delete and substitute as follows:

#### ~~SECTION 420- GROUPS I-1, R-1, R-2, R-3 AND R-4~~

~~**420.1 General.** Occupancies in Groups I-1, R-1, R-2, R-3 and R-4 shall comply with the provisions of Sections 420.1 through 420.6 and other applicable provisions of this code.~~

~~**420.2 Separation walls.** Walls separating *dwelling units* in the same building, walls separating *sleeping units* in the same building and walls separating *dwelling or sleeping units* from other occupancies contiguous to them in the same building shall be constructed as *fire partitions* in accordance with Section 708.~~

~~**420.3 Horizontal separation.** Floor assemblies separating *dwelling units* in the same buildings, floor assemblies separating *sleeping units* in the same building and floor assemblies separating *dwelling or sleeping units* from other occupancies contiguous to them in the same building shall be constructed as *horizontal assemblies* in accordance with Section 711.~~

~~**420.4 Smoke barriers in Group I-1, Condition 2.** Smoke barriers shall be provided in Group I-1, Condition 2, to subdivide every story used by persons receiving care, treatment or sleeping and to provide other stories with an occupant load of 50 or more persons, into no fewer than two smoke compartments  
. Such stories shall be divided into smoke compartments with an area of not more than 22,500 square feet (2092 m<sup>2</sup>) and the distance of travel from any point in a smoke compartment to a smoke barrier door shall not exceed 200 feet (60 960 mm). The smoke barrier shall be in accordance with Section 709.~~

~~**420.4.1 Refuge area.** Refuge areas shall be provided within each smoke compartment. The size of the refuge area shall accommodate the occupants and care recipients from the adjoining smoke compartment. Where a smoke compartment is adjoined by two or more smoke compartments, the minimum area of the refuge area shall accommodate the largest occupant load of the adjoining compartments. The size of the refuge area shall provide the following:~~

- ~~1. Not less than 15 net square feet (1.4 m<sup>2</sup>) for each care recipient.~~

2. ~~Not less than 6 net square feet (0.56 m<sup>2</sup>) for other occupants.~~

~~Areas or spaces permitted to be included in the calculation of the refuge area are corridors, lounge or dining areas and other low hazard areas.~~

~~**[F] 420.5 Automatic sprinkler system.** Group R occupancies shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.2.8. Group I-1 occupancies shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.2.6. Quickresponse or residential automatic sprinklers shall be installed in accordance with Section 903.3.2.~~

~~**[F] 420.6 Fire alarm systems and smoke alarms.** Fire alarm systems and smoke alarms shall be provided in Group I-1, R-1, R-2 and R-4 occupancies in accordance with Sections 907.2.6, 907.2.8, 907.2.9 and 907.2.10, respectively. Single or multiple station smoke alarms shall be provided in Groups I-1, R-2, R-3 and R-4 in accordance with Section 907.2.11.~~

**Add new text as follows:**

**308.3.5 Separation walls and horizontal assemblies.** Walls or floor assemblies separating I-1 dwelling units in the same building, walls separating I-1 sleeping units in the same building and walls separating I-1 dwelling or sleeping units from other occupancies contiguous to them in the same building shall be constructed as fire partitions in accordance with Section 708 and horizontal assemblies in accordance with Section 711.

**308.3.6 Automatic sprinkler system** Group I-1 occupancies shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.2.6. Quickresponse or residential automatic sprinklers shall be installed in accordance with Section 903.3.2.

**308.3.7 Fire alarm systems and smoke alarms** 308.3.7 Fire alarm systems and smoke alarms shall be provided in Group I-1 occupancies in accordance with Sections 907.2.6.1. Single or multiple-station smoke alarms shall be provided in Groups I-1 in accordance with Section 907.2.11.2.

**308.3.8 Smoke barriers in Group I-1, Condition 2** Smoke barriers shall be provided in Group I-1, Condition 2, to subdivide every story used by persons receiving care, treatment or sleeping and to provide other stories with an occupant load of 50 or more persons, into no fewer than two smoke compartments.

Such stories shall be divided into smoke compartments with an area of not more than 22,500 square feet (2092 m<sup>2</sup>) and the distance of travel from any point in a smoke compartment to a smoke barrier door shall not exceed 200 feet (60 960 mm). The smoke barrier shall be in accordance with Section 709.

**308.3.8.1 Refuge area** Refuge areas shall be provided within each smoke compartment. The size of the refuge area shall accommodate the occupants and care recipients from the adjoining smoke compartment. Where a smoke compartment is adjoined by two or more smoke compartments, the minimum area of the refuge area shall accommodate the largest occupant load of the adjoining compartments. The size of the

refuge area shall provide the following:

1. Not less than 15 net square feet (1.4 m<sup>2</sup>) for each care recipient.
2. Not less than 6 net square feet (0.56 m<sup>2</sup>) for other occupants.

Areas or spaces permitted to be included in the calculation of the refuge area are corridors, lounge or dining areas and other low-hazard areas.

**310.3 Separation walls and horizontal assemblies** Walls or floor assemblies separating R-1 dwelling units in the same building, walls separating R-1, R-2, R-3 and R-4 sleeping units in the same building and walls separating R-1, R-2, R-3 and R-4 dwelling or sleeping units from other occupancies contiguous to them in the same building shall be constructed as fire partitions in accordance with Section 708 and horizontal assemblies in accordance with Section 711.

**310.4 Automatic sprinkler system** Group R-1, R-2, R-3 and R-4 occupancies shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.2.8. Quickresponse or residential automatic sprinklers shall be installed in accordance with Section 903.3.2.

**310.5 Fire alarm systems and smoke alarms** Fire alarm systems and smoke alarms shall be provided in Group R-1, R-2 and R-4 occupancies in accordance with Sections 907.2.8, 907.2.9 and 907.2.11 respectively. Single or multiple-station smoke alarms shall be provided in Groups R-2, R-3 and R-4 in accordance with Section 907.2.11.

**Reason:** Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features.

I-1, R-1, R-2, R-3 and R-4 have similarities but differences as well and putting them all in one section can be confusing. This change moves them into two parts of Chapter 3 where the I-1 Group is classified and the provisions for compartments are more appropriately identified. The R occupancies are moved into the R Group where the requirements for separation are more easily found and applied appropriately.

**Cost Impact:** Will not increase the cost of construction

No technical changes are made by this code, simply moving provisions from one part of the code to another, not increasing the cost of construction.

G69-15 : 420-  
COLLINS4823

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** This is one of a series of proposals (G49-15 through G75-15) which would systematically relocate all provisions of Chapter 4 of the IBC to another

location in the code. The proponent of these changes would locate current Chapter 4 provisions with other code requirements that they are a logical extension. A primary argument by the proponent for the relocation Chapter 4 provisions is to make these various provisions more easily found during the design process. He believes that their location in Chapter 4 results in them being either overlooked or found late in the process and requiring substantial modifications to a design. The committee in disapproving the series of changes concluded that Chapter 4 provides a convenient location for specialized use and design provisions. It allows designers to start in one location to find unique requirements a use or building feature before proceeding through the rest of the code to determine allowed height, area, construction types, and fire protection requirements found in those specific topic chapters. Contrary to the reason provided by the proponent, the committee felt that Chapter 4 isn't an afterthought in the design process, but is a convenient first stop for specialized requirements. Moving all the provisions of Chapter 4 to other chapters would make other chapters more confusing by adding one or specialized set of requirements in the midst of chapters that are relatively straight forward in addressing their topics. There was concern that unique and key provisions found in Chapter 4 could be lost and overlooked if moved to other code locations.

Although none of the series of proposals was approved, some individual proposals found more support than others. While the committee did not support complete elimination of Chapter 4, a case for relocating some provisions was made by a larger minority of the committee on this item. This proposal was addressing Section 420 which address specific requirements which are clearly based on the specific occupancies listed. The proponent made the case occupancy driven requirements should be found in Chapter 3 with the listing of the occupancy. Consistent with previous actions in the series, the committee choose to retain the Chapter 4 location.

**Assembly Motion:**

**As Submitted**

**Online Vote Results:**

**Failed**

Support: 12.28% (42) Oppose: 87.72% (300)

**Assembly Action :**

**None**

---

**Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : David Collins, the Preview Group, representing The American Institute of Architects ([\[email protected\]](#))**

**) requests Approve as Submitted.**

**Commenter's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the requirements for institutional and residential occupancies that include requirements for specific application and required separations, alarms and detection devices, fire and smoke barriers, special egress, etc. are only referenced in Section 508.2.4 stating:

*508.2.4 Separation of occupancies.*

*No separation is required between accessory occupancies and the main occupancy.*

*Exceptions:*

*1. Group H-2, H-3, H-4 and H-5 occupancies shall be separated from all other occupancies in accordance with Section 508.4.*

*2. Group I-1, R-1, R-2 and R-3 dwelling units and sleeping units shall be separated from other dwelling or sleeping units and from accessory occupancies contiguous to them in accordance with the requirements of Section 420.*

Similarly a reference is found in Section 508 regarding mixed use and occupancy for required separation is Table 508.4.

*a See Section 420.*

While the Code Change Committee rejected this proposal, there was support for this change as it is occupancy specific and the requirements should relate closely to the scoping provisions in Chapter 3 for the occupancy classification for institutional occupancies. We believe that much confusion and failure to understand how the code intends to be applied to hazardous materials can be eliminated by placing the provisions in Section 416 in Sections 308 for institutional and 310 for residential.

---

**G69-15**

# G70-15

421, [F] 421.1, [F] 421.2, [F] 421.3, [F] 421.4, [F] 421.4.1, [F] 421.4.2, [F] 421.5, [F] 421.6, [F] 421.6.1, [F] 421.6.2, [F] 421.6.3, [F] 421.6.4, [F] 421.7, [F] 421.8

## **Proposed Change as Submitted**

**Proponent :** David Collins, representing The American Institute of Architects (dcollins@preview-group.com)

### **2015 International Building Code**

**Delete without substitution:**

#### **~~SECTION 421-~~ ~~HYDROGEN FUEL GAS ROOMS~~**

**Revise as follows:**

**[F] ~~421.1~~ 509.5 ~~General~~ Hydrogen fuel gas rooms.** Where required by the *International Fire Code*, hydrogen fuel gas rooms shall be designed and constructed in accordance with Sections ~~421.1~~ 509.5.1 through ~~421.7~~ 509.5.7.

**[F] ~~421.2~~ 509.5.1 Definitions.**

*(The text of this section and subsequent sections would be unchanged except to update section references.)*

**[F] ~~421.3~~ 509.5.2 Location.**

**[F] ~~421.4~~ 509.5.3 Design and construction.**

**[F] ~~421.4.1~~ 509.5.3.1 Pressure control.**

**[F] ~~421.4.2~~ 509.5.3.2 Windows.**

**[F] ~~421.5~~ 509.5.4 Exhaust ventilation.**

**[F] ~~421.6~~ 509.5.5 Gas detection system.**

**[F] ~~421.6.1~~ 509.5.5.1 System design.**

**[F] ~~421.6.2~~ 509.5.5.2 Gas detection system components.**

**[F] ~~421.6.3~~ 509.5.5.3 Operation.**

**[F] ~~421.6.4~~ 509.5.5.4 Failure of the gas detection system.**

**[F] ~~421.7~~ 509.5.6 Explosion control.**

**[F] ~~421.8~~ 509.5.7 Standby power.**

**Reason:** Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters

and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features.

Hydrogen fuel gas rooms are listed as incidental uses in Table 509 of the IBC and the IFC when not an H occupancy. This change simply moves it from Chapter 4 and puts it into the requirements for incidental uses in Chapter 5 making the application of the code easier to understand and easier for appropriate application for the user.

**Cost Impact:** Will not increase the cost of construction  
This change will simply clarify how these rooms, once identified as incidental must be constructed, and will not increase the cost of construction.

G70-15 : [F] 421-  
COLLINS4825

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** This is one of a series of proposals (G49-15 through G75-15) which would systematically relocate all provisions of Chapter 4 of the IBC to another location in the code. The proponent of these changes would locate current Chapter 4 provisions with other code requirements that they are a logical extension. A primary argument by the proponent for the relocation Chapter 4 provisions is to make these various provisions more easily found during the design process. He believes that their location in Chapter 4 results in them being either overlooked or found late in the design process and requiring substantial modifications to a design. The committee in disapproving the series of changes concluded that Chapter 4 provides a convenient location for specialized use and design provisions. It allows designers to start in one location to find unique requirements of a use or building feature before proceeding through the rest of the code to determine allowed height, area, construction types, and fire protection requirements found in those specific topic chapters. Contrary to the reason provided by the proponent, the committee felt that Chapter 4 isn't an afterthought in the design process, but is a convenient first stop for specialized requirements. Moving all the provisions of Chapter 4 to other chapters would make other chapters more confusing by adding one or more specialized sets of requirements in the midst of chapters that are relatively straight forward in addressing their topics. There was concern that unique and key provisions found in Chapter 4 could be lost and overlooked if moved to other code locations.

Although none of the series of proposals was approved, some individual proposals found more support than others. While the committee did not support complete elimination of Chapter 4, a case for relocating some provisions was made by a larger minority of the committee.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : David Collins, the Preview Group, representing The American Institute of Architects ([\[email protected\]](#))**

)

**requests Approve as Submitted.**

**Commenter's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the requirements for hydrogen fuel gas rooms that include requirements for their design and construction exhaust, gas detection, failures and explosion control, etc. are referenced in Section 706.2 of the IFC.

While the Code Change Committee rejected this proposal, there was support for this change as it is referenced only as an incidental use, but no reference is made to the technical requirements. We believe that much confusion and failure to understand how the code intends to be applied to hazardous materials can be eliminated by placing the provisions in Section 421 in Section 509. 509 includes criteria for separation, protection and limitations that comport well with the limitations in Section 421.

---

**G70-15**

# G71-15

422, 422.1, 422.2, 422.3, 422.3.1, 422.3.2, 422.3.3,  
[F] 422.4, [F] 422.5

## Proposed Change as Submitted

**Proponent :** David Collins, representing The American Institute of Architects (dcollins@preview-group.com)

### 2015 International Building Code

Delete without substitution:

#### ~~SECTION 422- AMBULATORY CARE FACILITIES~~

Revise as follows:

~~422.1~~ **304.2 General Ambulatory care facilities.** Occupancies classified as *ambulatory care facilities* shall comply with the provisions of Sections ~~422.1~~ 304.2.1 through ~~422.5~~ 304.2.4 and other applicable provisions of this code.

~~422.2~~ **304.2.1 Separation.**

*(The text of this section and subsequent sections would be unchanged except to update section references.)*

~~422.3~~ **304.2.2 Smoke compartments.**

~~422.3.1~~ **304.2.2.1 Means of egress.**

~~422.3.2~~ **304.2.2.2 Refuge area.**

~~422.3.3~~ **304.2.2.3 Independent egress.**

[F] ~~422.4~~ **304.2.3 Automatic sprinkler systems.**

[F] ~~422.5~~ **304.2.4 Fire alarm systems.**

**Reason:** Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features.

Ambulatory facilities are classified as a B occupancy. Being a relatively new occupancy having the specific requirements located in Chapter 4 with no reference to it in Chapter 3 leaves many questions in the code users mind. Moving it here will clearly identify these types of care facilities as a business and include the specific criteria for it in that same section.

By moving the provisions in Chapter 4 for ambulatory care facilities into the the occupancy classification in Chapter 3, the triggers and allowances for ambulatory care will be clear and obvious choices. Correlation of references to new code locations are not included in the proposal but need to be provided by the editorial

staff.

**Cost Impact:** Will not increase the cost of construction

By moving the provisions for ambulatory care into the occupancy classification it will make the code simpler to understand and apply and will not increase the cost of construction.

G71-15 : [F] 422-  
COLLINS4869

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** This is one of a series of proposals (G49-15 through G75-15) which would systematically relocate all provisions of Chapter 4 of the IBC to another location in the code. The proponent of these changes would locate current Chapter 4 provisions with other code requirements that they are a logical extension. A primary argument by the proponent for the relocation Chapter 4 provisions is to make these various provisions more easily found during the design process. He believes that their location in Chapter 4 results in them being either overlooked or found late in the design process and requiring substantial modifications to a design. The committee in disapproving the series of changes concluded that Chapter 4 provides a convenient location for specialized use and design provisions. It allows designers to start in one location to find unique requirements of a use or building feature before proceeding through the rest of the code to determine allowed height, area, construction types, and fire protection requirements found in those specific topic chapters. Contrary to the reason provided by the proponent, the committee felt that Chapter 4 isn't an afterthought in the design process, but is a convenient first stop for specialized requirements. Moving all the provisions of Chapter 4 to other chapters would make other chapters more confusing by adding one or more specialized sets of requirements in the midst of chapters that are relatively straight forward in addressing their topics. There was concern that unique and key provisions found in Chapter 4 could be lost and overlooked if moved to other code locations.

Although none of the series of proposals was approved, some individual proposals found more support than others. While the committee did not support complete elimination of Chapter 4, a case for relocating some provisions was made by a larger minority of the committee. This section addresses ambulatory care facilities and the requirements are occupancy driven.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : David Collins, the Preview Group, representing The American Institute of Architects ([\[email protected\]](#))**

)

**requests Approve as Submitted.**

**Commenter's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the requirements for storm shelters that include

requirements for compliance to a standard, emergency operations and Group E occupancies. It doesn't have any tie to any occupancy classification in the IBC and does not explain how it is to be treated. There is no reference to Section 423 anywhere in the IBC.

While the Code Change Committee rejected this proposal, there was support for this change as it is outside the normal application of the code.

---

**G71-15**

# G72-15

423, 423.1, 423.1.1, 423.2, 423.3, 423.4

## Proposed Change as Submitted

**Proponent :** David Collins, representing The American Institute of Architects (dcollins@preview-group.com)

### 2015 International Building Code

Delete without substitution:

#### ~~SECTION 423- STORM SHELTERS~~

Revise as follows:

**423.1 504.5 General Storm shelters.** In addition to the requirements of this section and other applicable requirements in this code, storm shelters shall be constructed in accordance with ICC 500.

**423.1.1 504.5.1 Scope.**

*(The text of this section and subsequent sections would be unchanged except to update section references.)*

**423.2 504.5.2 Definitions.**

**423.3 504.5.3 Critical emergency operations.**

**423.4 504.5.4 Group E occupancies.**

**Reason:** Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features.

Moving the provisions for storm shelters from Chapter 4 into Section 504 will more closely align such structures for their typical location above or below ground. With other changes for structures below ground (underground structures) this will maintain the common location of buildings, their height and their relationship with grade consistent and make it more understandable for code users.

**Cost Impact:** Will not increase the cost of construction  
Moving the provisions for storm shelters from Chapter 4 to Chapter 5 will not affect the cost of construction.

G72-15 : 423-  
COLLINS4872

---

## Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** This is one of a series of proposals (G49-15 through G75-15) which would systematically relocate all provisions of Chapter 4 of the IBC to another location in the code. The proponent of these changes would locate current Chapter 4 provisions with other code requirements that they are a logical extension. A primary argument by the proponent for the relocation Chapter 4 provisions is to make these various provisions more easily found during the design process. He believes that their location in Chapter 4 results in them being either overlooked or found late in the design process and requiring substantial modifications to a design. The committee in disapproving the series of changes concluded that Chapter 4 provides a convenient location for specialized use and design provisions. It allows designers to start in one location to find unique requirements of a use or building feature before proceeding through the rest of the code to determine allowed height, area, construction types, and fire protection requirements found in those specific topic chapters. Contrary to the reason provided by the proponent, the committee felt that Chapter 4 isn't an afterthought in the design process, but is a convenient first stop for specialized requirements. Moving all the provisions of Chapter 4 to other chapters would make other chapters more confusing by adding one or more specialized sets of requirements in the midst of chapters that are relatively straight forward in addressing their topics. There was concern that unique and key provisions found in Chapter 4 could be lost and overlooked if moved to other code locations.

Although none of the series of proposals was approved, some individual proposals found more support than others. While the committee did not support complete elimination of Chapter 4, a case for relocating some provisions was made by a larger minority of the committee. This section addresses storm shelters. The support of FEMA to maintain the provisions in chapter 4 was important to committee members.

**Assembly Action :**

**None**

---

### **Individual Consideration Agenda**

#### ***Public Comment 1:***

**Proponent : David Collins, the Preview Group, representing The American Institute of Architects ([\[email protected\]](#))**

**)**

**requests Approve as Submitted.**

**Committer's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the requirements for storm shelters that include requirements for compliance with a standard, emergency operations and Group E installations. None of them identify the structure as a specific occupancy and there is no reference to Section 423 anywhere in the IBC which tends to fly in the face of how the code works.

While the Code Change Committee rejected this proposal based on FEMA's objection to its being moved, which begs the question of why it is there? We should work toward ascertaining how every element of the code is to be integrated into buildings and what the purpose of the regulations are intended to achieve. Just putting them in the code arbitrarily (Chapter 4) doesn't establish a level of consistency and understanding that is important in a code.

---

**G72-15**

# G73-15

424, 424.1, 602.6 (New), 424.2, [F] 424.3, 424.4, 424.5

## Proposed Change as Submitted

**Proponent :** David Collins, representing The American Institute of Architects (dcollins@preview-group.com)

### 2015 International Building Code

Delete without substitution:

#### ~~SECTION 424- CHILDREN'S PLAY STRUCTURES~~

Delete and substitute as follows:

~~**424.1 Children's play structures.** Children's play structures installed inside all occupancies covered by this code that exceed 10 feet (3048 mm) in height and 150 square feet (14 m<sup>2</sup>) in area shall comply with Sections 424.2 through 424.5.~~

#### **602.6 Children's play structures**

Children's play structures installed inside all occupancies covered by this code that exceed 10 feet (3048 mm) in height and 150 square feet (14 m<sup>2</sup>) in area shall comply with Sections 602.6.1 through 602.6.4.

Revise as follows:

#### **424.2 602.6.1 Materials.**

*(The text of this section and subsequent sections would be unchanged except to update section references.)*

#### **[F] 424.3 602.6.2 Fire protection.**

#### **424.4 602.6.3 Separation.**

#### **424.5 602.6.4 Area limits.**

**Reason:** Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features.

The requirements for children's play area are based solely on the materials they are constructed of and their relationship with the structure in which they are located. Moving these requirements into Chapter 6 where other materials performance and their relationship with the building is appropriate and more easily understood by code users.

**Cost Impact:** Will not increase the cost of construction  
Moving these provisions with no change will not affect the cost of construction.

G73-15 : 424-  
COLLINS4879

---

## **Public Hearing Results**

### **Committee Action:**

**Disapproved**

**Committee Reason:** This is one of a series of proposals (G49-15 through G75-15) which would systematically relocate all provisions of Chapter 4 of the IBC to another location in the code. The proponent of these changes would locate current Chapter 4 provisions with other code requirements that they are a logical extension. A primary argument by the proponent for the relocation Chapter 4 provisions is to make these various provisions more easily found during the design process. He believes that their location in Chapter 4 results in them being either overlooked or found late in the design process and requiring substantial modifications to a design. The committee in disapproving the series of changes concluded that Chapter 4 provides a convenient location for specialized use and design provisions. It allows designers to start in one location to find unique requirements of a use or building feature before proceeding through the rest of the code to determine allowed height, area, construction types, and fire protection requirements found in those specific topic chapters. Contrary to the reason provided by the proponent, the committee felt that Chapter 4 isn't an afterthought in the design process, but is a convenient first stop for specialized requirements. Moving all the provisions of Chapter 4 to other chapters would make other chapters more confusing by adding one or more specialized sets of requirements in the midst of chapters that are relatively straight forward in addressing their topics. There was concern that unique and key provisions found in Chapter 4 could be lost and overlooked if moved to other code locations.

Although none of the series of proposals was approved, some individual proposals found more support than others. While the committee did not support complete elimination of Chapter 4, a case for relocating some provisions was made by a larger minority of the committee. This section addresses children's play structures. Chapter 6 is structure classification, moving this and other things to Chapter 6 would just move the 'dumping ground of unique provisions'.

### **Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### ***Public Comment 1:***

**Proponent : David Collins, the Preview Group, representing The American Institute of Architects ([\[email protected\]](#))**

**)**

**requests Approve as Submitted.**

**Commenter's Reason:** This is one of a series of code changes we submitted to directly link the "special" requirements in Chapter 4 with the technical requirements in various portions of the code on the same subjects. It is our feeling that the code is confusing and even lacking coordination without any references to these special provisions. In this case, the requirements for children's play structures that include requirements for materials, fire protection separation and area limits, that all relate to how this piece of equipment is to be integrated into a building. There is no reference to Section 422 anywhere in the IBC except in Section 402.6.2 for malls.

The Code Change Committee rejected this proposal, indicating that by moving this to Chapter 6, that would become only another dumping ground for various disconnected pieces of the code. While that may be true, we should work toward ascertaining how every element is to be integrated into buildings and what the purpose of the regulations are intended to achieve. Just putting them in the code arbitrarily (Chapter 4) doesn't establish a level of consistency and understanding that is important in a code.

---

**G73-15**

# G76-15

## 402.7.6 (New)

### Proposed Change as Submitted

**Proponent :** Stephen DiGiovanni, Clark County Building Department, representing Southern Nevada Chapter of ICC (sdigiovanni@clarkcountynv.gov)

## 2015 International Building Code

### Add new text as follows:

**402.7.6 Fire command center** For covered mall buildings exceeding 50,000 square feet (4645 m<sup>2</sup>) a fire command center complying with Section 911 shall be provided in a location approved by the fire department.

**Reason:** The IFC alludes to a fire command center for covered mall buildings in Section 408.11.1. However, the trigger requirement for a covered mall building is not apparent. Base code requirements for covered mall buildings have significant triggers occurring at 50,000 sf. These include emergency voice alarm systems, and emergency power. Section 402.7.5 has requirements for fire department access to controls for sprinklers, HVAC, and "other detection, suppression or control elements shall be identified for use by the fire department." In addition Section 402.7.2 requires smoke control in covered malls with atriums over two stories.

For larger buildings, preplanning the use of fire protection equipment such as hose stations, and the above mentioned equipment will aid in fire department response. Providing the necessary information and equipment controls in one accessible location such as a fire command center, can only aid the response. Without a fire command center there is no requirement to consolidate equipment controls to aid emergency response. This proposal will formalize the requirement alluded to in the fire code for mall buildings over 50,000 sf. and provide a single location for emergency equipment controls and responders to coordinate their efforts.

**Cost Impact:** Will increase the cost of construction  
This proposal will increase the cost of construction by adding a fire command center to certain mall buildings.

G76-15 : 402.7.6 (New)-  
DIGIOVANNI3816

---

### Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** While this would result in a consolidation of system controls in one location, full compliance with Section 911 would seem to be overkill. Despite the stated intent of the proponent, the language would only apply to covered malls; leaving application to open malls unclear. Requiring all fire control room systems isn't needed for a single story malls. This may be setting up a conflict between the Fire Code and Building Code.

**Assembly Action :**

**None**

---

### Individual Consideration Agenda

## Public Comment 1:

**Proponent : Stephen DiGiovanni, representing Southern Nevada Chapter of ICC (sdigiovanni@clarkcountynv.gov) requests Approve as Submitted.**

**Commenter's Reason:** The IFC alludes to a fire command center for covered mall buildings in Section 403.11.1.2. However, the trigger requirement for a covered mall building is not apparent in the IBC.

Currently, there exists a clear requirement for a fire command center for high-rise buildings in IBC Section 406.4.6, which reads as follows:

**[F] 403.4.6 Fire command.** *A fire command center* complying with Section 911 shall be provided in a location *approved* by the fire department.

The high-rise version of the fire command center is triggered along with various protection systems. Essentially, as soon as a building is considered a high-rise, a number of emergency system code requirements are triggered, and the fire command center comes with those systems.

In a similar fashion, mall buildings (both covered and open) have emergency systems that are triggered when the covered mall building exceeds 50,000 square feet. These include emergency voice alarm systems, and emergency power. Also, Section 402.7.5 has requirements for fire department access to controls for sprinklers, HVAC, and "other detection, suppression or control elements shall be identified for use by the fire department." In addition Section 402.7.2 requires smoke control, in covered mall buildings only, with atriums over two stories.

Please note that this proposal only includes covered mall buildings, and does not address open mall buildings. While there are many similarities in hazards, as can be seen with the smoke control requirement, it is not as necessary to have all emergency system requirements apply to open mall buildings.

This proposal will formalize the requirement alluded to in the fire code by requiring a fire command center for covered mall buildings over 50,000 sf. and provide a single location for emergency equipment controls and responders to coordinate their efforts.

## Public Comment 2:

**Proponent : Edward Kulik, representing ICC Building Code Action Committee (bcac@iccsafe.org) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

**402.7.6 Fire command center** For covered mall buildings exceeding ~~50,000~~ 100,000 square feet (~~4645~~ 9290m<sup>2</sup>) a *fire command center* complying with Section 911 shall be provided in a location approved by the

*fire department code official.*

**Commenter's Reason:** While the original proposal provides clarification to explicitly require a fire command center for covered mall buildings, the original proposal to trigger this requirement at 50,000 square feet appears too restrictive. This public comment changes the trigger to 100,000 square feet to allow a more balanced approach to this requirement.

Also, this public comment modifies the term "fire department" to "fire code official". The term "fire department" is not common in the I-codes and is not defined, whereas the term "fire code official" is defined and is commonly used throughout the I-codes. Should the membership decide to change the term "fire department" to "fire code official", we suggest an editorial change to IBC Section 403.4.6, to also change the term "fire department" to "fire code official".

---

**G76-15**

# G77-15

## 402.8.6.1

### Proposed Change as Submitted

**Proponent :** Robert Davidson, representing Myself  
(rjd@davidsoncodeconcepts.com)

## 2015 International Building Code

**Revise as follows:**

**402.8.6.1 Exit passageways.** Where *exit passageways* provide a secondary *means of egress* from a tenant space, ~~doorways to the exit passageway~~ passageways shall be protected by 1-hour fire door assemblies that are self- or automatic-closing by smoke detection constructed in accordance with Section 716.5.9.3 1024.

**Reason:** The purpose of this proposal is to point the user to all of the code requirements for exit passageways. The 1 hour fire-resistance rating is maintained, for openings Section 1024.5 points the user to Section 716 and applying that portion of the code maintains the requirement for the 1 hour rated fire doors, (see Table 716.5), and maintains the requirement for the smoke activated closure, (see Section 716.5.9.3, Item 3).

There has been cases of confusion in that a user looks at Sections 402.8.6.1 and 402.8.7 and interprets that these are the only sections needed to be complied with for an exit passageway in this occupancy. For example, the application of Section 1024.6 for penetration limitations. With the suggest change the level of protection is unchanged and application of the exit passageway requirements are clarified.

**Cost Impact:** Will not increase the cost of construction  
Since the modification clarifies application of the code there should be a reduction in unnecessary costs associated with correcting errors in construction.

G77-15 : 402.8.6.1-  
DAVIDSON5504

---

### Public Hearing Results

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The change points the code user to the correct provisions for the design and construction of exit passageways.

**Assembly Action :**

**None**

---

### Individual Consideration Agenda

*Public Comment 1:*

**Proponent : Timothy Andres, representing self requests Disapprove.**

**Commenter's Reason:** Code Change G-77 proposes to alter a critical element of how Malls have been built and operated in reference to service of tenants and

distribution of utilities through Exit Passageways. Malls are unique in their operation and rely on servicing of tenants and access of utilities in a common space, loss of this ability would be detrimental to the operation and function of the Mall Building. This public comment is being issued to disapprove this change as it is unsubstantiated and would have a severe impact on new (and potentially existing) Mall Buildings. The unique conditions of a Mall Building must continue to be considered in the code in order to maintain a functioning design, requiring separate tenant egress and stocking would cripple the operation of the mall and its tenants.

## *Public Comment 2:*

**Proponent : David Collins, representing The American Institute of Architects (dcollins@preview-group.com) requests Disapprove.**

**Commenter's Reason:** The AIA disagrees with the As Submitted action by the Code Development Committee. This proposal should be disapproved.

The proponent in his Reason statement said, "There has been cases of confusion in that a user looks at Sections 402.8.6.1 and 402.8.7 and interprets that these are the only sections needed to be complied with for an exit passageway in this occupancy. For example, the application of Section 1024.6 for penetration limitations. With the suggested change the level of protection is unchanged and application of the exit passageway requirements are clarified. "

While the proponent has brought up a point that probably needs to be discussed, if it was his intent to correlate and integrate the two sections such that provisions currently in Section 402 fit with those in Section 1024, the proposed language does not do this – at all. As is already recognized in Section 1024.5, exit passageways in mall buildings serve unique functions and are allowed to be designed in a different fashion than other occupancies (i.e., 402.8.7 specifically allows mechanical rooms, electrical rooms, building service areas and service elevators to open directly into exit passageways when separated from the exit passageway and openings are protected). If the types of spaces identified in Section 402.8.7 are allowed to open into an exit passageway, doesn't it follow that the piping and wiring that go along with these spaces, and which typically run through the exit passageway, are also allowed (when of noncombustible or listed materials and with protected penetrations). A single reference to Section 1024 does not provide the necessary level of detail needed to include all these conditions, and will only create additional confusion rather than the "clarity" the proponent wishes to accomplish.

The provisions found in Section 402 for mall buildings came out a multi-year effort by the CABO Board for the Coordination of Model Codes (BCMC) in which they reviewed and researched the design and constructability of covered mall buildings. The fundamentals of the current mall building package found in the 2015 IBC Section 402 were introduced to each of the legacy codes in the mid 1970's (BOCA Basic Building Code Section 432, SBCCI Standard Building Code Section 507 and ICBO Uniform Building Code Chapter 11). Recognizing the commonality of the topic and the need for correlation, the CABO Board for the Coordination of Model Codes (BCMC) created an ad-hoc committee to study covered mall buildings. The result was a comprehensive report issued by BCMC in 1980 that contained the text of a new covered mall section – much of which is still found in the 2015 IBC. It is a unique package of design criteria specific to ONLY mall buildings, and which were, and still are, not associated with other types of buildings.

Therefore to just say that, in this instance, exit passageways in mall building have to comply with generic provisions for exit passageways in Section 1024, with no review or acknowledgement of how exit passageways relate and function in a mall building is inappropriate and will, as stated previously, only add to the confusion the proponent is trying to address. In the Reason statement, the proponent does not

provide a rationale for how Sections 402 and 1024 should be correlated or coordinated to work in concert. He has not brought forth a complete package that will address and coordinate ALL of the unique design features and functions that are associated with an exit passageway in a mall building designed and constructed in accordance with Section 402, with the provisions for a "generic" exit passageways found in Section 1024. Without revisions to both Section 402 and/or 1024, to address the unique functions an exit passageway serves in a mall building, the proposal is incomplete and should not be approved.

### *Public Comment 3:*

**Proponent : Joseph Easley, representing Simon Property Group (Joseph.easley@simon.com) requests Disapprove.**

**Commenter's Reason:** Costly and unnecessary

### *Public Comment 4:*

**Proponent : Thomas Everett, CBL & Associates Properties, representing CBL & Associates Properties (tom.everett@cblproperties.com) requests Disapprove.**

**Commenter's Reason:** This public comment is made on the code change G-77 proposal to disprove and approve some modified version of code change G-78. Code Change G-77 will greatly adversely impact existing Mall Buildings and new Mall Buildings.

Code change G-77 proposal alters the Mall Building exit passageway scoping section to state the following, "Where exit passageways provide a secondary means of egress from a tenant space, the exit passageway shall be constructed in accordance with Section 1024." Section 1024 requires compliance with the two following requirements that impace the typical design and use of exit passageways in Mall Buildings.

1. Penetrations other than equipment and ductwork necessary for the independent pressurization, sprinkler piping, standpipes, electrical raceway for fire department communication and electrical raceway serving the exit passageway and terminating at steelbox not exceeding 16 square inches are not permitted.
2. An exit passage must not be used for any purpose other than as a means of egress and a circulation path. A circulation path is defined as an exterior or interior way of passageway from one place to another for pedestrians. This would prohibit the use of an exit pasageway for the loading and unloading of tenant spaces which is common operating procedures for mall tenants.

This code change ignores the unique challenges of a Mall Building in which access to utilities in a common space is necessary for the function of a Mall Building. Further, by requiring dedicated exit passageways serving only as a means of egress an alternate design to stock tenant spaces must be designed into Mall Buildings.

Existing shopping malls all around the country have incorporated utility distribution in exit passageways and serviced tenants via exit passageways without any adverse affects. Absolutely no substantiation for these new code requirements/previsions has been provided.

## *Public Comment 5:*

**Proponent : Bruce Harrell, representing Simon Property Group requests Disapprove.**

**Commenter's Reason:** The proposed Code Change G-77 will greatly adversely impact existing Mall Buildings and new Mall Buildings.

## *Public Comment 6:*

**Proponent : Chris Heaphy, representing Taubman Centers, Inc (cheaphy@taubman.com) requests Disapprove.**

**Commenter's Reason:** These public comments are being submitted by Taubman Centers, Inc. on behalf of itself and its affiliated shopping centers with respect to the proposed code change G 77-15

Proposed Code change G 77-15 changes the Mall Building exit passageway scoping section to state the following, "Where exit passageways provide a secondary means of egress from a tenant space, the exit passageway shall be constructed in accordance with Section 1024." Section 1024 requires compliance with the two following requirements that impact the typical design and use of exit passageways in Mall Buildings:

1. Penetrations other than equipment and ductwork necessary for the independent pressurization, sprinkler piping, standpipes, electrical raceway for fire department communication and electrical raceway serving the exit passageway and terminating at steel box not exceeding 16 square inches are not permitted.
2. An exit passageway must not be used for any purpose other than as a means of egress and a circulation path. A circulation path is defined as an exterior or interior way of passageway from one place to another for pedestrians. This would prohibit the use of an exit passageway for the loading and unloading of tenant spaces which is common operating procedures for mall tenants.

This proposed code change does not take into account the unique features of a Mall Building in which access to utilities in a common space is necessary for the function of a Mall Building and its occupants. Further, by requiring dedicated exit passageways serving only as a means of egress an alternate design to stock tenant spaces must be designed into Mall Buildings. This may result in deliveries being made through the common areas of the Mall itself and the public areas of the tenant spaces, thus creating a potentially dangerous situation.

Existing shopping malls around the country have incorporated utility distribution in exit passageways and serviced tenants via exit passageways without any adverse effects. No substantiation for these new code requirements/provisions has been provided. At a minimum, the rationale for this proposal should be explained and then we can discuss what, if any, changes should be considered.

Taubman Centers, Inc. will be working with the ICSC to provide additional information at the next round of public hearings to support modification or rejection of the

proposed G-77 proposed code changes.

### *Public Comment 7:*

**Proponent : Paul Kalvaitis, Simon Property Group, representing Self requests Disapprove.**

**Commenter's Reason:** Code Change G-77 will negatively impact how new mall buildings are constructed and how existing buildings are renovated.

### *Public Comment 8:*

**Proponent : Frederic McCoy, JPRA Architects, representing self (fmccoy@jpra.com) requests Disapprove.**

**Commenter's Reason: This public comment is made on the code change G-77 proposal to disapprove and approve some modified version of code change G-78. Code Change G-77 will greatly adversely impact existing Mall Buildings and new Mall Buildings.**

Code change G-77 proposal alters the Mall Building exit passageway scoping section to state the following, "Where exit passageways provide a secondary means of egress from a tenant space, the exit passageway shall be constructed in accordance with Section 1024." Section 1024 requires compliance with the two following requirements that impact the typical design and use of exit passageways in Mall Buildings:

1. Penetrations other than equipment and ductwork necessary for the independent pressurization, sprinkler piping, standpipes, electrical raceway for fire department communication and electrical raceway serving the exit passageway and terminating at steel box not exceeding 16 square inches are not permitted.
2. An exit passageway must not be used for any purpose other than as a means of egress and a circulation path. A circulation path is defined as an exterior or interior way of passageway from one place to another for pedestrians. This would prohibit the use of an exit passageway for the loading and unloading of tenant spaces which is common operating procedures for mall tenants.

This code change ignores the unique challenges of a Mall Building in which access to utilities in a common space is necessary for the function of a Mall Building. Further, by requiring dedicated exit passageways serving only as a means of egress an alternate design to stock tenant spaces must be designed into Mall Buildings.

Existing shopping malls all around the country have incorporated utility distribution in exit passageways and serviced tenants via exit passageways without any adverse affects for many years. This has proven to protect public safety and afford functional operation of the building. The proposed change would compromise function, increase costs, and reduce efficient space utilization without any solving any problem, and should not be approved.

### *Public Comment 9:*

**Proponent : Amy Murdock, representing Code Consultants**

## **Incorporated (amym@codeconsultants.com) requests Disapprove.**

**Commenter's Reason: On behalf of Code Consultants, Inc. a public comment is being submitted on the code change proposals to disapprove G-77 and approve G-78 (potentially with modifications) to avoid the formal adoption of exit passageway requirements that will CREATE DEFICIENCIES in existing Mall Buildings and GREATLY impact design of Mall Buildings in the future.**

### Background

Based on the current state of the 2018 International Building Code adoption cycle, the design and use of exit passageways in Mall Buildings will be significantly impacted as it relates to service utilities, operational procedures for stocking retail tenants, and location of stock rooms in relation to exit passageways.

### Exit Passageway Code Change

To address the formal interpretation that restricts the design of Mall Building exit passageways, CCI submitted a code change to the ICC for discussion at the public hearings in Memphis, Tennessee. This was one of two proposals submitted that addressed exit passageways within Mall Buildings. The proposed code change (cataloged as G-78) was submitted to add language to the 2018 IBC to specifically permit the existing practice of using exit passageways for the distribution of utilities in Mall Buildings. G-78 was presented and discussed with the committee but was ultimately not approved.

While G-78 was not approved, a code change proposal (cataloged as G-77) that is contradictory to G-78 was approved.

Code Change G-77 is a proposal that alters the exit passageway scoping section to state the following, "Where exit passageways provide a secondary means of egress from a tenant space, the exit passageway shall be constructed in accordance with Section 1024." Section 1024 requires compliance with the two following requirements that impact the typical design and use of exit passageways in Covered Mall Buildings:

1. Penetrations other than equipment and ductwork necessary for the independent pressurization, sprinkler piping, standpipes, electrical raceway for fire department communication and electrical raceway serving the exit passageway and terminating at steel box not exceeding 16 square inches are not permitted.
2. An exit passageway must not be used for any purpose other than as a means of egress and a circulation path. A circulation path is defined as an exterior or interior way of passageway from one place to another for pedestrians. This would prohibit the use of an exit passageway for the loading and unloading of tenant spaces which is common operating procedures for mall tenants.

Code Change G-77 ignores the unique challenges of a Mall Building by requiring dedicated exit passageways that can only serve as a means of egress thus requiring an alternate design to stock tenant spaces and an alternate means to distribute building utilities.

Reality: Tenants must have second exits to some form of a corridor or exit passageway; in one-level, two-level or three-level malls. Mall concourses must have exits reachable within 200 feet of travel. Therefore, exit passageways have always been and will continue to be necessary in malls. If mall exit passageway systems can no longer distribute utilities, act as a means of service to tenants, and even act as a second exit from a tenant space, thousands of existing malls will be considered deficient and all new construction greatly impacted. It is not uncommon for the entire length of a mall exterior wall to serve as an exit passageway on all three levels of a mall.

Tenant spaces are designed such that sales floors front the concourse and tenant stockrooms are located in the rear of the store. In most cases, the tenant stockrooms open directly to the exit passageway using the provisions of 2015 IBC

Section 1016.2, Item 5, Exception 2. Code Change G-77 would definitely eliminate tenant stockrooms from opening onto an exit passageway.

2015 IBC Section 402.8.7 permits openings from service rooms into exit passageways. Code Change G-77 would prohibit the use of the exit passageway as a means to distribute the actual utility service to these permitted rooms. In essence Code Change G-77 would require all utilities to be distributed within tenant spaces or within an entirely new corridor that would parallel the exit passageway. Utilities can't be distributed within tenant spaces as the mall owner does not have rights to the tenant space floor area for building systems/utilities. Incorporating a parallel corridor would decrease a tremendous amount of real estate and would still yield a challenge since tenants would still have to exit from the rear of their spaces into a corridor system that would then have a door into the exit passageway system; extremely convoluted means of egress condition considering absolutely NO DATA HAS BEEN PRESENTED TO SUPPORT THIS DRASTIC CODE CHANGE.

Servicing of tenants within a mall building has forever been via the rear service corridor systems; which also function as exit passageways. All loading docks and service elevators are connected to these rear service corridors; again also functioning as exit passageways. 2015 IBC Section 402.8.7 specifically allows service elevators to open onto exit passageways.

#### Current Practice and Design

Mall buildings are permitted by the IBC to have certain building service rooms open directly into exit passageways. This is permitted for Mall Buildings (not permitted for other types of buildings) because they are unique structures due to the nature of their use. However, the IBC does not specifically address the distribution of utilities in an exit passageway, operational procedures for stocking retail tenants and/or allowing tenant stock rooms to open into an exit passageway.

Utilities are often located within the service corridors at the rear of the tenant spaces, which in most cases, also serve as exit passageways. Although 2015 IBC Section 402.8.7 permits openings from service rooms into exit passageways, the Code does not outline the distribution of utilities within the passageways. Historically, it has been interpreted that the code would allow the distribution of utilities within exit passageways provided that the penetrations are properly protected.

Furthermore, it is common practice for the exit passageways in Mall Buildings to be used for employee access and the distribution of goods to tenants. This is understood to be permitted due to the unique layout and configuration of Mall Buildings and is the logic behind the required increase in passageway width (66 inches; as required through 2015 IBC Section 402.8.6).

#### Past Code History

Code documentation is attached confirming that the inclusion of utilities in exit passageways and the servicing of tenants via exit passageways have been acceptable for hundreds of mall buildings.

- 1993 BOCA National Building Code (through 1999)
- 1997 Standard Building Code
- NFPA 101 Life Safety Code

Mall Buildings constructed in accordance with International Building Code (i.e. 2000 - 2015 editions) and certain prior codes such as those developed by the Buildings Officials Code Administrators International (BOCA) typically have exit passageways with exposed utility distribution. In addition, the exit passageways are used for normal employee access and for the distribution of goods to tenants. This was an acceptable practice in the other "legacy construction codes" such as the Standard Building Code (SBC) and the Uniform Building Code (UBC). These design elements were permitted based on the unique design challenges of a Mall Building.

#### International Code Council Opinions & Interpretations

The "typical" utility distribution in exit passageways was validated by the International Code Council (ICC) staff in an opinion letter dated July 29, 2005 that states the

following related to a question posed to the ICC about exposed utilities in exit passageways within Covered Mall Buildings, "You are specifically asking whether the 1 hour fire barrier walls forming the exit passageway can be penetrated by the building's utility components and whether these elements can be exposed within the exit passageway. The answer is Yes."

The justification provided in the opinion points to the fact that Covered Mall buildings have a unique nature (i.e. exterior isolation, interior fire resistance compartments, enhance fire protection systems) that corresponds to allowances such as the exposed piping that would not apply to more conventional buildings.

The letter goes on to recognize the fact that the IBC Commentary notes that the utility components are permitted to penetrate the fire barrier walls of the exit passageways. The letter states that it is obvious that the elements can be exposed within the exit passageway as long as they are properly protected and as long as the required minimum egress widths / heights are maintained.

### **The 2015 IBC Commentary further supports the opinion letter received.**

As an update to this 2005 opinion letter from the ICC, a formal interpretation request was submitted to further clarify that utilities were permitted to be exposed in exit passageways within Mall Buildings. Without significant changes to the International Building Code since the opinion letter from 2005, the formal interpretation response noted a change in ICC's stance on this topic. The formal interpretation stated that the intent of the code was to not permit utilities to be exposed to the exit passageway. The interpretation of the ICC was that the code, "does not intend for mechanical equipment such as wiring, conduit, water supply or other building utilities to be located within the exit passageway itself...the intent is that they are not within the same space."

The formal interpretation issued absolutely ignored the unique aspect of covered mall buildings, the past 20 years of construction in malls, and the fire statistics related to Mall Buildings.

### **Fire Statistics in Shopping Malls**

#### **Data Concerning Shopping Mall Fires**

Using data from the National Fire Incident Reporting System (NFIRS) 5.0 and NFPA Surveys during the period 2007 to 2011, a table describing fire experience in mercantile occupancies is presented as an attachment.

Fixed property use code #585 (shopping centers/malls prior to the year 2000) is now included in the included in the fixed property use #580 (general retail, other). In discussions with NFPA this consolidation was done since the need to segregate out malls was no longer a concern since the number of fires drastically reduced.

A total of 710 fires were reported for the period of 2007-2011 for the fixed property use #580 (general retail, other). Note that, in the reported fires:

1. One death was recorded.
2. Minimal (ten) injuries were recorded.
3. Estimated property loss of \$56 million.

Using data from the NFIRS during the period 1992 to 1996, a table describing fire experience in mercantile occupancies is presented as an attachment.

A total of 630 fires were reviewed for the period of 1992 to 1996. Automatic sprinklers were present in approximately 63% of those buildings. This data indicates that most shopping mall centers are protected by automatic sprinkler systems. Note that, in the reported fires:

1. No deaths were recorded.
2. Minimal injuries were recorded.
3. Property damage per incident was less than \$3,000 for buildings provided with an automatic sprinkler system and \$21,000 for the damage per total

number of incidents.

Note that in 1992-1996, 630 fires were reported specific to shopping centers; in 2007-2011, 710 fires were reported to "general retail, other" structures. Unfortunately a specific breakdown for shopping malls is no longer available; it can be fairly assumed that the number of fires has decreased.

Although somewhat dated, statistical data developed from the NFPA's extensive fire database for the time period of 1980 to 1996 is presented as an attachment. This information was compiled from national estimates of fires reported to fire departments.

The estimates were based upon data from NFPA's annual stratified random sample survey and the US Fire Administrations (USFA) National Fire Incident Reporting System (NFIRS). They were combined using statistical methods developed by analysts at the NFPA, USFA and the US Consumer Product Safety Commission.

The data reflects a fire history, from 1980 through 1996 for structure fires in all shopping malls however NFPA was not able to delineate the experience of open malls versus closed mall, sprinklered malls versus unsprinklered malls, malls versus department stores, or firefighter injury experience.

The experience regarding the total number of fires slightly increased during that period of time. It is important to note that this conclusion is based on the strong possibility that the number of shopping mall properties has greatly increased and the data seems to reflect this.

The graph for civilian deaths has decreased and injuries remained essentially the same. The amount of property damage when adjusted to 1998 dollars, indicates that except for 1986, an unusual year, the level of damage has varied greatly. A trend line indicates the property damage has increased most likely due to the increase in the number of malls. The amount of property damage per shopping mall fire slightly increased over the 20 year period.

We conclude from this information that the fire experience in shopping malls as a whole does not reflect any change in the hazard presented. Updated data is being obtained for the public hearings and will be noted if permitted.

In summary, the fire hazard potential of all shopping malls has remained essentially the same if not better. When NFIRS removed the fixed property use code #585 specific to shopping centers, the malls were then "lumped into" a larger pool of retail. This confirms that mall fires were decreasing.

#### Shopping Mall Fire Narratives

The NFPA Fire Incident Data Organization database identifies large fires, unique fires, or fires in which sprinkler systems are significant. An NFPA report issued in June 2014 is attached which summarizes numerous shopping mall fire incidents.

#### **NONE of the fire conditions related to distribution of utilities in exit passageways and the properties properly protected by fire sprinklers properly protected the building.**

In Texas, 2013 assumed, an arson fire in a discount store of a strip mall was controlled by six (6) sprinklers. Property damage was estimated to be \$180,000 and no injuries were reported.

In Washington, 2013 assumed, a non-sprinklered, wood constructed strip mall was destroyed when a tanning bed exploded and fire fighters were unable to contain the fire.

In Arizona, 2013 assumed, an overloaded extension cord ignited a fire that was controlled by a sprinkler until fire fighters arrived to extinguish it. Property damage was estimated to be \$30,000 and no injuries were reported.

In Virginia, 2012 assumed, an electrical fire from improperly installed circuits arced and ignited walls and stored items during a day that a tenant in a strip mall was not open. The building was not protected by a fire sprinkler system. Property damage was estimated to be \$1 million; contents damage \$100,000 and four (4) fire fighter injuries were reported (heat exhaustion and cut on hand).

In Missouri, 2011 assumed, a fire in a storage room of a children's theater in a

shopping mall occurred. The fire was contained by the fire sprinkler system until fire department arrived and extinguished the fire. Property damage was estimated to be \$2,500 and no injuries were reported.

In Illinois, 2011 assumed, a pile of oily rags in a storage area of a strip mall ignited and burned until a sprinkler operated and confined the fire. Property damage was estimated to be \$2,000 and no injuries were reported.

In Pennsylvania, 2010 assumed, cardboard boxes ignited and the fire was confined by a single sprinkler until the fire department arrived to extinguish it. Property damage was estimated to be \$50,000 and no injuries were reported.

In Tennessee, 2010 assumed, a fire in a housekeeping break room was controlled/confined by the fire sprinkler system until the fire department arrived to extinguish it. Property damage was estimated to be \$10,000 and no injuries were reported.

In Florida, 2010 assumed, a candle left burning unattended ignited a fire that was controlled/confined by the fire sprinkler system until the fire department arrived to extinguish it. Property damage was estimated to be \$1,000.

In California, 2010 assumed, an arson fire occurred in a two-story shopping mall. For an undocumented reason, a mall employee shut down the fire sprinkler system for 71 minutes; once turned back on 200 sprinklers activated. Fire doors, watercurtain and fire walls were effective in stopping the fire from spreading to other stores. To further complicate matters, a bomb threat had been received which delayed fire department ations. Property damage was estimated to be \$110 million.

In Utah, 2009 assumed, welding work ignited a decorative tree within a mall. The building was protected with a fire sprinkler system. A large amount of smoke yielded the majority of damage. Structural damage was estimated at \$25,000 while smoke damage was estimated at \$1,175,000.

In Kansas, 2009 assumed, a fire within a nonsprinklered, single-story mall spread for an undetermined time was controlled through the inclusion of fire walls and extinguished by the fire department. Property damage was estimated to be \$1.5 million, content damage at \$2.5 million, and no injuries were reported.

Other searches available at the time this public comment was generated included a NFPA database search from 1980 until 1998 and found eight covered mall building fires. The following is a short summary of each fire in the database query result.

**NONE of the fire conditions related to distribution of utilities in exit passageways and the properties properly protected by fire sprinklers properly protected the building.**

**Covered Mall Buildings with Automatic Sprinkler Protection**

In New Jersey, in 1995, children started a fire in a shopping mall in which one sprinkler confined and extinguished the fire. Property damage was not estimated and no injuries were reported.

In Colorado, in 1994, an overload or short in extension cords caused a fire in which four sprinklers confined and extinguished the fire. Property damage was not estimated and no injuries were reported.

In California, in 1993, an overhead fan in a stockroom was left on all night and ignited paper products on a shelf nearby. A single sprinkler confined and extinguished the fire. Property damage was estimated to be \$175,500 and no injuries were reported.

In Florida, in 1991, a fire was found in a shipping crate. A sprinkler directly above the crate confined and extinguished the fire. Property damage was estimated at \$150,000 and no injuries were reported.

In California, in 1990, the fire department responded to a waterflow alarm at a two-story shopping center. A wall fronting on a trash dumpster was found burning. Two sprinklers in a space above the ceiling tiles confined and extinguished the fire. Direct property damage was estimated at \$36,000 due mostly to smoke odor and water damage. One firefighter suffered lower back pain at this fire.

In Wisconsin, a fire occurred in the ceiling of a shopping mall in 1987. A sprinkler system provided complete coverage of the building but not the combustible concealed space between the ceiling and roof deck. The sprinkler system activated when drop fires began and it prevented further fire extension. Property damage was estimated at \$1.7 million, seven firefighters were treated for heat exhaustion and smoke inhalation.

In Florida, a golf cart fire occurred in the storage area of a one-story shopping mall in 1990. Sprinklers operated, confined and extinguished the fire. Property damage was estimated at \$1,000 and no injuries were reported.

#### Anchor Stores/Theaters Attached to the Covered Mall Buildings with Automatic Sprinkler Protection

In Michigan, in 1988, a fire was started in an anchor store storage space. Three sprinklers confined the fire until the fire department could fully extinguish the fire. Property damage was estimated at \$279,000, two civilians suffered smoke inhalation and five firefighters were injured.

In California, in 1984, a fire occurred during welding in an interior wall under construction at a sound barrier in a theater. The sprinkler protection in this area was reduced during the theater renovations. Property damage was estimated at \$1,000,000 and no injuries were reported.

A variety of fire journals have also been researched. The journals identify and describe large fires which have occurred. The following is a short summary of each fire which was published in the fire journals.

In New Jersey, a fire started in an unoccupied storage area of a department store in 1992. A single sprinkler activated and almost completely extinguished the fire. Property damage was estimated at \$26,000 and no injuries were reported.

In 1990, a fire had been burning for hours before a passerby called 911 to report the fire. An investigation revealed the fire was arson. No suppression system was provided in the mall. However, the mall area was largely noncombustible and therefore, flame spread was not a major contributing factor. Heat and smoke damage was considerable throughout the structure and direct property damage was estimated at \$1,000,000. No injuries were reported.

#### Other Retail Properties not Considered a Covered Mall Building with Automatic Sprinkler Protection

In Nevada, many fires were started by rioters in 1993. When firefighters arrived at the one-story mall, which housed food/clothing stores, post office, medical offices and professional offices, the sprinklers were controlling the fire in the clinic which was the area of fire origin. Gun shots and sniper attacks hampered the firefighters ability to extinguish the fire. Property damage was estimated at \$2,000,000 and no injuries were reported and one civilian was found dead.

#### Mall Buildings and Anchor Stores Non-Sprinklered or Partially Sprinklered

In New York, a fire originated in an area of cardboard boxes on a first floor loading dock in 1991. The fire quickly spread before occupants became aware and fire department was notified. Automatic sprinklers were present in the common mall area and in the basement of the building but not in the area of fire origin. Property damage was estimated at \$20,000,000, two civilians were killed, and twelve firefighters were injured. Other civilian injuries were reported but not the exact number.

In Pennsylvania, a fire started in a utility room in one of the unsprinklered anchor stores in 1995. The fire then spread above the suspended ceiling assemblies from the store of origin into the mall and other stores. Sprinkler systems were located in two large anchor stores and in the food court of the mall. Property damage was estimated at \$60,000,000 and one firefighter was injured.

In Missouri, a suspicious fire occurred in a cabinet of a store in a shopping in 1981. There was no sprinkler system within the shopping mall. Property damage was estimated at \$888,000 and three firefighters were treated for smoke inhalation.

In California, a short circuit ignited structural members in the concealed area above a furniture store in a shopping mall in 1988. No automatic suppression system was

provided in the shopping mall. Property damage was estimated at \$6,000,000 and no injuries were reported.

In Nevada, a fire of suspicious origin started in the attic of a shopping mall in 1990. No automatic suppression system was provided in the mall. Property damage was estimated at \$5.931 million and two firefighters sustained injuries.

In Pennsylvania, a short circuit ignited a wooden side wall in 1989. No automatic suppression system was present. Property damage was estimated at \$5,000,000 and two firefighters sustained injuries.

In Colorado, a fire occurred in a drug store roof and spread to a department store in 1984. Sprinklers operated and confined the fire to its area of origin. Property damage was estimated at \$15,000,000 and no injuries were reported.

In Georgia, an undetermined fire occurred in a shopping mall in 1983. No automatic suppression system was provided in the mall. The fire had spread through most of the west end of the facility before it was reported to the fire department. Property damage was estimated at \$11,000,000 and firefighters suffered minor injuries.

The National Institute of Standards and Technology also researched covered mall fire occurrences and found many of the same incidents. The following two accounts are additional fires not found by NFPA. The articles are attached.

In Pennsylvania, a fire started due to a flammable vapor in metal deck area in 1994. The fire spread via the mall roof. A partial automatic suppression system was present which assisted in limited the fire. The portion of the mall destroyed did not have a sprinkler system. Property damage was estimated at \$50,000,000 and no injuries were reported.

In California, a fire was started by juveniles in a gazebo in the mall common area in 1982. The fire quickly spread to the wood overhang above. No automatic suppression system was provided in the mall. Property damage was estimated at \$1,000,000 and no injuries were reported.

**Bibliography:** The BOCA National Building Code/1993 Commentary Volume 1; Building Officials & Code Administrators International, Inc.; 1993; Page 4-7  
The BOCA National Building Code/1999 Commentary Volume 1; Building Officials & Code Administrators International, Inc.; 1999; Page 4-7

Standard Building Code 1997 Edition; Southern Building Code Congress International, Inc.; 1997; Page 69

NFPA 101 Life Safety Code 2012 Edition; National Fire Protection Association; 2012; Page 101-306, 101-489

2012 Life Safety Code Handbook; National Fire Protection Association; 2012; Page 1150

NFPA 101 Life Safety Code 2015 Edition; National Fire Protection Association; 2015; Page 101-323, 101-465

ICC Opinion Letter Request; Terry Schultz, 2005

ICC Staff Opinion Letter Response; Gary Nelson; 2005

2012 IBC Code and Commentary Volume 1; International Code Council; 2012; Page 4-16

2015 IBC; International Code Council; 2012; Page 56, 57

Structure Fires by Occupancy 2007-2011 Annual Averages; Fire Analysis and Research Division, National Fire Protection Association; 2013

Structure Fires in Shopping Malls Fire by Years and Selected Incidents; Fire Analysis and Research Division, National Fire Protection Association; Marty Aherns; 1999

Selected Published Incidents Involving Shopping Malls; Fire Analysis and Research Division, National Fire Protection Association; 2014

## *Public Comment 10:*

**Proponent : Steven Orlowski, representing Building Owners and Managers Association, International (sorlowski@boma.org) requests Disapprove.**

**Commenter's Reason:** While reviewing the actions approved by the committee, BOMA realized that the approval of G 77 would adversely affect the design and function of the passageways of covered mall occupancies used as a secondary means of egress. Previously, the code would allow these passageways to function and be constructed similar to an exit passage way, without the additional restrictions which would not allow the occupants to use the passageways as areas to unload stock, temporarily store products and be used for other back house operations. This was also dependant that there were the required number of primary means of egress exits to suffice, without relying on these secondary means of egress. All too often user of the codes fail to realize that these secondary exit passageways are not required by code, but can be used in the event of an emergency provided that they are protected in accordance with the this section. BOMA encourages the assembly to overturn the committee action.

## *Public Comment 11:*

**Proponent : Jennifer Platt, Internatiional Council of Shopping Centers , representing International Council of Shopping Centers (jplatt@icsc.org) requests Disapprove.**

**Commenter's Reason: This public comment is made on behalf of the members of the International Council of Shopping Centers (ICSC) on the code change G-77 proposal to disapprove and approve some modified version of code change G-78. Code Change G-77 will greatly adversely impact existing Mall Buildings and new Mall Buildings.**

Code change G-77 proposal alters the Mall Building exit passageway scoping section to state the following, "Where exit passageways provide a secondary means of egress from a tenant space, the exit passageway shall be constructed in accordance with Section 1024." Section 1024 requires compliance with the two following requirements that impact the typical design and use of exit passageways in Mall Buildings:

1. Penetrations other than equipment and ductwork necessary for the independent pressurization, sprinkler piping, standpipes, electrical raceway for fire department communication and electrical raceway serving the exit passageway and terminating at steel box not exceeding 16 square inches are not permitted.
2. An exit passageway must not be used for any purpose other than as a means of egress and a circulation path. A circulation path is defined as an exterior or interior way of passageway from one place to another for pedestrians. This would prohibit the use of an exit passageway for the loading and unloading of tenant spaces which is common operating procedures for mall tenants.

This code change ignores the unique challenges of a Mall Building in which access to utilities in a common space is necessary for the function of a Mall Building. Further,

by requiring dedicated exit passageways serving only as a means of egress an alternate design to stock tenant spaces must be designed into Mall Buildings.

Existing shopping malls around the country have incorporated utility distribution in exit passageways and serviced tenants via exit passageways without any adverse effects. Absolutely no substantiation for these new code requirements/provisions has been provided.

ICSC will be working to provide additional information/support and intends to speak at the next round of public hearings to support a modified version of the G-78 code change submittal; or if need modification to the G-77 code change to ensure that proper consideration is given to Covered Mall Buildings and the shopping center industry.

### *Public Comment 12:*

**Proponent : William Rowe, representing Self requests Disapprove.**

**Commenter's Reason:** This code change would force properties to change the structure of back of house exit passageways as though they would be utilized for regular and safe customer exit. This would require properties to undertake tasks such as moving generators into ceilings or retrofitting loading docks for pedestrian access. These retrofits would not only be costly and unnecessary, but would likely require use of gross leasable space for this new implementation. There appears no rationale for this proposal. The proposed Code Change G-77 will greatly adversely impact existing Mall Buildings and new Mall Buildings.

### *Public Comment 13:*

**Proponent : Alan Schmiedicker, Forest City Commercial Management, representing self requests Disapprove.**

**Commenter's Reason:** This code change would force properties to change the structure of back of house exit passageways as though they would be utilized for regular and safe customer exit. This would require properties to undertake tasks such as moving generators into ceilings or retrofitting loading docks for pedestrian access. These retrofits would not only be costly and unnecessary, but would likely require use of gross leasable space for this new implementation. There appears no rationale for this proposal.

The proposed Code Change G-77 will greatly adversely impact existing Mall Buildings and new Mall Buildings.



# G78-15

## 402.8.7.1 (New)

### Proposed Change as Submitted

**Proponent :** Gene Boecker (geneb@codeconsultants.com)

## 2015 International Building Code

**Add new text as follows:**

**402.8.7.1 Utility systems in exit passageways** The following utility systems and equipment are permitted in mall exit passageways:

1. Electrical wiring in conduit not greater than 480 volts phase-to-phase and 277 volts phase-to-neutral.
2. Exposed low-voltage wiring.
3. Enclosed junction boxes.
4. Fire alarm equipment and wiring.
5. Noncombustible waste piping.
6. Cold/hot water piping.
7. Automatic fire sprinkler piping.
8. Storm water piping.

All penetrations of fire barriers shall be protected in accordance with Section 714.

**Reason:** The covered mall building provisions (Section 402.8.7) allow for building utility service rooms to open into exit passageways. However, the current text does not specifically address the distribution of utilities within exit passageways of malls. For maintenance reasons, utilities are typically distributed within the service corridors at the rear of the tenant space which, in most cases, also serves as the exit passageway. Section 402.8.7 permits openings from the service rooms into these exit passageways for other than means of egress but does not address the distribution of those utilities once they leave the service room.

Because the covered mall provisions for service rooms allow for service rooms to open into exit passageways, similar low-hazard service equipment should be allowed to be distributed in the exit passageways provided that the penetration is properly protected, egress heights are maintained and egress widths are maintained. By referring to Section 714, proper penetration protection of the fire barrier will occur. Egress heights and widths are addressed elsewhere in the code and would not need to be clarified or repeated herein.

**Cost Impact:** Will not increase the cost of construction

Because the distribution of utilities is currently allowed in a number of cases (one of the legacy codes specifically allowed it) the proposal will not increase costs. The alternatives would require additional costs for horizontal shaft construction and separate service rooms for utility connections.

G78-15 : 402.8.7.1  
(New)-BOECKER5456

---

## Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** The proposal was seen as watering down the Chapter 10 requirements addressing exit passageways. The list would perhaps be too specific. It doesn't tell the code user how to address similar systems. However the committee felt the laundry list shouldn't be included. Some of the terms used are not consistent with related provisions.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : Amy Murdock, Code Consultants, Inc, representing Code Consultants, Incorporated (amym@codeconsultants.com) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

**402.8.7.1 Utility systems distribution in exit passageways.** ~~The following utility systems Utility and service lines associated with mechanical rooms, electrical rooms, building service areas, plumbing equipment and service elevators are permitted to be distributed in exit passageways. Natural gas lines and electrical services greater than 600 volts are not permitted in mall exit passageways.~~

- ~~1. Electrical wiring in conduit not greater than 480 volts phase to phase and 277 volts phase to neutral.~~
- ~~2. Exposed low voltage wiring.~~
- ~~3. Enclosed junction boxes.~~
- ~~4. Fire alarm equipment and wiring.~~
- ~~5. Noncombustible waste piping.~~
- ~~6. Cold/hot water piping.~~
- ~~7. Automatic fire sprinkler piping.~~
- ~~8. Storm water piping.~~

All penetrations of fire barriers shall be protected in accordance with Section 714.

**Commenter's Reason:** Propose to remove the "laundry" list that was focused on at the last hearings.

~~402.8.7.1 Utility systems distribution in exit passageways The following utility systems and equipment are permitted in mall exit passageways:~~

- ~~1. Electrical wiring in conduit not greater than 480 volts phase to phase and 277 volts phase to neutral.~~
- ~~2. Exposed low voltage wiring.~~
- ~~3. Enclosed junction boxes.~~
- ~~4. Fire alarm equipment and wiring.~~
- ~~5. Noncombustible waste piping.~~
- ~~6. Cold/hot water piping.~~
- ~~7. Automatic fire sprinkler piping.~~
- ~~8. Storm water piping.~~

Utilities and service lines associated with the mechanical rooms, electrical rooms, building service areas, plumbing equipment, and service elevators are permitted to

be distributed in exit passageways. Natural gas lines and electrical services greater than 600 volts are not permitted in mall exit passageways.

All penetrations of fire barriers shall be protected in accordance with Section 714.

Reason for code change remains consistent with original submittal request. Further justification as to the need for this code change is evident in the public comments submitted opposing code change G-77 proposal.

The covered mall building provisions (Section 402.8.7) allow for building utility service rooms to open into exit passageways. However, the current text does not specifically address the distribution of utilities within exit passageways of malls.

For maintenance reasons, utilities are typically distributed within the service corridors at the rear of the tenant space which, in most cases, also serves as the exit passageway.

Section 402.8.7 permits openings from the service rooms into these exit passageways for other than means of egress but does not address the distribution of those utilities once they leave the service room.

Because the covered mall provisions for service rooms allow for service rooms to open into exit passageways, similar low-hazard service equipment should be allowed to be distributed in the exit passageways provided that the penetration is properly protected, egress heights are maintained and egress widths are maintained. By referring to Section 714, proper penetration protection of the fire barrier will occur. Egress heights and widths are addressed elsewhere in the code and would not need to be clarified or repeated herein.

Cost Impact: Will not increase the cost of construction

Because the distribution of utilities is currently allowed in a number of cases (one of the legacy codes specifically allowed it) the proposal will not increase costs. The alternatives would require additional costs for parallel corridors.

---

**G78-15**

# G79-15

## 403.1

### **Proposed Change as Submitted**

**Proponent :** Stephen DiGiovanni, representing Southern Nevada Chapter of ICC (sdigiovanni@clarkcountynv.gov)

## **2015 International Building Code**

**Revise as follows:**

**403.1 Applicability.** *High-rise buildings* shall comply with Sections 403.2 through 403.6.

**Exception:** The provisions of Sections 403.2 through 403.6 shall not apply to the following buildings and structures:

1. Airport traffic control towers in accordance with Section 412.3.
2. *Open parking garages* in accordance with Section 406.5.
3. The portion of a building containing a Group A-5 occupancy in accordance with Section 303.6. This exception does not apply to uses that are located on an occupied roof.
4. Special industrial occupancies in accordance with Section 503.1.1.
5. Buildings with primary occupancy of:
  - 5.1. A Group H-1 occupancy;
  - 5.2. A Group H-2 occupancy in accordance with Section 415.8, 415.9.2, 415.9.3 or 426.1; or,
  - 5.3. A Group H-3 occupancy in accordance with Section 415.8.

**Reason:** There is concern about the impact of exceptions 3 and 5.

For exception 3, there are instances where a swimming pool deck is located on the roof of a high-rise building. Being outdoors, those areas could be considered an A-5 occupancy. There is concern about eliminating the high-rise provisions, such as fire alarm coverage, standpipe system coverage, etc, for these areas. In certain jurisdictions, these areas can be used for parties and nightclub uses, which bring with them a higher level of hazard that justifies the application of high-rise provisions, as applicable. This proposal attempts to ensure that the exception does not include roof top uses such as swimming pool decks.

For exception 5, there is concern about any such building that is a portion of a high-rise building. The way that exception 5 reads, if any of these occupancies are collocated with a high-rise building, then the high-rise provisions would not be applicable to the high-rise building. While there is no concern with a H-1 occupancy required to be a separate building by Section 415.7, or a Group H-2 or H-3 occupancy required to be in a detached building per Section 415.8, there is concern about the other H-2 occupancies that may be collocated with a high-rise building. Specifically, LPG facilities described in Section 415.9.2 are not defined, and may be within a high-rise building. Also, NFPA 58 allows bulk LPG facilities to be attached to other structures. The dry cleaning plants described in Section 415.9.3 could be found in larger hotels that have on-site uniform maintenance. Finally, there are larger high-rise complexes that have on-site engineering maintenance staff with the capability of producing combustible dusts in designated maintenance areas. The way exception 5

reads, having any of these H-2 occupancies within or attached to the high-rise building, would seem to say that the high-rise provisions no longer apply. By adding the phrase regarding the primary occupancy, having a minor part of a building be an H-2 occupancy would not negate the applicability to high-rise provisions for that building.

**Cost Impact:** Will increase the cost of construction

Depending on previous interpretations, this proposal may increase construction costs for certain buildings or portions thereof that were not previously constructed in accordance with the high-rise provisions.

G79-15 : 403.1-  
DIGIOVANNI3817

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee found the term 'primary occupancy' lacks definition and therefore would render the code unclear in its application if this proposal were to be approved. Earlier in the hearing the committee debated a variety of proposals trying to clarify the use of roofs. This proponent was encouraged to work with proponents of other occupied roof proposals to address that topic.

**Assembly Motion:**

**As Submitted**

**Online Vote Results:**

**Failed**

Support: 21.7% (69) Oppose: 78.3% (249)

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : Kevin McOsker, representing Southern Nevada Chapter of ICC (ktm@ClarkCountyNV.gov) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

**403.1 Applicability.** *High-rise buildings* shall comply with Sections 403.2 through 403.6.

**Exception:** The provisions of Sections 403.2 through 403.6 shall not apply to the following buildings and structures:

1. Airport traffic control towers in accordance with Section 412.3.
2. *Open parking garages* in accordance with Section 406.5.
3. The portion of a building containing a Group A-5 occupancy in accordance with Section 303.6. ~~This exception does not apply to uses that are located on an occupied roof.~~
4. Special industrial occupancies in accordance with Section 503.1.1.

5. Buildings with primary occupancy of:
  - 5.1. A Group H-1 occupancy;
  - 5.2. A Group H-2 occupancy in accordance with Section 415.8, 415.9.2, 415.9.3 or 426.1; or,
  - 5.3. A Group H-3 occupancy in accordance with Section 415.8.

**Commenter's Reason:** The original motion contained two separate modifications. This Public Comment has removed the modification for occupied roofs within Group A-5 occupancies. The remaining modification is to clarify that a Group H occupancies would need to be the primary occupancy in order to exempt the high-rise provisions. At present, high-rise building of mixed occupancy that contain a Group H-1, H-2 or H-3 occupancy could be interpreted to be exempt from the high-rise provisions. Putting in an H occupancy in mixed use high rise building, should not exempt the entire building from the high rise provisions.

---

**G79-15**

# G80-15

## 403.2.1.1

### **Proposed Change as Submitted**

**Proponent :** Edward Kulik, representing Building Code Action Committee (bcac@iccsafe.org)

## **2015 International Building Code**

### **Revise as follows:**

**403.2.1.1 Type of construction.** The following reductions in the minimum *fire-resistance rating* of the building elements in Table 601 shall be permitted as follows:

1. For buildings not greater than 420 feet (128 000 mm) in *building height*, the *fire-resistance rating* of the building elements in Type IA construction shall be permitted to be reduced to the minimum *fire-resistance ratings* for the building elements in Type IB.  
**Exception:** The required fire-resistance rating of columns supporting floors shall not be reduced.
2. In other than Group F-1, H, M and S-1 occupancies, the *fire-resistance rating* of the building elements in Type IB construction shall be permitted to be reduced to the *fire-resistance ratings* in Type IIA.
3. The *building height* and *building area* limitations of a building containing building elements with reduced *fire-resistance ratings* shall be permitted to be the same as the building without such reductions.

**Reason:** This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at:  
<http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

During the last code development cycle the committee approved a code change proposal that clarified the allowance for H Group uses within a high-rise buildings. During the hearing, committee members correctly questioned why Group H was not included within Section 403.2.1.1 Exception 2 when Groups of a lesser fire hazard potential were included. Since Section 403.2.1.1 was not part of the proposal before the committee, there was no way to address the issue during last cycle.

This proposal addresses the issue identified by the committee and adds Group H to Section 403.2.1.1 Exception 2 wherein Groups F-1, M, and S-1 are currently restricted from lowering their type of construction.

**Cost Impact:** Will increase the cost of construction

The cost of construction for a mixed occupancy high-rise containing an H Group occupancy will be increased by elimination of the ability to reduce the construction

---

## **Public Hearing Results**

**Committee Action:****Approved as Submitted**

**Committee Reason:** H occupancies are actually more hazardous than F-1 and S-1 and should be similarly restricted. If the specific H-occupancies should be specified, such could be revised via public comment.

**Assembly Action :****None**


---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent :** Gregory Nicholls, representing The Preview Group (gnicholls@preview-group.com) requests **Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

**403.2.1.1 Type of construction.** The following reductions in the minimum *fire-resistance rating* of the building elements in Table 601 shall be permitted as follows:

1. For buildings not greater than 420 feet (128 000 mm) in *building height*, the *fire-resistance rating* of the building elements in Type IA construction shall be permitted to be reduced to the minimum *fire-resistance ratings* for the building elements in Type IB.  
**Exception:** The required fire-resistance rating of columns supporting floors shall not be reduced.
2. In other than Group F-1, ~~H~~ H-2, H-3, H-5, M and S-1 occupancies, the *fire-resistance rating* of the building elements in Type IB construction shall be permitted to be reduced to the *fire-resistance ratings* in Type IIA.
3. The *building height* and *building area* limitations of a building containing building elements with reduced *fire-resistance ratings* shall be permitted to be the same as the building without such reductions.

**Commenter's Reason:** The testimony at the hearings noted that additional scrutiny may be appropriate regarding whether or not all Group H occupancies should not be permitted the construction type reduction. Since Group H-4 involves toxics and corrosives and not fire hazards, there is no relevancy to requiring Group H-4 additional fire resistance to the structural frame. The construction type modification would still not be permitted for all other Group H occupancies, all of which do involve regulated fire hazards. The H-1 occupancy is also not listed because H-1 is exempt from the High-rise provisions in Section 403.1 and is limited to a single story, single occupancy, detached building.

# G82-15

## 403.5.2

### **Proposed Change as Submitted**

**Proponent :** Raymond Grill, Arup, representing Arup  
(ray.grill@arup.com)

## **2015 International Building Code**

**Revise as follows:**

**403.5.2 Additional interior exit stairway.** For buildings other than Group R-1 and R-2 that are more than 420 feet (128 000 mm) in *building height*, one additional *interior exit stairway* meeting the requirements of Sections 1011 and 1023 shall be provided in addition to the minimum number of *exits* required by Section 1006.3. The total width of any combination of remaining *interior exit stairways* with one *interior exit stairway* removed shall be not less than the total width required by Section 1005.1. *Scissor stairways* shall not be considered the additional *interior exit stairway* required by this section.

**Exception:** An additional *interior exit stairway* shall not be required to be installed in buildings having elevators used for occupant self-evacuation in accordance with Section 3008.

**Reason:** The requirement for the additional stair in building over 420 was incorporated to address the perceived issue of counter flow in stairs during emergency responder response.

R-1 occupancies have the same occupant loading as R-2 occupancies (200 sf per person). R-2 occupancies should be considered the same as R-2 occupancies for the purpose of this requirement.

**Cost Impact:** Will not increase the cost of construction

This code change will reduce the construction cost for R-1 occupancies over 420 feet in height.

G82-15 : 403.5.2-  
GRILL5345

---

### **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee supported the change in recognition of the similarity between R-1 and R-2 occupant loads. It was also noted that compared to typical office building highrise buildings where stairways are located in the core of the building, R-1 buildings have stairways which are more remotely located. The occupant load and the building configuration makes the 3rd stairway not needed.

**Assembly Action :**

**None**

---

### **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : Raymond Grill, representing Arup - self  
(ray.grill@arup.com) requests Approve as Submitted.**

**Commenter's Reason:** The committee statement supports approval of the proposal. R1 and R2 occupancies have similar occupancy characteristics.

---

**G82-15**

# G83-15

## 403.5.2

### **Proposed Change as Submitted**

**Proponent :** Jonathan Siu, City of Seattle, Department of Planning and Development, representing Washington Association of Building Officials Technical Code Development Committee  
(jon.siu@seattle.gov)

## **2015 International Building Code**

### **Revise as follows:**

**403.5.2 Additional interior exit stairway.** For buildings other than Group R-2 that are more than 420 feet (128 000 mm) in *building height*, one additional *interior exit stairway* meeting the requirements of Sections 1011 and 1023 shall be provided in addition to the minimum number of *exits* required by Section 1006.3. The total ~~width~~ capacity of any combination of remaining *interior exit stairways* with one *interior exit stairway* removed shall be not less than the total ~~width~~ capacity required by Section 1005.1. *Scissor stairways* shall not be considered the additional *interior exit stairway* required by this section.

**Exception:** An additional *interior exit stairway* shall not be required to be installed in buildings having elevators used for occupant self-evacuation in accordance with Section 3008.

**Reason:** This proposal is a clarification to reflect what we believe was intended when this section was placed into the IBC. In the 2015 code, egress "width" and "capacity" were carefully separated in Chapter 10. "Width" refers to a minimum dimension stated in the code for a particular egress component. "Capacity" now refers to a dimension that is calculated based on an occupant load. It appears that the code change that made this separation did not address this section, and the failure to do so results in a question as to what was intended. We believe that the intent is to maintain the capacity of the remaining stairs. This is not an issue for most buildings that we have dealt with, but if the building has large assembly spaces higher up in the building, it can result in another stair being required.

**Cost Impact:** Will not increase the cost of construction  
This proposal is a clarification of the code. If a jurisdiction has been interpreting the code in a way that is consistent with this proposal, there will be no change in cost of construction. If a jurisdiction has been applying the code differently, then there may be an increase in the cost of construction.

G83-15 : 403.5.2-  
SIU4266

---

### **Public Hearing Results**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:**

**Assembly Action :**

**None**

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : William Hall, Portland Cement Association, representing Portland Cement Association (jhall@cement.org) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

**403.5.2 Additional interior exit stairway.** For buildings other than Group R-2 that are more than 420 feet (128 000 mm) in *building height*, one additional *interior exit stairway* meeting the requirements of Sections 1011 and 1023 shall be provided in addition to the minimum number of *exits* required by Section 1006.3. The total capacity of any combination of remaining *interior exit stairways* ~~with~~ without considering one *interior exit stairway* ~~removed~~ shall be not less than the total capacity required by Section 1005.1. *Scissor stairways* shall not be considered the additional *interior exit stairway* required by this section.

**Exception:** An additional *interior exit stairway* shall not be required to be installed in buildings having elevators used for occupant self-evacuation in accordance with Section 3008.

**Commenter's Reason:** Clarifies intent of this section. Eliminates language which could be interpreted as removing a stairway that is still required.

---

G83-15

# G86-15

## 403.5.3.1

### **Proposed Change as Submitted**

**Proponent :** Dave Frable, representing US General Services Administration (dave.frable@gsa.gov)

## **2015 International Building Code**

### **Delete without substitution:**

~~**403.5.3.1 Stairway communication system.** A telephone or other two-way communications system connected to an *approved constantly attended station* shall be provided at not less than every fifth floor in each *stairway* where the doors to the *stairway* are locked.~~

**Reason:** In a companion proposal, we have proposed to is to re-arrange the provisions of stairway reentry and to provide another option for designers of high-rise buildings when considering building security and locking stairway doors from the stairway side of the enclosure. This code change proposal recognizes stairway re-entry provisions that are currently permitted in the 2015 edition of the National Fire Protection Association (NFPA), Life Safety Code. In the companion proposal Section 403.5.3.1 is retained.

This proposal is to delete Section 403.5.3.1. The intent of the communication system is to provide occupants a means to notify an attended location that the stairway prevents its continued use. However, the subject communication system has no operating instructions and it appears to provide a false sense of assurance that the stairway doors will be unlocked in a timely manner since in all likelihood the person being notified is not within the vicinity of the controls within the building to unlock the stairway doors.

**Cost Impact:** Will not increase the cost of construction  
The intent of this code change will reduce cost of construction due to the elimination of the stairway communication system.

G86-15 : 403.5.3.1-  
FRABLE5508

---

### **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The suggestion that the broader use and availability of cell phones negates the need to these communications systems was questioned based on the frequent poor reception for such phones within a steel or steel reinforced stairway. Locked stairways need to have some method to allow folks who either intentionally or unintentionally end up in such stairways and need to have some way to communicate with someone outside the stairway to help them return to the building.

**Assembly Action :**

**None**

---

### **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : Dave Frable, representing US General Services Administration (dave.frable@gsa.gov) requests Approve as Modified by this Public Comment.**

**Replace Proposal as Follows:**

## **2015 International Building Code**

**403.5.3.1 Stairway communication system.** A telephone or other two-way communications system connected to an *approved constantly attended station* shall be provided at not less than every fifth floor in each *stairway* where the doors to the *stairway* are locked.

**Exception:** Stairway doors complying with Section 403.5.3.2.

–

**403.5.3.2 Stairway door re-entry.** The provisions in Section 403.5.3.1 shall not apply, provided that all of the following are met:

1. There shall be no fewer than two levels where it is possible to leave the stairway enclosure to access another exit.
2. There shall be not more than four stories intervening between stories where it is possible to leave the stairway enclosure to access another exit.
3. Re-entry shall be possible on the top story or next-to-top story served by the stairway enclosure, and such story shall provide access to another exit.
4. Stairway doors allowing re-entry shall be identified as such on the stairway side of the door leaf.
5. Stairway doors not allowing re-entry shall be provided with a sign on the stairway side indicating the location of the nearest door opening, in each direction of travel, that allows re-entry or exit.

**403.5.3.2.1 Stairway re-entry signage** Where the provisions of Section 403.5.3.2 are used, signage on the stairway door leaves shall be required as follows;

1. Stairway doors allowing re-entry shall be identified as such on the stairway side of the door leaf.
2. Stairway doors not allowing re-entry shall be provided with a sign on the stairway side indicating the location of the nearest door opening, in each direction of travel that allows re-entry or exit.

**Commenter's Reason:** The intent of this code change is to address the need to install a stairway communication system where stairway doors are locked and incorporate stairway door re-entry provisions within a stairway enclosure. Currently the Code requires that when stairway doors are locked from the stairway side a stairway communication system must be installed. The intent of the stairway communication system is to provide occupants a means to notify an attended location that the stairway prevents its continued use. However, the proposed new language in the exception provides an alternative design method that specifies specific stairway door re-entry provisions to permit occupants to re-enter the building to access another stairway on selected floors, eliminating the need for requiring a communication system in the stairway. The proposed stairway re-entry provisions are based on the stairway re-entry provisions that are currently permitted in the 2015 edition of the National Fire Protection Association (NFPA), Life Safety Code.



# G87-15

## 403.6.1

### Proposed Change as Submitted

**Proponent :** Brad Schiffer, representing self (brad@taxis-usa.com)

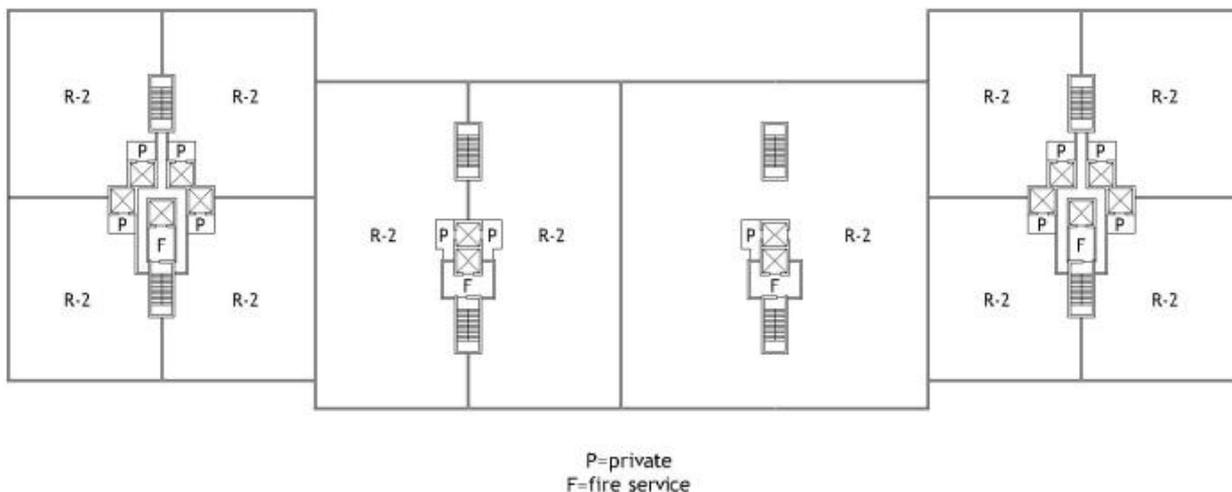
## 2015 International Building Code

**Revise as follows:**

**403.6.1 Fire service access elevator.** In buildings with an occupied floor more than 120 feet (36 576 mm) above the lowest level of fire department vehicle access, no fewer than two fire service access elevators, or all elevators, whichever is less, shall be provided in accordance with Section 3007. Each fire service access elevator shall have a capacity of not less than 3,500 pounds (1588 kg) and shall comply with Section 3002.4.

**Exception:** One fire service access elevator is required in Group R-2 occupancies with a hoistway group serving not more than six dwelling units.

**Reason:** Residential buildings with private elevators have multiple elevator groups serving each level. These elevator groups have the private elevators serving the units with a service elevator meeting the Fire Service Access Elevator requirements. Requiring two Fire Service Access Elevators causes at least one of the private elevators to become a Fire Service Access Elevator. This also requires that private elevator to provide Phase 1 recall. These cores serve a small occupant load.



**Cost Impact:** Will not increase the cost of construction  
Due to the removal of an additional Fire Service Access Elevator this will decrease building costs.

G87-15 : 403.6.1-  
SCHIFFER4483

### Public Hearing Results

**Committee Action:****Disapproved**

**Committee Reason:** The proposal is unclear and doesn't seem to reflect the reason statement provided by this proponent. The reason implied each unit is served by a private elevator, but no such text is found in the proposal. Further the diagram implies that the fire service access elevator can't be used for regular, daily use by the occupants. Such is a false assumption.

**Assembly Action :****None**

---

**Individual Consideration Agenda*****Public Comment 1:***

**Proponent : Brad Schiffer, representing self (brad@taxi-usa.com) requests Approve as Modified by this Public Comment.**

**Modify as Follows:****2015 International Building Code**

**403.6.1 Fire service access elevator.** In buildings with an occupied floor more than 120 feet (36 576 mm) above the lowest level of fire department vehicle access, no fewer than two fire service access elevators, or all elevators, whichever is less, shall be provided in accordance with Section 3007. Each fire service access elevator shall have a capacity of not less than 3,500 pounds (1588 kg) and shall comply with Section 3002.4.

**Exception:** One fire service access elevator is required in Group R-2 occupancies with a hoistway group serving not more than six-four dwelling units per level that have private elevators.

**Commenter's Reason:**

The intent of the proposed Exception is to allow residential buildings that, in lieu of a single large core serving the whole floor, are designed to have multiple elevator groups, to only require one fire service access elevator.

This type of design has small floor areas that do not require the amount of staging that a full floor would. The other private elevators could be placed in fire service use.

Typical of this type of design is to have the service elevator be the fire service elevator (always available to the residents for "back of house" use) and to provide private elevators which open directly into the dwelling units.

---

**G87-15**

# G88-15

## 404.2

### Proposed Change as Submitted

**Proponent :** Jeff Hugo, National Fire Sprinkler Association, representing National Fire Sprinkler Association (hugo@nfsa.org)

## 2015 International Building Code

### Revise as follows:

**404.2 Use.** The floor of the *atrium* shall not be used for other than low fire hazard uses and only *approved* materials and decorations in accordance with the *International Fire Code* shall be used in the *atrium* space.

**Exception:** The *atrium* floor area is permitted to be used for any *approved* use where the individual space, regardless of the ceiling height of the atrium, is provided with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

**Reason:** This proposal clarifies that the sprinkler exception in Section 404.3 cannot be used when the floor of the atrium is used for other than a low fire hazard use. While NFPA 13 does not limit the height of when sprinklers are used, the exception in 404.3 is mistakenly applied when using this section.

**Cost Impact:** Will not increase the cost of construction  
No technical change made to code.

G88-15 : 404.2-  
HUGO4517

---

### Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee was not convinced that sprinklers are effective in taller atriums even where the use of the atrium for isn't limited.

**Assembly Action :**

**None**

---

### Individual Consideration Agenda

#### *Public Comment 1:*

**Proponent :** Jeff Hugo, National Fire Sprinkler Association, representing National Fire Sprinkler Association (hugo@nfsa.org) requests **Approve as Modified by this Public Comment.**

### Modify as Follows:

## 2015 International Building Code

**404.2 Use.** The floor of the *atrium* shall not be used for other than low fire hazard uses and only *approved* materials and decorations in accordance with the *International Fire Code* shall be used in the *atrium* space.

**Exception:** The *atrium* floor area is permitted to be used for any *approved* use where the individual space, ~~regardless of the~~ and ceiling height of the atrium, is *are* provided with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

**Commenter's Reason:** The effectiveness of fire sprinklers over 55 feet in height was not in question in the original proposal. However, NFSA would disagree that sprinklers are not effective at great heights.

The testing that established the 55 feet took place at UL after the McCormick Place Fire in 1967. 55 feet was established because at the McCormick Place fire, sprinklers operated successfully at 50 feet. The UL tests confirmed the 50 feet height and added ten percent. In the 1981 edition of NFPA 101, one of the new special features was a new section dealing with atriums, requiring sprinklers throughout, but permitted the code official to waive the requirements for sprinklers at the top of the atrium when the ceiling was more than 55 feet above the floor. The burden of the decision to exclude sprinklers over 55 feet was put to the code official because testing at that time was limited to 50 feet. The intent was that the code official could waive sprinklers at the ceiling when provided with further testing or proof that sprinklers were not to be effective. This atrium criteria has changed little in the past 30+ years, but the option for the code official to waive sprinklers at the ceiling has morphed into more of the rule than the exception in the legacy codes and in the IBC. The UL testing mentioned above did not use or experiment with different levels of fuel sources. Only the operation of sprinklers was tested, meaning only the standard fuel load of wood, paper and cotton fabric was used to simulate fire. The fuel loads at the atrium floors are certainly much different today and the inclusion of plastics can be more intense than they were almost 50 years ago.

The IBC, as written, would permit the omission of sprinklers at a ceiling with a moderate to high fuel load. This proposal and modification aims to prohibit the omission of ceiling sprinklers when the fuel loads at the atrium floor are in excess of the low hazard according to the IFC.

Sprinklers should not be omitted from high ceilings without a great deal of thought and analysis. The testing that put the 55 foot rule in the code did not include modern day higher hazard fuel loads, such as plastics and synthetics at the atrium floor. The 55 feet rule in the IBC and other codes only applies to atriums. It is certainly proven that in the past 50 years, sprinklers have been installed and proven effective at much higher heights.

---

G88-15

# G89-15

## 404.2, [F] 404.3

### Proposed Change as Submitted

**Proponent :** Robert Davidson, representing Myself  
(rjd@davidsoncodeconcepts.com)

## 2015 International Building Code

### Revise as follows:

**404.2 Use.** ~~The floor of the atrium shall not be used for other than low fire hazard uses and only~~ Only approved materials and decorations in accordance with the *International Fire Code* shall be used in the *atrium* space.

**Exception:** ~~The atrium floor area is permitted to be used for any approved use where the individual space is provided with an automatic sprinkler system in accordance with Section 903.3.1.1.~~

**[F] 404.3 Automatic sprinkler protection.** *An approved automatic sprinkler system shall be installed throughout the entire building.* The floor of the atrium shall not be used for any activities that exceed the designed capability of the automatic sprinkler system. Where a smoke control system is present the use and arrangement of the atrium floor shall be consistent with the design of the smoke control system.

### Exceptions:

1. That area of a building adjacent to or above the *atrium* need not be sprinklered provided that portion of the building is separated from the *atrium* portion by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.
2. ~~Where the ceiling of the atrium is more than 55 feet (16 764 mm) above the floor, sprinkler~~ Sprinkler protection at the ceiling of the *atrium* is not required: provided the following criteria are met:

2.1. The ceiling of the atrium is more than 55 feet (16764 mm) above the floor, and

2.2. The floor of the atrium shall not be used for other than low fire hazard uses.

**Reason:** The purpose of this proposal is to improve the code language to obtain the intended goal of the sections involved. There is no intention of a major technical change or increase in requirements.

The existing Section 404.2 has two requirements, low fire hazard use restriction for the atrium and compliance with the fire code for materials and decorations. Then there is an exception when a sprinkler system is present, however, Section 404.3 mandates a sprinkler system to be present anytime there is an atrium. So the exception would always apply unless exception 2 in Section 404.3 is applied.

The other problem with the language in 404.2 and that the exception could be read to give exception to the fire code provisions on materials and decorations and this creates a conflict with the fire code.

The proposed changes are to simply have Section 404.2 maintain the language setting up the relationship with the fire code for materials and decorations. The floor use of the atrium is then related directly to the designed capabilities of the sprinkler system and a smoke control system if one is present, both of which is a normal part of the design process for fire protection systems, (i.e., what is the expected fuel load of the atrium). This is done with the language proposed to be added to Section 404.3.

The final modification is to take the language restricting the use of the atrium to low fire hazard uses and attach that requirement to Section 404.3, Exception 2 where the atrium ceiling protection is eliminated.

The intent of the current language is maintained, but technical application of the requirements are clarified with this proposal.

**Cost Impact:** Will not increase the cost of construction  
Since there is no increase in code requirements there will not be an increase in costs.

G89-15 : 404.2-  
DAVIDSON5297

---

## **Public Hearing Results**

### **Committee Action:**

**Disapproved**

**Committee Reason:** While the committee did find merit in the reorganization of these provisions, the remained discomfort in two areas. 1. Is the change to 404.2 changing the intent of that section? Based on testimony that there is no science behind the 55 foot exemption, committee members expressed concern about the sprinkler waiver at any height. An example was provided where the fire isn't at the floor level of the atrium, but at an upper level where those floors might not be 55 below the roof. There needs to be clarification between the potential fire location and the location of any ceiling where sprinklers would be waived.

### **Assembly Motion:**

**As Modified**

### **Online Vote Results:**

**Failed**

Support: 33.13% (109) Oppose: 66.87% (220)

### **Assembly Action :**

**None**

### **Online Floor Modification:**

**[F] 404.3 Automatic sprinkler protection.** An *approved automatic sprinkler system* shall be installed throughout the entire building. ~~The floor of the atrium shall not be used for any activities that exceed the designed capability of the automatic sprinkler system. Where a smoke control system is present the use and arrangement of the atrium floor shall be consistent with the design of the smoke control system.~~

### **Exceptions:**

1. That area of a building adjacent to or above the *atrium*

need not be sprinklered provided that portion of the building is separated from the *atrium* portion by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.

2. Sprinkler protection at the ceiling of the *atrium* is not required provided the following criteria are met:

- 2.1. The ceiling of the *atrium* is more than 55 feet (16764 mm) above the floor, and

- 2.2. The floor of the *atrium* shall not be used for other than low fire hazard uses.

---

## **Individual Consideration Agenda**

### ***Public Comment 1:***

**Proponent : Robert Davidson, Davidson Code concepts, LLC, representing Self (rjd@davidsoncodeconcepts.com) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

**[F] 404.3 Automatic sprinkler protection.** ~~An approved automatic sprinkler system shall be installed throughout the entire building. The floor of the atrium shall not be used for any activities that exceed the designed capability of the automatic sprinkler system. Where a smoke control system is present the use and arrangement of the atrium floor shall be consistent with the design of the smoke control system.~~

#### **Exceptions:**

1. That area of a building adjacent to or above the *atrium* need not be sprinklered provided that portion of the building is separated from the *atrium* portion by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.
2. Sprinkler protection at the ceiling of the *atrium* is not required provided the following criteria are met:
  - 2.1. The ceiling of the atrium is more than 55 feet (16764 mm) above the highest floor level area within the atrium, and
  - 2.2. The floor of the atrium shall not be used for other than low fire hazard uses.

**Commenter's Reason:** The effectiveness of fire sprinklers over 55 feet in height was not in question in the original proposal. The proposal intended to simply re-arrange the language and clarify the intent. During the hearing the Committee raised

the issue of whether the 55 foot sprinkler exception should be provided in cases where there are floor spaces within the atrium above the lowest atrium floor level where the measurement is taken from. This type of arrangement is common.

The testing that established the 55 feet took place at UL after the McCormick Place Fire in 1967. 55 feet was established because at the McCormick Place fire, sprinklers operated successfully at 50 feet. The UL tests confirmed the 50 feet height and added ten percent. In the 1981 edition of NFPA 101, one of the new special features was a new section dealing with atriums, requiring sprinklers throughout, but permitted the code official to waive the requirements for sprinklers at the top of the atrium when the ceiling was more than 55 feet above the floor. The burden of the decision to exclude sprinklers over 55 feet was put to the code official because testing at that time was limited to 50 feet. The intent was that the code official could waive sprinklers at the ceiling when provided with further testing or proof that sprinklers were not to be effective. This atrium criteria has changed little in the past 30+ years, but the option for the code official to waive sprinklers at the ceiling has morphed into more of the rule than the exception in the legacy codes and in the IBC. The UL testing mentioned above did not use or experiment with different levels of fuel sources. Only the operation of sprinklers was tested, meaning only the standard fuel load of wood, paper and cotton fabric was used to simulate fire. The fuel loads at the atrium floors are certainly much different today and the inclusion of plastics can be more intense than they were almost 50 years ago.

The IBC, as written, would permit the omission of sprinklers at a ceiling with a moderate to high fuel load. This proposal and modification aims to prohibit the omission of ceiling sprinklers when the fuel loads at the atrium floor are in excess of the low hazard according to the IFC by re-arranging the language to provide improved technical clarity.

Sprinklers should not be omitted from high ceilings without a great deal of thought and analysis. The testing that put the 55 foot rule in the code did not include modern day higher hazard fuel loads, such as plastics and synthetics at the atrium floor. The 55 feet rule in the IBC and other codes only applies to atriums. It is certainly proven that in the past 50 years, sprinklers have been installed and proven effective at much higher heights.

This public comment addresses the committee concern by adding language to restrict the application of the 55 foot sprinkler exception when there are floor spaces within the atrium above the lowest floor level of the atrium.

During the hearing a friendly amendment was suggested to eliminate the two new sentences proposed to be added to section 404.3 concerning the sprinkler and smoke control systems since these topics are covered by other portions of the IBC and IFC. This public comment incorporates that suggested modification.

# G91-15

## 404.5

### **Proposed Change as Submitted**

**Proponent :** Raymond Grill, Arup, representing Arup  
(ray.grill@arup.com)

## **2015 International Building Code**

**Revise as follows:**

**404.5 Smoke control.** A smoke control system shall be installed in accordance with Section 909.

### **Exception Exceptions:**

1. In other than Group I-2, and Group I-1, Condition 2, smoke control is not required for *atriums* that connect only two *stories*.
2. In other than Group I-2 and Group I-1, Condition 2, smoke control is not required for atriums where levels above the lowest level are separated from the atrium in accordance with Section 404.6.

**Reason:** In the event of a fire on the lowest level of the atrium, the atrium space will provide a heat and smoke sink that would enhance the safety of occupants at the base of the atrium. Heated products of combustion will rise and will allow more time for egress. The separation of upper levels in accordance with 404.6 precludes exposure to occupants on upper levels.

Smoke removal after the event can be performed in the same manner as in any other building without an atrium. There is no greater exposure presented.

In other sections of the code, multiple interconnected levels are allowed without smoke control. Section 712.1.3.1 allows an unlimited number of levels in Group B and M occupancies to be interconnected by escalators when draft stops and sprinklers are provided around the floor opening. Section 1019.3 allows exit access stairs to interconnect an unlimited number of stories in Group B and M occupancies to be interconnected without shaft enclosures if draft stops and sprinklers are provided around the openings. The code allows escalators and exit access stairs to interconnect up to 4 stories in other occupancies without shaft enclosures provided draft stops and sprinklers are provided around the floor openings.

The proposed exception would present less of a fire safety risk than is currently allowed by the code.

**Cost Impact:** Will not increase the cost of construction

The proposed exception could significantly reduce the cost of construction and reduce the ongoing maintenance cost of the building since a system requiring regular testing would no longer be required.

G91-15 : 404.5-  
GRILL4975

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The proposal appears to allow the rationale analysis for the capacity of the smoke control system. The committee was unclear that this is a

valid alternative to the atrium smoke control requirement.

**Assembly Action :**

**None**

---

**Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : Raymond Grill, Arup, representing Arup - Self (ray.grill@arup.com) requests Approve as Submitted.**

**Commenter's Reason:** If there are no open levels to the atrium above the lowest level, a smoke control system should not be required.

*Public Comment 2:*

**Proponent : Gregory Nicholls, representing The Preview Group (gnicholls@preview-group.com) requests Approve as Submitted.**

**Commenter's Reason:** The proposal to allow the atrium to pass through upper floors without smoke control expands the options for compliance without sacrificing life safety. Testimony at the hearings showed that having all floors except for the base level floor separated as required for the shaft equivalency already in the atrium section is actually more restrictive than what exists in current text. No matter how many floors an atrium passes through, it remains an accepted alternative to a fully enclosed shaft. Since this would only allow one level to be open beyond the enclosure of the atrium shaft, it is more conservative than code which allows two stories to be fully open without smoke control. As the original reason statement also indicated, the atrium shaft would create a smoke and heat sink to prevent migration to the lowest level.

---

**G91-15**

# G93-15

## 404.6

### **Proposed Change as Submitted**

**Proponent :** Stephen DiGiovanni, Clark County Building Department, representing Southern Nevada Chapter of ICC (sdigiovanni@clarkcountynv.gov)

## **2015 International Building Code**

### **Revise as follows:**

**404.6 Enclosure of atriums.** *Atrium* spaces shall be separated from adjacent spaces by a 1-hour *fire barrier* constructed in accordance with Section 707 or a *horizontal assembly* constructed in accordance with Section 711, or both.

### **Exceptions:**

1. A *fire barrier* is not required where a glass wall forming a smoke partition is provided. The glass wall shall comply with all of the following:
  - 1.1. Automatic sprinklers are provided along both sides of the separation wall and doors, or on the room side only if there is not a walkway on the *atrium* side. The sprinklers shall be located between 4 inches and 12 inches (102 mm and 305 mm) away from the glass and at intervals along the glass not greater than 6 feet (1829 mm). The sprinkler system shall be designed so that the entire surface of the glass is wet upon activation of the sprinkler system without obstruction;
  - 1.2. The glass wall shall be installed in a gasketed or similarly sealed frame in a manner that the framing system deflects without breaking (loading) the glass before the sprinkler system operates; and
  - 1.3. Where glass doors are provided in the glass wall, they shall be either *self-closing* or automatic-closing.
2. A *fire barrier* is not required where a glass-block wall assembly complying with Section 2110 and having a  $3/4$ -hour *fire protection rating* is provided.
3. A *fire barrier* is not required between the *atrium* and the adjoining spaces of any three floors of the *atrium* provided such spaces are accounted for in the design of the smoke control system.

**Reason:** The term "gasket" is generally defined as "*a shaped piece or ring of rubber or other material sealing the junction between two surfaces...*". In this instance, it refers to a pre-manufactured (shaped) piece that is compressed to form a sealed junction between the glass and the frame that is meant to restrict the passage of gases between them.

The word "gasketed" does not allow for structural or wet-set glazed systems to be used. However, these tested assemblies are approved for rated glass, and do not utilize gaskets.

For example, PLO/WA90-01 uses PVC tape, sealant, and angle stops. The frame is still being loaded but no gaskets are used. The current language is overly restrictive given that there are proven technologies available that produce the same outcomes. This allows the use of other materials that address unique designs or systems not currently anticipated in the code.

Additionally, traditional "gaskets" in frames have been prohibited in many Group I-3 (detention) occupancies. This is because gaskets can potentially be removed and used as weapons by the inmates.

Therefore, it is important to clarify that the use of other approved methods to affix and/or seal the glass to the frame are acceptable methods of compliance. This proposal is intended to include products based on new technology.

**Cost Impact:** Will not increase the cost of construction  
This proposal does not increase construction costs as it only offers an option to the current requirement, without removing or changing the current requirements.

G93-15 : 404.6-  
DIGIOVANNI3820

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee was supportive of the concept of allowing other solutions to the windows 'gasketing' but felt the proposed language was too open ended. If the proposal was revised along the lines of 'and other approved materials', it would allow for the building official to review and accept other methodologies. The committee wanted to make sure that the common practice of 'butt jointing' glazing, frequently used in such locations, was clearly addressed in revised text.

**Assembly Motion:**

**As Submitted**

**Online Vote Results:**

**Successful**

Support: 54.55% (174) Oppose: 45.45% (145)

**Assembly Action :**

**Approved as Submitted**

---

## **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : Assembly Action**

**requests Approve as Submitted.**

**Commenter's Reason:** This code change proposal is on the agenda for individual consideration because the proposal received a successful assembly action. The assembly action for Approve as Submitted was successful by a vote of 54.55% (174) to 45.45% (145) by eligible members online during the period of May 14 - May 28, 2015.

G93-15

---

# G97-15

## 406.3

### **Proposed Change as Submitted**

**Proponent :** William King, City of Alexandria, representing Virginia Building Code Officials Association (william.king@alexandriava.gov)

### **2015 International Building Code**

**Revise as follows:**

**406.3 Private garages and carports.** Private garages and carports shall comply with Sections 406.3.1 through 406.3.6.

**Exception:** Private garages conforming to the requirements of public parking garage in accordance with Section 406.4.

-

**Reason:** Based upon the current definition of private garage, a parking garage for an apartment building would be a private garage and subject to limitations including a size limitation of 1,000 sf unless separated with fire barriers. In highly urbanized jurisdictions, parking for apartment complexes are provided either separate parking garages or underground parking. This parking is exclusively for the use of the tenants so would qualify as a private garage. These structures are currently constructed as either open or enclosed parking garages due to the number of cars and the scale of the structures. Limiting the size of these larger parking structures appears to be an unintended consequence of this new definition and without this exception large scale parking garages used just by the building's tenants would effectively be prohibited. This exception would restore the options that were previously available and widely utilized. Given the occupants familiarity with garages that they park in every day, these private garages would provide a higher level of occupant safety than an equivalent public garage if designed to the same standard.

**Cost Impact:** Will not increase the cost of construction  
Given that the current code would require private parking garages to be subdivided into 1,000 sf sections with fire barriers and associated opening protectives. This exception would remove all of this additional construction therefor reducing the cost of construction.

G97-15 : 406.3-  
KING3250

---

### **Public Hearing Results**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The proposal provides clarity that larger garages can be built according to the public garage standards even where the use is limited to the private use of the building tenants. Approval may sent up a circular reference with Section 406.4.

**Assembly Action :**

**None**

---

### **Individual Consideration Agenda**

## *Public Comment 1:*

**Proponent : Kathleen Petrie, representing City of Seattle, Department of Planning and Development (kathleen.petrie@seattle.gov) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

**406.3 Private garages and carports.** Private garages and carports shall comply with Sections 406.3.1 through 406.3.6-

**Exception:** ~~Private garages conforming to the requirements of public parking garage in accordance , or shall comply~~ with Section 406.4.

-  
**Commenter's Reason:** We support this code proposal which allows private garages to comply with the requirements for either private or public garages. This public comment merely clarifies the proposal because the the option to choose is more accurately an alternate path instead of an exception.

---

**G97-15**

# G101-15

## TABLE 406.5.4

### Proposed Change as Submitted

**Proponent :** Stephen Skalko, representing Precast/Prestressed Concrete Institute (svskalko@cox.net)

## 2015 International Building Code

Revise as follows:

**TABLE 406.5.4  
OPEN PARKING GARAGES AREA AND HEIGHT**

TYPE OF CONSTRUCTION	AREA PER TIER (square feet)	HEIGHT (in tiers)		
		Ramp access	Mechanical access	
			Automatic sprinkler system	
			No	Yes
IA	Unlimited	Unlimited	Unlimited	Unlimited
IB	Unlimited	12 tiers	12 tiers	18 tiers
IIA	<del>50,000</del> <u>117,000</u>	10 tiers	10 tiers	15 tiers
IIB	<del>50,000</del> <u>78,000</u>	8 tiers	8 tiers	12 tiers
IV	50,000	4 tiers	4 tiers	4 tiers

For SI: 1 square foot = 0.0929 m<sup>2</sup>.

**Reason:** During the development of the International Building Code the drafting committees commonly used the least stringent fire safety provisions from one of the legacy codes (i.e BOCA National Building Code, Standard Building Code, Uniform Building Code) in establishing the requirements. However, for open parking garages the least stringent values in the Standard Building Code (SBC) were not used. The SBC permitted open parking structures of non-combustible construction with less fire resistance (i.e. SBC Type IV construction, IBC Type II construction) to be built up to 400,000 sqft in area per tier. This area value, which was placed in the SBC in the early 1980's, was based on the use of noncombustible materials for construction of the open parking structure, the open sided features for the parking structure which reduced the risk of adverse impact from vehicle fires and the documented low fire

risk vehicles pose to the stability of open parking structures[1],[2]. Additional studies of fire experience in open parking structures in the United States since those earlier ones still supports the conclusion that vehicle fires pose a low fire risk to the parking structure. The more recent analysis of parking garage structure fires (i.e NFPA[3], Parking Market Research Company [4]) by the Fire Safety Committee of the Parking Consultants Council concluded that in about 98.7% of the fires no structural damage occurred due to the parking structure fires studied[5]. This suggests that the present values in Table 406.5.4 for Open Parking Garages of IBC Type II construction are more stringent than necessary based on the low risk of fire damage to the structural elements from vehicle fires and should be permitted to increase.

Parking garages are classified as Group S-2, Low-hazard occupancies in Section 311.3 of the IBC, whether open or enclosed. For enclosed parking garages Table 506.2 permits sprinklered multi-story garages to be 117,000 square feet in area for Type IIA construction and 78,000 square feet for Type IIB construction. Table 406.5.4 recognizes the benefit of having open sides in the parking garage to reduce the risk from fire in lieu of providing sprinkler protection. Based on the low fire risk from vehicle fires and the open sided features of these garages this proposal will permit open parking garages of Type II construction to be built to the same areas permitted for sprinklered enclosed parking garage.

**Bibliography:** [1] Harris, Dr. Leslie, Market Research Associates, Survey of Fire Experience in Automobile Parking Structures in the United States and Canada, January 31, 1972.

[2] Harris, Dr. Leslie, Market Research Associates, 1979 Update of the Survey of Fire Experience in Automobile Parking Structures in the United States and Canada, January 31, 1979.

[3] Ahrens, Marty, National Fire Protection Association, Structure and Vehicle Fires in General Vehicle Parking Garages, January 2006

[4] Dendra, Dale F., Parking Market Research Company, McLean, VA, Parking Garage Fires (A Statistical Analysis of Parking Garage Fires in the United States 1986-1988), April 1992

[5] Parking Consultants Council Fire Safety Committee, Parking Structure Fire Facts, December 2008

**Cost Impact:** Will not increase the cost of construction

Open parking garages of Type II construction that exceed 50,000 square feet must be built to requirements of at least Type IB construction. Permitting larger open parking garages of Type IIA and IIB construction will result in a reduction in cost through savings in material and construction methods required for buildings that meet Type IB construction.

G101-15 : T406.5.4-  
SKALKO5478

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** There was support for some increase in area based on moving to higher levels of building construction, however the committee was not convinced that the areas proposed by the proponent are appropriate. The committee might be comfortable with a large increase where sprinklers systems are provided.

**Assembly Action :**

**None**

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : Stephen Skalko, Stephen V. Skalko, P.E. & Associates, LLC, representing Precast/Prestressed Concrete Institute requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

**TABLE 406.5.4  
OPEN PARKING GARAGES AREA AND HEIGHT**

TYPE OF CONSTRUCTION	AREA PER TIER (square feet)	HEIGHT (in tiers)		
		Ramp access	Mechanical access	
			Automatic sprinkler system	
			No	Yes
IA	Unlimited	Unlimited	Unlimited	Unlimited
IB	Unlimited	12 tiers	12 tiers	18 tiers
IIA	<del>117,000</del> <u>75,000</u>	10 tiers	10 tiers	15 tiers
IIB	<del>78,000</del> <u>50,000</u>	8 tiers	8 tiers	12 tiers
IV	50,000	4 tiers	4 tiers	4 tiers

For SI: 1 square foot = 0.0929 m<sup>2</sup>.

**Commenter's Reason:** The values in Table 406.5.4 for Open Parking Garages are based on the use of noncombustible or fire resistant materials for construction of the open parking structure and the open sided features for the parking structure. These features reduce the risk of adverse impact from vehicle fires and such fire incidents have been documented to pose a low risk to the stability of open parking structures [\[1\]](#), [\[2\]](#).

Additional studies of fire experience in open parking structures in the United States since those earlier ones still supports the conclusion that vehicle fires pose a low

fire risk to the open parking structure. The more recent analysis of parking garage structure fires by the Fire Safety Committee of the Parking Consultants Council [i.e. NFPA[3], Parking Market Research Company [4]] concluded that in about 98.7% of the fires no structural damage occurred due to the parking structure fires studied[5]. This suggests that the present values in Table 406.5.4 for Open Parking Garages of IBC Type II construction are more stringent than necessary based on the low risk of fire damage to the structural elements from vehicle fires and should be permitted to increase.

At the first hearing it was pointed out that the aggregate allowable area proposed by G101-15 for Types IIA and IIB open parking garages was much larger than that permitted for a sprinklered S-2, enclosed parking garage based on Table 504.4 and 506.2 values in the IBC. Some of the General Code Development Committee agreed there was merit to allow bigger open parking garages when constructed using buildings of fire resistive construction, however the table values proposed in G101-15 were considered too large and the code change was recommended for disapproval.

Since the studies show a very low fire risk of damage to open parking structures from vehicle fires and that some increase is merited for fire rated construction, this public comment modifies the original submittal and permits an increase in the allowable floor area for open parking garages of Type IIA construction consistent with that permitted for sprinklered S-2 enclosed garages. The proposed allowable floor area per tier for Type IIA open parking garages is reduced from 117,000 sqft to 75,000 sqft. This value is based on the common modular bay spacing for open parking garages which results in economical construction. The allowable area per tier for open parking garages of Type IIB construction will remain at the present code allowed value of 50,000 sqft per tier instead of the proposed value of 78,000 sqft.

Finally, the total aggregate area proposed for Type IIA open parking garages, based on 10 tiers at 75,000 sqft per tier, is similar to the aggregate allowable floor area for a sprinklered S-2, enclosed parking garage based on Tables 504.4 and 506.2. Permitting larger open parking garages of Type IIA construction will result in a reduction in cost without any compromise in fire safety through savings in material and construction methods required for open parking structures that would otherwise have to meet Type IB construction.

[1] Harris, Dr. Leslie, Market Research Associates, *Survey of Fire Experience in Automobile Parking Structures in the United States and Canada*, January 31, 1972.

[2] Harris, Dr. Leslie, Market Research Associates, *1979 Update of the Survey of Fire Experience in Automobile Parking Structures in the United States and Canada*, January 31, 1979.

[3] Ahrens, Marty, National Fire Protection Association, *Structure and Vehicle Fires in General Vehicle Parking Garages*, January 2006

[4] Dendra, Dale F., Parking Market Research Company, McLean, VA, *Parking Garage Fires (A Statistical Analysis of Parking Garage Fires in the United States 1986-1988)*, April 1992

[5] Parking Consultants Council Fire Safety Committee, *Parking Structure Fire Facts*, December 2008

---

**G101-15**

# G102-15

## 406.6.2

### **Proposed Change as Submitted**

**Proponent :** Edward Kulik, representing Building Code Action Committee (bcac@iccsafe.org)

## **2015 International Building Code**

**Revise as follows:**

**406.6.2 Ventilation.** A mechanical ventilation system and an exhaust system shall be provided in accordance with Sections 404 and 502.13 of the International Mechanical Code.

**Reason:** Section 404 of the IMC provides specific requirements for the ventilation of an enclosed parking garage. There are additional requirements for the exhaust system for enclosed parking garages in Section 502.13 of the IMC. Identifying the specific sections will assist in ensuring all mechanical requirements for parking garages are used.

This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

**Cost Impact:** Will not increase the cost of construction

This code change proposal will not increase the cost of construction. The proposal attempts to clarify the code, but does not make any technical changes to code requirements.

G102-15 : 406.6.2-  
KULIK4799

---

### **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee felt the proposal added words that are redundant because the comprehensive term 'ventilation' includes the more specific term of exhaust. As the IMC has distinct provisions which may change, the committee was uncomfortable with references to specific sections of another code.

**Assembly Action :**

**None**

---

### **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : Edward Kulik, representing ICC Building Code Action Committee (bcac@iccsafe.org) requests Approve as Modified by**

**this Public Comment.**

**Modify as Follows:**

## **2015 International Building Code**

**406.6.2 Ventilation.** A mechanical *ventilation* system and an exhaust system shall be provided in accordance with ~~Sections 404 and 502.13~~ Sections 404 and 502.13 Chapters 4 and 5 of the *International Mechanical Code*.

**Commenter's Reason:** Ventilation and exhaust are two separate and distinct terms. Ventilation is for recirculation to bring in fresh air into spaces intended to be occupied, whereas exhaust is to remove air to the outdoor atmosphere. Thus, ventilation systems are covered in Chapter 4, and exhaust systems are covered in Chapter 5. To address the concern of potential renumbering of the sections within these chapters, a general direction to these two chapters will assist in ensuring all mechanical requirements for parking garages are used.

---

**G102-15**

# G104-15

## 407.2.1

### **Proposed Change as Submitted**

**Proponent:** John Williams, CBO, Chair, representing Adhoc Health Care Committee (AHC@iccsafe.org)

## **2015 International Building Code**

### **Revise as follows:**

**407.2.1 Waiting and similar areas.** ~~Waiting areas and similar~~ public-use areas, or group meeting spaces constructed as required for *corridors* shall be permitted to be open to a *corridor*, only where all of the following criteria are met:

1. The spaces are not occupied as care recipient's sleeping rooms, treatment rooms, incidental uses in accordance with Section 509, or hazardous uses.
2. The open space is protected by an automatic fire detection system installed in accordance with Section 907.
3. The *corridors* onto which the spaces open, in the same *smoke compartment*, are protected by an automatic fire detection system installed in accordance with Section 907, or the *smoke compartment* in which the spaces are located is equipped throughout with quick-response sprinklers in accordance with Section 903.3.2.
4. The space is arranged so as not to obstruct access to the required *exits*.

**Reason:** The terminology "similar spaces" is vague and prone to interpretation. This change will allow for clarification of the original intent of the language. By amending this terminology to "public use areas" or "group meeting spaces" it will allow spaces such as family gathering areas, child play areas in children's wards, conservatories/game room/social interaction areas in long term recovery that are constructed as required for corridors and meet all of the established requirements to be permitted to be open to a corridor. Allowing these areas to be open to the corridor will provide better over sight and security of these areas thus allowing for quicker responses by staff to issues that develop in these areas. With the ban of smoking within hospitals there is not a risk of smoking within these areas and having these areas open to the corridor will allow staff to quickly sense and respond to any smoking that does occur. Being public spaces the need for privacy is not an issue. This change mirrors what is currently permitted in a nursing home environment and provide for a more open and inviting atmosphere.

The ICC Ad Hoc Committee on Healthcare (AHC) has just completed its 4th year. The AHC was established by the ICC Board to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. This is a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Information on the AHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the AHC effort can be downloaded from the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>.

**Cost Impact:** Will not increase the cost of construction  
This is a clarification; therefore, there is no change in cost.

G104-15 : 407.2.1-  
WILLIAMS4231

---

### **Public Hearing Results**

**Committee Action:** **Approved as Submitted**

**Committee Reason:** The change improves the intent of this provisions by giving specific examples of other spaces allowed to be open to the corridors. The existing text 'and similar' has led to a wide range of interpretations and mis-interpretations.

**Assembly Action :** **None**

---

### **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : William Hall, Portland Cement Association,  
representing Portland Cement Association (jhall@cement.org)  
requests Disapprove.**

**Commenter's Reason:** The term "group meetings" is the issue. Will conference rooms now be open to the corridors? This expanded list goes beyond the original intent.

G104-15

---

# G105-15

## 407.2.6

### Proposed Change as Submitted

**Proponent :** Edward Kulik, representing Building Code Action Committee (bcac@iccsafe.org)

## 2015 International Building Code

### Revise as follows:

**407.2.6 Nursing home cooking facilities.** In Group I-2, Condition 1, occupancies, rooms or spaces that contain a cooking facility with domestic cooking appliances shall be permitted to be open to the corridor where all of the following criteria are met:

1. The number of care recipients housed in the smoke compartment ~~is~~ shall not be greater than 30.
2. The number of care recipients served by the cooking facility ~~is~~ shall not be greater than 30.
3. Only one cooking facility area ~~is~~ shall be permitted in a smoke compartment.
4. The types of domestic cooking appliances permitted ~~are~~ shall be limited to ovens, cooktops, ranges, warmers and microwaves.
5. The corridor ~~is~~ shall be a clearly identified space delineated by construction or floor pattern, material or color.
6. The space containing the domestic cooking facility shall be arranged so as not to obstruct access to the required exit.
7. ~~A domestic~~ Domestic cooking ~~hood~~ hoods installed and constructed in accordance with Section 505 of the *International Mechanical Code* ~~is~~ shall be provided over ~~the cooktop or range cooktops and ranges.~~
8. ~~The domestic cooking hood provided over the cooktop or range~~ Cooktops and ranges shall be equipped with an automatic fire-extinguishing system of a type recognized for protection of domestic cooking equipment. ~~Preengineered automatic extinguishing systems shall be tested~~ protected in accordance with UL 300A and ~~listed and labeled for the intended application. The system shall be installed in accordance with this code, its listing and the manufacturer's instructions~~ Section 904.13.
9. ~~A manual actuation device for the hood suppression system shall be installed in accordance with Sections 904.12.1 and 904.12.2.~~
10. ~~An interlock device shall be provided such that upon activation of the hood suppression system, the power or fuel supply to the cooktop or range will be turned off.~~
10. A shut-off for the fuel and electrical power supply to the cooking equipment shall be provided in a location that is accessible only to staff.
11. A timer shall be provided that automatically deactivates the cooking appliances within a period of not more than 120 minutes.
12. A portable fire extinguisher shall be ~~installed~~ provided. Installation shall be in accordance with Section 906 ~~of and the~~ International Fire Code. extiguisher shall be located within a 30-foot (9144 mm)

distance of travel from each domestic cooking appliance.

**Reason:** This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

During the 2015 code cycle requirements were added to allow domestic cooking appliances to be installed in areas of Group I-2, Condition 1 occupancies that are open to the corridor when certain conditions were met. That included protecting cooktops and ranges with UL 300A compliant extinguishing systems in the hood. This proposal accomplishes the following:

1. Introduces mandatory language into Section 407.2.6
2. Allows an option for cooktops and ranges with listed ignition resistant burners to be provided in lieu of a UL 300A extinguishing system. These types of systems are investigated to verify that pans and cooking materials do not exceed 350 degrees C (662 degrees F). Recent work by the Fire Protection Research Foundation confirms that burners meeting these specifications are highly unlikely to ignite cooking materials. See: <http://www.nfpa.org/research/fire-protection-research-foundation/reports-and-proceedings/other-research-topics/analytical-modeling-of-pan-and-oil-heating-on-an-electric-coil-cooktop>

There will be a Group B corresponding code change proposal to IFC Section 904.13. The ICC Fire Code Action Committee (FCAC) supports this proposal and will be submitting the Group B proposal that follows:

**904.13 Domestic cooking systems in Group I-2 Condition 1.** In Group I-2 Condition 1, occupancies where cooking facilities are installed in accordance with Section 407.2.6 of this code, cooktops and ranges shall be protected in accordance with one of the following. ~~the domestic cooking hood provided over the cooktop or range shall be equipped with an automatic fire-extinguishing system of a type recognized for protection of domestic cooking equipment. Preengineered automatic extinguishing systems shall be tested in accordance with UL 300A and listed and labeled for the intended application. The system shall be installed in accordance with this code, its listing and the manufacturer's instructions.~~

1. Cooktops and ranges shall include heating elements or burners that have been tested and listed to not allow cooking pan temperatures to exceed 662 degrees F (350 degrees C), or

2 . The domestic cooking hood provided over the cooktop or range shall be equipped with an automatic fire-extinguishing system complying with both of the following:

a. The automatic fire-extinguishing system shall be of a type recognized for protection of domestic cooking equipment. Preengineered automatic extinguishing systems shall be tested in accordance with UL 300A and listed and labeled for the intended application. The system shall be installed in accordance with this code, its listing and the manufacturer's instructions, and

b. Manual actuation and system interconnection for the hood suppression system shall be installed in accordance with Sections 904.12.1 and 904.12.2, respectively.

~~904.13.1 Manual system operation and interconnection. Manual actuation and system interconnection for the hood suppression system shall be installed in accordance with Sections 904.12.1 and 904.12.2, respectively.~~

~~904.13.2 Portable fire extinguishers for domestic cooking equipment in Group I-2 Condition 1. A portable fire extinguisher complying with Section 906 shall be installed~~

~~within a 30-foot (9144 mm) distance of travel from domestic cooking appliances.~~

**Cost Impact:** Will not increase the cost of construction

This code change proposal will not increase the cost of construction. It includes editorial revisions and adds an option to the existing requirements to use ignition prevention cooktops.

G105-15 : 407.2.6-  
KULIK4658

---

## **Public Hearing Results**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This was a new provision for the 2015 code. With experience, improvements to the text to allow more consistent interpretation and compliance are needed.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : Wayne Morris, representing Association of Home Appliance Manufacturers requests Disapprove.**

**Commenter's Reason:** The Association of Home Appliance Manufacturers (AHAM) is opposed to the Code Proposal G 105-15 and the change suggested to Section 904.13 and we would like to present the following information. While we agree that additional protections for cooking in Nursing Home facilities is important, we disagree with several provisions in this proposal.

The proposal G 105-15 represents a significant change to the use of cooking appliances in Nursing Home Cooking Facilities. Currently the International Building Code requires that the cooking area over a standard cooktop or range should be provided with an automatic fire extinguishing system to prevent unattended cooking fires. We object to both the section of the Proposal 402.7.6 and to the new proposal on Section 904.13 as included in proposal G105-15. **This proposal would require not only the specific changes to an automatic shut-off of the range/cooktop but also that a cooktop or range not be allowed to have burners or elements that would exceed 662 deg F or 350 deg C.**

It is quite possible that at the time the proposal was first developed, the maker of the proposal was unaware of major changes taking place in the appliance safety standards. The appliance industry, in cooperation with other stakeholders, has already proposed and gained the acceptance of new cooking safety requirements in the applicable US voluntary safety standard. The cooking-related proposals included in the 2015 IBC proposal are unnecessary, duplicative, design restrictive, and ill-advised. They should be withdrawn.

AHAM is a strong supporter of the consensus standards process. We participate in over 50 safety standards for our industry. We help to develop standards committees, help to populate them, and help to support full participation by all stakeholders. In the case of safety of cooking appliances, the consensus process has considered and is still working on product safety standards.

The UL 858 standard for household ranges in the US recently released a new test requirement for coil cooktops to reduce the risk of fires from unattended cooking. The test involves running the burner in worst-case scenarios with cooking oil in a

pan, and the range must prevent the oil from igniting. This requirement will be in place on apply to all ranges and cooktops with coil heating elements within the next few years. A similar cooking safety test procedure is currently under review for inclusion in the Canadian Electric Range Standard, CSA 22.2 No. 61. Similar testing requirements are being developed for other cooking technologies, such as radiant and gas cooktops and ranges.

There are a number of reasons why this proposal would cause severe harm not only to the cooking appliance industry, but also to consumers through a very design-specific requirement.

1. The proposal in G105-15 for a timer to shut off power after 120 minutes is very design restrictive. It also has no details nor does it explain whether this is to be part of the range or part of the power/fuel system to the range. Such a requirement could be quite risky in a gas cooktop. To shut the fuel source off is one thing, but to then re-engage the fuel without proper controls could increase the risk. We ask that the Committee to remove this requirement #11, "A timer shall be provided that automatically deactivates the cooking appliances within a period of not more than 120 minutes."
2. This proposal for automatic shut-off does not have any details about testing, how the device is to be applied, if it is on the product, how the deactivation will be accomplished and more important how it will be re-activated. There are no requirements in the applicable US safety standards for such a provision. This leaves the accomplishment of this to anyone's guess. This proposal should be made to the UL 858 and ANSI Z21.1 safety standards.
3. This proposal for automatic shut-off, while possibly well-meaning does not allow consumers to perform many of the functions of a cooktop or oven. Many operations such as "canning" take longer than 120 minutes. Many oven operations, such as slow cooking meats take longer than 120 minutes. We understand that this is for a "nursing home" but there are many high-functioning adults in adult facilities and requiring such a restriction on the performance is not warranted.
4. This proposal in 904.13 is very design specific. The proposal seeks to restrict the temperature of the burner and not the pan or vessel that is used to cook. All research to date notes that the issue at question is the temperature in the pan/vessel in which food materials are placed. Thus, even though the issue is the temperature in the pan or vessel, this requirement would restrict the actual burner. There are no test methods, descriptions of how the test would be conducted and no understanding of how a product would be evaluated.
5. We believe this proposal in 904.13 is built around the promotion of one particular solution on the market. That solution has a number of specific issues:
  1. The solution is not safety certified for use in kitchen ranges in the United States or Canada. No safety certification agency has given the approval for this product to be used on or in ranges or cooktops.
  2. The solution is only available for coil-element ranges as a replacement device. It will not allow nor are there any solutions currently available in concept or on the market that would restrict the temperature of the burner on coil-element, radiant, glass ceramic, induction, or gas ranges/cooktops to less than 662 deg F or 350 deg C.
  3. The solution has been reported to have a number of concerns about its efficacy and usefulness to consumers. In some cases, this has prompted behavior with this device that have raised questions about whether it would be in the best interest of safety.
6. It is inappropriate for a consensus standards development committee to develop standards proposals that have only one technical solution and is written to promote one particular product on the market. We doubt the Committee fully understood this at the time. While this may seem to be a simple design requirement, the change proposed to 904.13 is a thinly veiled attempt to promote one product and to require it in the Code.
7. This proposal in 904.13 seems to be written without fully understanding the information on or the technologies in development to prevent unattended cooking

fires.

8. AHAM and its members are very aware of the tragic situations with unattended cooking fires. For many years, AHAM, standards developers, staff at the U.S. Consumer Product Safety Commission (CPSC), NFPA, and other stakeholders have been meeting to develop effective solutions to the issue of unattended cooking fires. Considerable research has been done, much of which has noted the importance of providing a solution that would reduce cooking fires but allow a full range of cooking to the consumer.

9. In October 2014, AHAM made a proposal to UL Standard 858 that would, for the first, time create a test in the standard for coil-element cooktops to simulate an unattended cooking situation and require that cooking oil not ignite. This will eventually be extended to glass-ceramic and eventually gas cooktops. However, even the concept feasibility of such a pan temperature control mechanism has only been demonstrated at this time for coil-element ranges. Proposal G 105-15 and the accompanying 904.13 would only allow purchasing people to choose to install coil-element ranges.

10. Nothing in this proposal G105-15 mentions the need for such a solution or device to be safety certified. We think this is a gross error in the standard and which could leave consumers, nursing home administrators, and housing authorities at great risk.

11. This proposal in 904.13 will result in a considerable reduction in the cooking temperature in the pan or vessel on the cooktop. By restricting the temperature to 350°C on the burner, the temperature in the pan (depending on pan materials) will be considerably less and will definitely affect the ability to properly cook food to a safe temperature. The proposed addition to the IBC of limiting pan temperature to 350°C is inadequate by itself, as the test and measurement procedures are a crucial part of the requirement. If consumers are faced with a significant reduction in cooking temperatures, they could be prompted to take steps which would increase risk.

12. The proposal in 904.13, as it stands, speaks only to the maximum temperature, but equally important is the rate of rise of the temperature. Heating elements on cooktops may be constructed of considerable mass, which will allow average temperatures to be maintained but with "overshoot" temperatures during initial heat-up to be considerably higher.

13. This proposal in G105-15 is very design restrictive for the International Building Code. We believe such a requirement should be in the product safety standard. It is one thing to require the accompaniment of an over-the-range fire protection or fire extinguishing system. This is certainly within the scope of the requirements of the ICC or IBC. However, dictating specific design or performance parameters for a piece of individual equipment without knowing all the other requirements is inappropriate for the ICC or IBC.

14. Repeated references to 'domestic' appliances appears as though it would encompass household appliances. While compliance with any of these new requirements would only be required of those wishing to sell into the Nursing Home market, we see a substantial concern that additional sources of regulation could be broadened to many other product market categories. To the extent that these proposed additions to the IBC, IMC and IFC could potentially encroach on regulations on household appliances, however, AHAM should stand strongly against and oppose such encroachment.

It is difficult for AHAM to give advice to the General Building Code Committee on fire prevention. However, it would seem that without the proposed changes the International Building Code contains adequate coverage for Nursing Home facilities with the requirement of fire suppression systems.

While AHAM generally does not discuss the issue of cost of proposals, this proposal makes the statement that there will be no cost impact. As there are no products currently on the market that meet this requirement and are safety certified, we

question how the maker of the proposal arrived at that conclusion.

Thank you.

**Bibliography:** The Association of Home Appliance Manufacturers (AHAM) represents manufacturers of major, portable and floor care home appliances, and suppliers to the industry. AHAM's membership includes over 150 companies throughout the world. In the U.S., AHAM members employ tens of thousands of people and produce more than 95% of the household appliances shipped for sale. The factory shipment value of these products is more than \$30 billion annually. The home appliance industry, through its products and innovation, is essential to U.S. consumer lifestyle, health, safety and convenience. Through its technology, employees and productivity, the industry contributes significantly to U.S. jobs and economic security. Home appliances also are a success story in terms of energy efficiency, safety, and environmental protection. New appliances often represent the most effective choice a consumer can make to reduce home energy use and costs.

AHAM is also a standards development organization and has authored numerous appliance performance testing standards used by manufacturers, consumer organizations and governmental bodies to rate and compare appliances. In partnership with the CSA Group, and UL Environment, AHAM developed the first sustainability standards for home appliances. AHAM's consumer safety education program has educated millions of consumers on ways to properly and safely use appliances such as portable heaters, clothes dryers, and cooking products. AHAM participates in the development of over 60 product safety standards and has authored numerous improvements to these standards.

Wayne Morris is the Vice President, Technical Operations and Standards and leads the standards development activities for the association.

---

**G105-15**

# G109-15

407.5

## Proposed Change as Submitted

**Proponent :** Vickie Lovell, InterCode Incorporated, representing Fire Safe North America (vickie@intercodeinc.com)

### 2015 International Building Code

**Revise as follows:**

**407.5 Smoke barriers.** *Smoke barriers* shall be provided to subdivide every *story* used by persons receiving care, treatment or sleeping and to divide other *stories* with an *occupant load* of 50 or more persons, into no fewer than two *smoke compartments*. Such stories shall be divided into *smoke compartments* with an area of not more than 22,500 square feet (2092 m<sup>2</sup>) in Group I-2, ~~Condition 1, and not more than 40,000 square feet (3716 m<sup>2</sup>) in Group I-2, Condition 2, and the~~ . The distance of travel from any point in a *smoke compartment* to a *smoke barrier* door shall be not greater than 200 feet (60 960 mm). The *smoke barrier* shall be in accordance with Section 709.

#### Exceptions

1. A smoke compartment in Group I-2, Condition 2, is permitted to have an area of not more than 35,000 square feet (3252 m<sup>2</sup>) provided all patient rooms within that smoke compartment are configured for one single bed per room.
2. A smoke compartment in Group I-2, Condition 2, is permitted to have an area of not more than 40,000 square feet (3716 m<sup>2</sup>) used primarily as a radiology suite. For the purposes of this exception, a radiology suite is a dedicated space that includes the area for MRI, general radiology, PET, CT, flouroscopy, interventional radiology or gamma camera procedures and their needed support and staff areas, without any patient sleeping rooms.

**Reason:** The discussions of the Ad Hoc Healthcare group in the 2015 development cycle indicated that the larger smoke compartments were needed due to healthcare construction and design moving exclusively to one patient per room. In support of that, they had their spreadsheets that detailed exactly how many square feet every different room within a smoke compartment required to create a properly functioning unit, and then added up all of those square feet. Except for a radiology suite, which their spreadsheet indicated would now require the increase to 40,000 sq. ft., 35,000 sq. ft. would be sufficient for the other documented unit types (inpatient beds, emergency department with pediatrics, intensive care unit) as is recommended in this proposal.

In addition, knowing that the IBC is used in other countries as a model code, and in other countries the norm may be 2 patients (or more) per room, this would clearly indicate that the new, larger smoke compartments are only to be considered if and when a hospital goes to the 1 patient-per-room layout.

**International Code Council  
Ad-Hoc Committee for Healthcare  
Inpatient Bed Unit - Generic Program**

Item	Space Name	2010 Guideline Planning			1996-97 Guideline Planning			Actual Occupants	Comments
		Module (SF)	Qty.	Total SF	Module (SF)	Qty.	Total SF		
1	<b>Patient Area</b>								
2	Patient Room	300	29	8,700	200	15	3000	29	2010: 1 Bed per room. 1996-97: 2 Bed per room
3	Patient Seclusion Room	not applicable			200	1	200		
4	Isolation Patient Room	350	4	1,400	120	4	480	4	
5	Specialty Treatment Room	350	1	350	120	1	120	1	
6	Work Alcove	68	2	136	68	2	136		
7									
8	<b>Staff Areas</b>								
9	Nurses Station 1	276	1	276	276	1	276		
10	Nurses Station 2	297	1	297	not required on smaller floor			10	Staff Nurses Actual (max)
11	Nurses Station 3	237	2	474	237	2	474	1	Staff Nurse Manager
12	Nurses Station 4	350	1	350	not required on smaller floor			1	Staff Unit Secretary
13	Nurse Supervisor / Phys Charting	475	1	475	475	1	475	4	Staff Physicians/Fellows/Residents (Transient)
14	Staff Storage / Locker Room	229	1	229	229	1	229	4	Staff EVS/Physical Plant/Kitchen/Materials Management (Transient)
15	Documentation Area	93	5	465	93	5	465	3	Staff Nurse Aids
16	Multipurpose Room	386	1	386	386	1	386		
17	Staff Lounge / Toilet	326	1	326	264	1	264		
18	Interdisciplinary Room	374	1	374	not required				
19	Unit Support	465	1	465	465	1	465		
20									
21	<b>Support Spaces</b>								
22	Environmental Services	78	2	156	78	1	78		
23	Soiled Holding / Workroom	355	1	355	355	1	355		
24	Clean Supply	202	2	404	202	2	404		
25	Medication Dispensing	259	2	518	259	2	518		
26	Equipment & Supply Storage	666	1	666	420	120	666	360	Includes storage for linen, emergency equipment, stretchers and wheelchairs
27	Nourishment Station	205	1	205	205	1	205		
28	Equipment Alcoves	404	1	404	300	1	300		Throughout, for equipment staging off corridor
29	Visitor Lounge / Resource Center	416	1	416	not required			18	Represents family members on unit at any given time
30	Electrical	321	1	321	80	2	160		
31	Telecomm	319	2	638	not required				
32	Stair	184	3	552	184	3	552		
33	Utility Shafts	200	4	800	200	4	800		
34	Patient Toilet Rooms	not req'd at angle patient room			64	3	192		
35									
36									
37	Subtotal: Net Square Feet			20,138			11,200		
38									
39	Circulation Factor ( 1.70 )			14,030			7,803		Actual
40									
41	Total Design Gross Square Feet			34,168			19,003		
42									
43	Building Gross Factor 1.25 (N/A)			0			0		
44									
45	Total Building Gross Area			34,168			19,003		
46									
47				2010 Calculated Occupant Load (250 sq/occupant)			137		University of PA Health System
48				1996-97 Calculated Occupant Load (250 sq/occupant)			76		Substantiation for larger square footage in smoke compartments
49				Actual Occupant Load (From Above)			75		InpatientBedUnit

**International Code Council  
Ad-Hoc Committee for Healthcare**

planning.doh.com  
Francis Cauffman

**Emergency Department with Pediatrics - Generic Program**

Item	Space Name	2010 Guideline Planning			1996-97 Guideline Planning			Actual Occupants	Comments
		Module (SF)	Qty.	Total SF	Module (SF)	Qty.	Total SF		
1	<b>Reception/Waiting</b>								
2	Walk-in Vestibule	120	1	120	120	1	120		
3	Ambulance Vestibule	140	1	140	140	1	140		
4	Reception/Greeter	120	1	120	not required			1	Greeter
5	Security Office	120	1	120	not required			1	Security Officer
6	Triage	20	12	240	20	12	240	6	Patients
7	Triage Sub-Waiting	60	2	120	60	2	120	2	Staff
8	Registration Stations	120	1	120	120	1	120	2	Chkrs
9	Registration Clerical Work Area	20	30	600	20	30	600	15	Waiting Occupants
10	Adult Waiting	20	15	300	20	15	300	8	Waiting Occupants
11	Pediatric Waiting	120	1	120	120	1	120	0	Service area to above
12	Pediatric Play	50	2	100	50	2	100		
13	Toilets - Public	60	1	60	60	1	60		
14	Vending	110	1	110	not required			1	Financial Advisor
15	Co-Pay and Fiscal Advisor	110	1	110	110	1	110		
16	Counsel/Recreation Room	5	4	20	5	4	20		
17	Wheelchair Storage								
18	Subtotal			2,800			2,410		
19									
20	<b>Adult Clinical Care</b>								
21	<b>Treatment Space</b>								
22	Standard Exam/Treatment	155	19	2,945	60	19	1,820	19	Patients
23	Exam/Treat - Isolation	155	2	310	120	2	240	0	Accounted for in Bays
24	Bariatric Exam	220	2	440	not required			0	Accounted for in Bays
25	ENT	155	1	155	120	1	120	0	Accounted for in Bays
26	OE/Oyn Exam	50	1	50	50	1	50	0	Accounted for in Bays
27	OE/Oyn TLT	180	2	360	120	2	240	0	Accounted for in Bays
28	Spring Psych	275	3	825	250	3	750	1	Patient. Staff accounted elsewhere
29	Major Trauma/Resusc	50	4	200	50	4	200		
30	Patient Toilet								
31	<b>Direct Clinical Support</b>								
32	Clinical Workstation	400	1	400	400	1	400	6	Nurse Staff
33	Clinical Touchdown	60	4	240	60	4	240	2	Attending, Fellow
34	MD Charting	50	6	300	50	6	300	2	Visiting Physician
35	Male	100	2	200	100	2	200		

36	Nourishment	80	2	160	80	2	160	
37	Clinical Support	160	1	160	160	1	160	
38	Clean Supply	180	1	180	180	1	180	
39	Solid Utility	120	1	120	120	1	120	
40	Equipment Storage	160	1	160	160	1	160	
41	Clean Linen storage	20	4	80	20	4	80	
42	Crash Cart Alcoves	10	2	20	10	2	20	
43	Stat Lab	80	1	80	notrequired			
44	Staff Toilets on Floor	50	2	100	50	2	100	
45	HAC	50	1	50	50	1	50	
46		Subtotal		10,750			7,950	
47	<b>Dedicated Pediatric Hybrid</b>							
48	Family Waiting	20	6	120	20	6	120	6 Waiting Occupants
49	Family Support Lounge	150	1	150	150	1	150	
50	<b>Inpatient Smart Stop</b>							
51	Patient Room	220	6	1,320	120	6	720	12 Patient and Parent
52	Patient Room/Semiprivate	240	2	480	160	2	320	5 Patient and Parent
53	Patient Toilet Room	55	8	440	55	8	440	
54	Play and Activities	120	1	120	120	1	120	0 Accounted for in Patient Space
55	<b>ED Exam/Peacemng</b>							
56	Exam/Treatment Rooms	160	3	480	120	3	360	6 Patient and Parent
57	Bariatric Pediatric	220	1	220	notrequired			2 Patient and Parent
58	Exam/IE	160	1	160	160	1	160	
59	Patient Toilet	50	3	150	50	3	150	
60	Major Trauma/Resusc	275	1	275	250	1	250	1 Patient. Staff accounted elsewhere
61	<b>Clinical Support</b>							
62	Clinical workstation	240	1	240	240	1	240	2 Nurses
63	Clinical Touchdown	60	2	120	60	2	120	1 Pediatrician
64	MD Charting	50	2	100	50	2	100	2 Visiting Physician
65	Family Consult	110	1	110	110	1	110	
66	Meds	80	1	80	80	1	80	
67	Nourishment	80	1	80	80	1	80	
68	Clean Utility	160	1	160	160	1	160	
69	Solid Utility	120	1	120	120	1	120	
70	Equipment Storage	80	2	160	80	2	160	
71	Peds Crash Cart	20	1	20	20	1	20	
72	<b>Administrative Support</b>							
73	MD office	120	1	120	120	1	120	1 Physician
74	Nurse Manager	120	1	120	120	1	120	1 Nurse Manager
75	Staff Lounge	140	1	140	140	1	140	
76	Conference	160	1	160	160	1	160	
77	Staff Toilets	50	2	100	50	2	100	
78	Decon Shower	100	1	100	100	1	100	
79	Housekeeping	50	1	50	50	1	50	
80		Subtotal		5,895			4,730	
81								
82	<b>Offices/Administrative Support</b>							
83	Nursing Offices	100	4	400	100	4	400	0 Nurses (included above)
84	MD Touchdown Office	180	1	180	180	1	180	1 Physician
85	Director's Office	120	1	120	120	1	120	1 Director
86	Squad Room	80	1	80	80	1	80	2 EMT
87	Backboard Shower	10	1	10	notrequired			
88	Decontam. Storage	60	1	60	notrequired			
89	Lounge Area - Staff	140	1	140	140	1	140	0 Accounted Above
90	Shared Staff Locker Room	8	40	320	8	40	320	0 Accounted Above
91	Conference/Continuing Education	200	1	200	200	1	200	
92	Toilet / Shower - Staff	65	1	65	65	1	65	
93	Toilet - Staff	50	3	150	50	3	150	
94	Housekeeping Closet	50	1	50	50	1	50	
95		Subtotal		1,775			1,705	
96								
97								
98	Subtotal Net Square Feet			21,240			16,795	
99								
100	Circulation Factor	( 1.55 )		11,682			9,237	Actual
101								
102	Total Design Gross Square Feet			32,922			26,032	
103								
104								
105	Total Building Gross Area			32,922			26,032	

2010 Calculated Occupant Load (250 sf/occupant)	132
1996-97 Calculated Occupant Load (250 sf/occupant)	104
Actual Occupant Load (From Above)	112

University of PA Health System  
Substantiation for larger square  
footage in smoke compartments  
ED with Peds Hybrid

International Code Council  
 Ad-Hoc Committee for Healthcare  
 Radiology Suite - Generic Program

Item	Space Name	2010 Guideline Planning			1996-97 Guideline Planning			Actual Occupants	Comments
		Module (SF)	Qty.	Total SF	Module (SF)	Qty.	Total SF		
1	<b>Patient Area</b>								
2	Waiting	20	36	720	20	36	720	18 waiting	
3	Registration	64	8	512	64	8	512	2 staff	
4	Consult	110	3	330	110	3	330	0 included below	
5	Public Toilets	62	3	186	62	3	186		
6	Patient Education	1	56	56	not required				
7									
8	<b>MRI Suite</b>								
9	MRI Scan Rooms (1.5T, 3T)	430	6	2,580	325	6	1,950	6 Patients	
10	MRI Control	882	1	882	100	6	600	6 Staff	
11	MRI Warm Zone Vestibule	280	3	840	280	3	840		
12	MRI Equipment	280	4	1,120	150	4	600		
13	MRI Prep	275	1	275	275	1	275		
14	Patient Toilets	62	2	124	50	2	100		
15	Mens Gowned Waiting / Changing	240	1	240	240	1	240	6 patients changing	
16	Womens Gowned Waiting / Changing	285	1	285	285	1	285	6 patients changing	
17	<b>General Radiology Suite</b>								
18	General Rad Room	260	5	1,300	180	5	900	5 patients	
19	Bone Densitometry	140	3	420	140	3	420	3 patients	
20	Control	475	1	475	475	1	475	3 staff	
21	Mens Gowned Waiting / Changing	240	2	480	240	2	480	5 patients changing	
22	Womens Gowned Waiting / Changing	240	2	480	240	2	480	5 patients changing	
23	Patient Toilets	62	1	62	62	1	62		
24	<b>PET/CT Suite</b>								
25	PET/CT Scan Room	420	2	840	350	2	700	0 included in prep/injection areas	
26	PET/CT Control	120	2	240	120	2	240	2 staff	
27	PET/CT Equipment	48	2	96	48	2	96		
28	Hot Lab	255	1	255	255	1	255		
29	Hot Toilet	62	1	62	62	1	62		
30	Hot Injection	130	1	130	130	1	130	2	
31	Prep Room	313	1	313	313	1	313	2 prep bays	
32	<b>CT Suite</b>								
33	CT Scan Room	420	3	1,260	250	3	750	3 patients	
34	CT Control Room	520	1	520	360	1	360	3 staff	
35	CT Prep	550	1	550	300	1	300	0 included above	
36	Mens Gowned Waiting / Changing	215	1	215	215	1	215	3 patients changing	
37	Womens Gowned Waiting / Changing	215	1	215	215	1	215	3 patients changing	
38	Patient Toilets	62	2	124	62	2	124		
39	<b>Fluoroscopy Suite</b>								
40	Fluoroscopy Room	405	2	810	320	2	640	2 patients	
41	Patient Toilets	62	2	124	62	2	124		
42	Fluoroscopy Control	325	1	325	180	1	180	2 staff	
43	<b>Interventional Radiology Suite</b>								
44	IR Lab	368	2	736	350	2	700	2 patients	
45	Scrub	110	1	110	110	1	110		
46	IR Prep / Recovery	950	1	950	750	1	750	5 patients	
47	IR Exam	220	1	220	120	1	120		
48	Patient Toilet	62	1	62	50	1	50		
49	IR Workroom	230	1	230	180	1	180	4 nurses / physician / staff working in spaces above	
50	<b>Gamma Camera Suite</b>								
51	Gamma Camera Scan Room	315	2	630	300	2	600		
52	Control Room	230	1	230	180	1	180		
53									
54	<b>Staff Areas</b>								
55	Reading Room	1,950	1	1,950	800	1	800	8 workstations	
56	Conference Room	675	1	675	400	1	400	0 for staff accounted in department	
57	Staff Lounge	625	1	625	375	1	375	0 for staff accounted in department	
58	Staff Locker	470	1	470	470	1	470	0 for staff accounted in department	
59	Staff Toilet	62	1	62	62	1	62		
60	Manager Office	110	1	110	110	1	110	1 manager	
61	Radiology IT Office	80	3	240	80	3	240	3 Staff	
62	MD Touchdown	200	2	400	200	2	400	4 Physicians	
63									
64	<b>Support Spaces</b>								
65	Clean Supply	642	1	642	400	1	400		
66	Soiled Utility	273	1	273	200	1	200		
67	Moveable Equipment Storage	500	1	500	300	1	300		
68	Linen Storage	400	1	400	200	1	200		
69	Film / Scanning Room	170	1	170	350	1	350	Active films only. Inactive stored off-site. 2010: digital storage only. no films stored on site	
70									
71									
72	Subtotal: Net Square Feet			27,131			21,156		
73									
74	Circulation Factor	(	1.49	)			10.366		
75									
76	Total Design Gross Square Feet			40,400			31,522		
77									
78	Building Gross Factor 1.25 (N/A)			0			0		
79									
80	Total Building Gross Area			40,400			31,522		

University of PA Health System  
 Substantiation for larger square  
 footage in smoke compartments  
 Radiology

2010 Calculated Occupant Load (250 sf/occupant) 162  
 1996-97 Calculated Occupant Load (250 sf/occupant) 126  
 Actual Occupant Load (From Above) 120



**Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : Vickie Lovell, InterCode Incorporated, representing Fire Safe North America (vickie@intercodeinc.com); John Williams, CBO, representing Adhoc Healthcare Committee (AHC@iccsafe.org) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

**2015 International Building Code**

**407.5 Smoke barriers.** *Smoke barriers* shall be provided to subdivide every *story* used by persons receiving care, treatment or sleeping and to divide other *stories* with an *occupant load* of 50 or more persons, into no fewer than two *smoke compartments*. Such stories shall be divided into *smoke compartments* with an area of not more than 22,500 square feet (2092 m<sup>2</sup>) in Group I-2. The distance of travel from any point in a *smoke compartment* to a *smoke barrier* door shall be not greater than 200 feet (60 960 mm). The *smoke barrier* shall be in accordance with Section 709.

**Exceptions**

1. A smoke compartment in Group I-2, Condition 2, is permitted to have an area of not more than ~~35,000~~ 40,000 square feet (~~3252~~ 3716 m<sup>2</sup>) provided all patient sleeping rooms within that smoke compartment are configured for ~~one single bed per room~~ patient occupancy and any suite within the smoke compartment complies with Section 407.4.4.
2. A smoke compartment in Group I-2, Condition 2, without patient sleeping rooms is permitted to have an area of not more than 40,000 square feet (3716 m<sup>2</sup>) ~~used primarily as a radiology suite. For the purposes of this exception, a radiology suite is a dedicated space that includes the area for MRI, general radiology, PET, CT, flourescopy, interventional radiology or gamma camera procedures and their needed support and staff areas, without any patient sleeping rooms.~~ \_

**Commenter's Reason: Lovell:** For several years there has been discussion over the appropriate size of a health care occupancy smoke compartment. The major contributors to this debate committed to discussing the issue further in hopes of uncovering better data and reaching common ground. A separate egress study was procured, unfortunately the study was limited and the results were inconclusive. However, the proponents of this change were able to reach an agreement that we believe resolves the major concerns of most of the parties involved:

1. Limit the increase of smoke compartment size to hospitals only, which is what the current language states.
2. Only allow the increase to 40,000 ft<sup>2</sup> to smoke compartments that have single occupancy sleeping rooms -or- smoke compartments without patient sleeping rooms.

3. Allow the use of suites (which might contain multiple sleeping rooms) in all smoke compartments. However, limit those smoke compartments that contained multiple patient sleeping rooms (whether they be inside of a suite or outside of a suite) to 22,500 ft<sup>2</sup>. Sleeping suites with single occupancy sleeping rooms would be permitted to be in a 40,000 sf smoke compartment.
4. Clarify that arrangements for single vs. multiple-occupancy rooms is intended to be by design, rather than an administrative decision. Thus, we have used the term "configured for single patient occupancy".

We are hopeful that the Committee will look favorably at this change, as we believe it represents the consensus of many of the interested parties.

**Williams:** For several years there has been discussion over the appropriate size of a healthcare occupancy smoke compartment. The major contributors to this debate committed to discussing the issue further in hopes of uncovering better data and reaching common ground. A separate egress study was procured, unfortunately the study was limited and the results were inconclusive. However, the proponents of this change were able to reach an agreement that we believe resolves the major concerns of most of the parties involved:

1. Limit the increase of smoke compartment size to hospitals only, which is what the current language states.
2. Only allow the increase to 40,000 ft<sup>2</sup> to smoke compartments that has single occupancy sleeping rooms -or- smoke compartment without patient sleeping rooms.
3. Allow the use of suites (which might contain multiple sleeping rooms) in all smoke compartments. However, limit those smoke compartments that contained multiple patient sleeping rooms (whether they be inside of a suite or outside of a suite ) to 22,500 ft<sup>2</sup>. Sleeping suites with on single occupancy sleeping rooms would be permitted to be in a 40,000 sf smoke compartment.
4. Clarify that arrangements for single- vs. multiple-occupancy rooms is intended to be by design, rather than administrative decision. Thus we have used the term "configured for single patient occupancy".

The ICC Ad Hoc Committee on Healthcare (AHC) has just completed its 4th year. The AHC was established by the ICC Board to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. This is a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Information on the AHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the AHC effort can be downloaded from the AHC website at: [Adhoc Healthcare](#).

---

**G109-15**

# G110-15

407.5

## Proposed Change as Submitted

**Proponent :** Amanda Hickman, InterCode Incorporated, representing Fire Safe North America (amanda@intercodeinc.com)

### 2015 International Building Code

**Revise as follows:**

**407.5 Smoke barriers.** *Smoke barriers* shall be provided to subdivide every *story* used by persons receiving care, treatment or sleeping and to divide other *stories* with an *occupant load* of 50 or more persons, into no fewer than two *smoke compartments*. Such stories shall be divided into *smoke compartments* with an area of not more than 22,500 square feet (2092 m<sup>2</sup>) in Group I-2, ~~Condition 1, and not more than 40,000 square feet (3716 m<sup>2</sup>) in Group I-2, Condition 2, and the~~ . The distance of travel from any point in a *smoke compartment* to a *smoke barrier* door shall be not greater than 200 feet (60 960 mm). The *smoke barrier* shall be in accordance with Section 709.

**Reason:** In the event of a fire, hospitals have a population with special concerns and vulnerabilities. To maintain an effective fire and smoke management system in health care environments, multiple compartments subdivided with smoke barrier walls must be incorporated and maintained in the life safety design for hospitals. A full evacuation is often neither practical nor in the best interest of hospital patients. Therefore, the International Building Code (IBC) and NFPA 101 Life Safety Code both require that the safety of patients in hospitals be provided through the use of a defend-in-place strategy using multiple fire safety features, including construction, compartmentation, fire detection and suppression, and a well-trained staff to assist in emergency relocation/evacuation of patients.

Smoke barriers are used to separate smoke compartments. Walls and floors designed and constructed as smoke barriers separate adjacent smoke compartments in a building. Smoke barriers are required to be constructed with a minimal fire resistance rating of 1 hour. This will ensure that they are not quickly breached in the event of a fire, especially if sprinkler operation is delayed, shielded, or prevented altogether, such as due to a water supply impairment. As the name implies, smoke barriers are also intended to restrict the movement of smoke. Ensuring the ability of smoke barriers to survive exposure to a fire and to restrict smoke movement in a fire incident is critical to the defend-in-place concept used in health care. A key part of this strategy is to use smoke compartments formed by smoke barriers to create temporary, safe areas for patients. The International Building Code requires that areas used for patients must be divided into a minimum of two smoke compartments. Patients in smoke compartments not directly involved in a fire are protected at least temporarily, and can be moved horizontally on gurneys if necessary across smoke barriers into an adjacent smoke compartment. This will buy valuable time, depending on the circumstances, to avoid the need for total evacuation.

Code changes in the 2015 Edition of the International Building Code resulted in the approval of two new code changes that changed smoke compartments in hospitals. Smoke compartments in I-2 occupancies are now less protected.

- Section 717.5.5 (new exception #2 in the 2015 IBC) permits smoke barriers in smoke compartments to eliminate smoke dampers in smoke barriers in sprinklered I-2 buildings, if the HVAC system is fully ducted; and
- Section 407.5 (2015 IBC) permits the area of smoke compartments in I-2,

condition 2, to be nearly doubled in size, expanded in area from 22,500 sq. ft. to 40,000 sq. ft.

The Section 407.5 change represents two major changes to current requirements without substantial justification and without consideration of implementation of both changes to the protection of smoke compartments. Fire Safe North America (FSNA) was strongly opposed to both of the changes in the protection of smoke compartments and testified in opposition. (The Air Movement and Control Association Intl (AMCA) has submitted a code change this cycle that further clarifies when a smoke damper can be eliminated from the duct system.)

Regarding the increased size of the smoke compartment, there was no correlation to the measurement of travel distances in a 40,000 sq. ft. compartment size. While travel distances are measured along a path of travel, the compartment sizes are measured in straight line distances. This major adjustment in smoke compartment size would potentially expose a greater number of patients to a fire incident, and establish the need for staff to relocate this higher number of patients to an adjacent area of safety, imposing an unacceptable level of safety for those patients. Current text has no limitations on the number of patients or the number of associated staff who may be located in any one smoke compartment. The change was based on the assumption that the size of functional patient areas has increased with no corresponding increase in patient population, but the code does not require such a limitation.

The proposal that significantly increased the allowable area of a smoke compartment in hospitals from 22,500 sq. ft. to 40,000 sq. ft. did not adequately address numerous issues in their substantiation, and was not resolved satisfactorily. The following contains excerpts from testimony from those who were opposed to these changes, including the National Association of State Fire Marshals, Fire Safe North America, International Association of Fire Fighters, the International Firestop Council, the Air Movement and Control Association International, and others:

1. The substantiation provided for increasing smoke compartment size in hospitals from 22,500 sq. ft. to 40,000 sq. ft. was only based on a study showing that the size of functional patient areas is increasing in most hospitals (for example, to private patient rooms from semiprivate rooms) from the "Facilities Management Guidelines", and not on any technical substantiation addressing specific concerns of patient safety.
2. The new code section does not address the concerns related to increasing the travel time for egressing patients out of one smoke compartment into another one, and the fire and smoke safety impact on those patients and staff.
3. The new code section has no limitations on the maximum number of patients that may be located in any one 40,000 sq. ft. smoke compartment. Without limitations on patient or occupancy limits, a larger smoke compartment size than what was previously permitted, could expose a higher number of patients, visitors, and hospital staff to a fire incident.
4. The new code section could be interpreted to allow existing hospitals to increase smoke compartment sizes in order to reduce maintenance costs by decommissioning some of their smoke barriers without actually reducing the number of patients within their smoke compartments.

An important point of interest is that an identical proposal to increase the size of a smoke compartment to 40,000 sq. ft. was proposed to the 2015 Life Safety Code, published and distributed worldwide by the National Fire Protection Association. Although approved narrowly by the Technical Committee, it was disapproved by the NFPA membership during the NFPA Association Members Meeting in Las Vegas in June, 2014. As a result, the change to 40,000 sq. ft. that is in the 2015 IBC and is not the 2015 Life Safety Code. There remains a conflict between the two regulatory documents, which causes problems for hospitals that need to comply with CMS regulations, as they require conformance with NFPA 101, including the 22,500 sq. ft. limitation on smoke compartment size.

This proposal seeks to restore the size of the smoke compartments in hospitals to 22,500 sq. ft. which will make the Life Safety Code and the IBC consistent with one

another.

**Cost Impact:** Will increase the cost of construction

This code change will increase the cost of construction as compared to the 2015 IBC, due to cost of constructing additional smoke barrier walls to make smoke compartments smaller than the currently required 40,000 sq. ft. smoke compartments.

G110-15 : 407.5-  
HICKMAN4344

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** Based on the number of proposals submitted on this topic, there is a clear need for a comprehensive solution to the issue. Returning to the previous area limits are not justifiable.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : Glenn Dean, Virginia State Fire Marshal's Office, representing Virginia State Fire Marshal's Office requests Approve as Submitted.**

**Commenter's Reason:** The committee statement for disapproval said in part, "returning to the previous area limits are not justifiable" when in actuality the increase to 40,000 sq ft was in itself insufficiently justified. There's also an inference or falsehood that retaining the maximum travel distance of 200 feet would somehow offset the increase to 40,000 sq ft. The furtherance of the falsehood will be found in a future desire, or need, to cram more patients into the increased space and there's no reason to think that it won't happen. This will thereby place a greater burden on staff to evacuate patients. The proponents say there is a need to allow for more equipment per patient, which may be true, but with increased patient counts it begets increased equipment needs which will beget the need for more space and that will be at the future expense of increased travel distances around and through all this equipment.

In summary:

- The proponents did not sufficiently or adequately address fire service concerns about safe patient egress from these larger (doubled) compartment sizes.
- Increasing smoke compartment sizes in hospitals to 40,000 sq. ft. was based on a study showing that the size of functional patient areas is increasing in most hospitals from the "Facilities Management Guidelines" and not on any specific technical justification that included specific assurances for patient safety.
- Safety concerns related to increasing the travel time for patient evacuation from one smoke compartment to another one was not adequately addressed. To the contrary, while not conclusive there have been two recent studies conducted that explore the egress

times from the different size compartments and both studies strongly indicate that it may take longer to egress patients from a larger compartment than a smaller one. (See Fire Protection Research Foundation report: "Egress Modelling in Health Care Occupancies" Author: Virginia Alonso, GIDAI Group, University of Cantabria, July 2014. See also "Impact of Smoke Compartment Size on Horizontal Evacuation Time in Health Care Facilities" Worcester Polytechnic Institute graduate students, Mary Long and Drew Martin completed July 2015.)

- As alluded to above, it can argued that bigger compartments will inevitably lead to more patient rooms, and thereby more patients. The two recent studies indicated that staff-to-patient ratio, which can vary greatly from one hospital to another, was a major factor in the speed of patient evacuation times. Current code has no limitations on the maximum number of patients that may be located in any one 40,000 sq ft. smoke compartment. Without mandatory staff-to-patient ratios and no enforceable limitations on patient occupancy, a larger smoke compartment size could expose a higher number of patients, visitors, and hospital staff to a fire incident than previously permitted.

---

**G110-15**

# G111-15

## 407.5.2

### **Proposed Change as Submitted**

**Proponent:** John Williams, CBO, Chair, representing Adhoc Health Care Committee (AHC@iccsafe.org)

## **2015 International Building Code**

### **Revise as follows:**

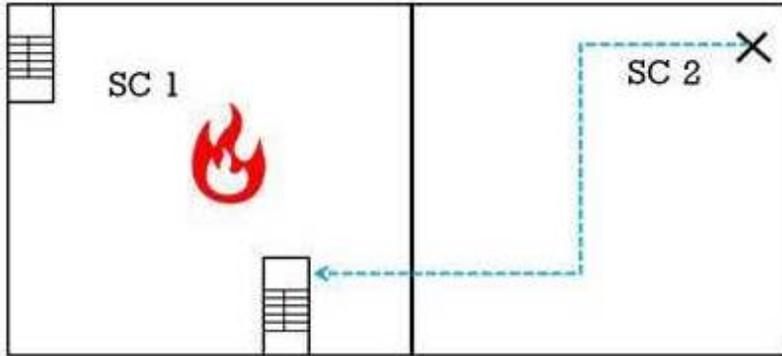
**407.5.2 Independent egress.** *A means of egress shall be provided from each smoke compartment created by smoke barriers without having to return through the smoke compartment from which means of egress originated. Smoke compartments that do not contain an exit shall be provided with direct access to not less than two adjacent smoke compartments.*

**Reason:** The ICC Ad Hoc Committee on Healthcare (AHC) has just completed its 4th year. The AHC was established by the ICC Board to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. This is a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Information on the AHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the AHC effort can be downloaded from the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>. This code change is intended to more appropriately handle arrangement of the means of egress in a defend in place environment (i.e. hospitals and nursing homes.) The intent is to ensure that the arrangement of smoke compartments and exits prevents a situation where you have a "dead end smoke compartment." This requirement already exists within the federal Medicare requirements. This proposes rule (and the existing section) does not require a stair in every smoke compartment.

In Example 1, an occupant in smoke compartment 2 (SC2) would be forced to travel into smoke compartment 1 to access one of the two required exits for the floor. This is compliant with the current requirement that the occupant does not "return through the smoke compartment of egress origin." The smoke compartment where the mean of egress originates is smoke compartment 2. The dashed path does not leave smoke compartment 2, then RETURN back into smoke compartment 2. While this example meets current code, it creates an unacceptable hazard by creating a "dead end smoke compartment."

The proposed language would require that one of the stairs be located in smoke compartment 2, or, that the floor plate be rearranged to create access to two adjacent smoke compartments from compartment SC2.

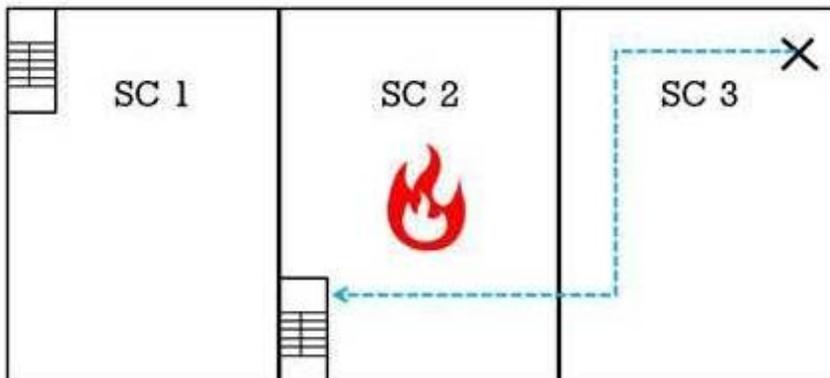
**Example 1**



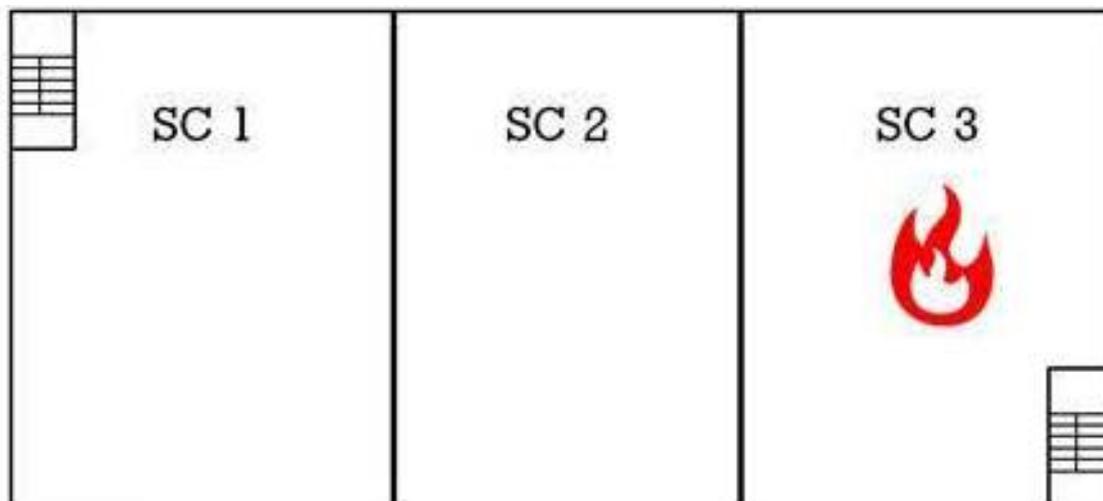
A similar condition exists in Example 2. An occupant in smoke compartment 3 would be required to travel through smoke compartment 2 to access an exit. If smoke compartment #2 has a fire, then the exiting is compromised. In this example, SC3 would be non-compliant with the proposed rule because it 1) does not have a stair, or, 2) it does not have access to two directly adjacent smoke compartments.

There is an easy fix to this problem: relocate the stair to smoke compartment #3 (see Example 3). That way, smoke compartments 1 and 3 have access directly to the stair, and smoke compartment #2 has access to at least two directly adjacent smoke compartments.

**Example 2**



**Example 3**



**Cost Impact:** Will not increase the cost of construction

This change will typically not increase the cost of construction, in that it does not affect how many exits are provided. It does limit the location on the floor plate, which could have cost implications. In worse case an additional smoke compartment would be required, which would definitely increase construction cost. Practically, since this is a federal requirement already there will be no perceived increase to facilities.

G111-15 : 407.5.2-  
WILLIAMS4238

---

### **Public Hearing Results**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The proposal provides a much safer configuration requirement to support the defend in place concept. It eliminates the dead end smoke compartment that only has access to one other compartment. The committee understood that the phrase 'two adjacent smoke compartments' is intended that both individually adjacent to the smoke compartment where egress is initiated and not that the two other smoke compartments are not simply adjacent to each other.

**Assembly Action :**

**None**

---

### **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : Gregory Nicholls, representing The Preview Group (gnicholls@preview-group.com) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

#### **2015 International Building Code**

**407.5.2 Independent egress.** *A means of egress shall be provided from each smoke compartment created by smoke barriers without having to return through the smoke compartment from which means of egress originated. Smoke compartments that do not contain an exit shall be provided with direct-access egress to not less than two-adjacent smoke compartments.*

**Commenter's Reason:** As a friendly clarification to the original, this modification revises the term used in the new second sentence from "access" to "egress", which will be consistent with the section title and with the first sentence of this code section. The term "adjacent" should be removed to eliminate confusion from an interpretation that would mean egress is being required from the original smoke compartment to two additional smoke compartments. The graphic submitted did very well to explain the concept, but since this will appear without it and just as simple code text, this should help clear up how many compartments are actually being required.

G111-15

---

# G114-15

## 410.3.4

### **Proposed Change as Submitted**

**Proponent :** Stephen DiGiovanni, representing Southern Nevada Chapter of ICC (sdigiovanni@clarkcountynv.gov)

## **2015 International Building Code**

**Revise as follows:**

**410.3.4 Proscenium wall.** Where the *stage* height is greater than 50 feet (15 240 mm), all portions of the *stage* shall be completely separated from the seating area by a proscenium wall with not less than a 2-hour *fire-resistance rating* extending continuously from the foundation to the roof.

**Exception:** Where the *stage* is located in a building of Type I construction, *proscenium walls*:

1. Where located above a minimum 2-hour *horizontal assembly* shall be permitted to extend from the top of this *horizontal assembly*.
2. Where located beneath a minimum 2-hour *horizontal assembly* are permitted to terminate at the underside of this *horizontal assembly*.
3. Are not permitted to terminate at a *horizontal assembly* where the provisions of Item 2 of Section 403.2.1.1 have been applied.

**Reason:** Stages with heights of greater than 50 feet are more commonly occurring in venues throughout the country. Additionally, these venues are also increasingly designed with either/both basements (beneath) and/or additional floors above the actual theater levels.

Basements help these venues to attract popular traveling "Broadway-style" shows that utilize large floor lifts from beneath the stage as part of their productions. In many cases, these basements are enlarged to include additional uses such as; office, storage rooms, and other back-of-house spaces.

Levels above the stage are more frequently occurring due to the proliferation of these venues being incorporated into the footprint of high-rise hotel towers, beneath "green" roof gardens (occupiable), and/or beneath additional meeting room/spaces (such as those used in urban-area convention centers).

Currently, Section 410.3.4 requires 2-hour proscenium walls to be continuously constructed from the foundation to the roof of a structure containing a stage with a height greater than 50 feet. Where venues are constructed with floors above and/or below such theaters, this provision requires proscenium walls to continue entirely through those floor levels regardless of the use and/or risks associated with them. This fails to recognize that venues having large stages are no longer limited to single-story buildings.

The proposed amendment would allow the proscenium to terminate at minimum 2-hour fire-resistance-rated horizontal assemblies above and/or below the space containing the stage.

**Cost Impact:** Will not increase the cost of construction

This proposal does not add to the cost of construction, and the added exception allows an option to existing code, but does not limit the use of the existing code

---

## **Public Hearing Results**

**Committee Action:****Disapproved**

**Committee Reason:** The committee agreed that the concept raised by the proposal is very much needed because many times theater stagers are part of a much larger and complex building. The proposed text or that contained in the modification presented didn't provide a full 'encapsulazation of the stage because the lateral directions of the proscenium wall are not addressed.

**Assembly Motion:****As Modified****Online Vote Results:****Successful**

Support: 50.63% (161) Oppose: 49.37% (157)

**Assembly Action :****Approved as Modified****Online Floor Modification:**

**410.3.4 Proscenium wall.** Where the stage height is greater than 50 feet (15 240 mm), all portions of the stage shall be completely separated from the seating area by a proscenium wall with not less than a 2-hour fire-resistance rating extending continuously from the foundation to the roof.

**Exception:** Where the stage is located in a building of Type I construction, proscenium walls:

1. ~~Where~~Shall be permitted to terminate at the top of the foundation or floor/ceiling assembly where located above a minimum 2-hour horizontal assembly shall be permitted to extend from the top of this horizontal assembly in accordance with Section 711.
2. ~~Where located beneath a minimum 2-hour horizontal assembly are~~Shall be permitted to terminate at the underside of this a floor/ceiling assembly where located below a minimum 2-hour horizontal assembly in accordance with Section 711.
3. ~~Are~~Shall not be permitted to terminate at a horizontal assembly where the provisions of Item 2 of Section 403.2.1.1 have been applied.

---

## **Individual Consideration Agenda**

## Public Comment 1:

### **Proponent : Assembly Action**

**requests Approve as Modified by Successful Assembly Action.**

**410.3.4 Proscenium wall.** Where the stage height is greater than 50 feet (15 240 mm), all portions of the stage shall be completely separated from the seating area by a proscenium wall with not less than a 2-hour fire-resistance rating extending continuously from the foundation to the roof.

**Exception:** Where the stage is located in a building of Type I construction, proscenium walls:

1. ~~Where~~Shall be permitted to terminate at the top of the foundation or floor/ceiling assembly where located above a minimum 2-hour horizontal assembly ~~shall be permitted to extend from the top of this horizontal assembly in accordance with Section 711.~~
2. ~~Where located beneath a minimum 2-hour horizontal assembly are~~Shall be permitted to terminate at the underside of this a floor/ceiling assembly where located below a minimum 2-hour horizontal assembly in accordance with Section 711.
3. ~~Are~~Shall not be permitted to terminate at a horizontal assembly where the provisions of Item 2 of Section 403.2.1.1 have been applied.

**Commenter's Reason:** This code change proposal is on the agenda for individual consideration because the proposal received a successful assembly action. The assembly action for Approve as Modified was successful by a vote of 50.63% (161) to 49.37% (157) by eligible members online during the period of May 14 - May 28, 2015.

---

G114-15

# G115-15

**412.3, 412.3.1 (New), 412.3.1.1, TABLE 412.3.1, 412.3.1.2 (New), 412.3.1.3 (New), 412.3.2 (New), 412.3.2, 412.3.3, 412.3.4, 412.3.4.1, 412.3.3 (New), [F] 412.3.5, 412.3.3.2 (New), 412.3.3.3 (New), 412.3.6, 412.3.4.1 (New), 412.3.7, 412.3.7.1, 412.3.8**

## **Proposed Change as Submitted**

**Proponent :** Christopher Moran, Jensen Hughes (cmoran@haifire.com); Eric Rosenbaum, representing Airport Traffic Control Tower Fire/Life Safety Technical Working Group

## **2015 International Building Code**

**412.3 Airport traffic control towers.** The provisions of Sections 412.3.1 through 412.3.8 shall apply to airport traffic control towers occupied only for the following uses:

1. Airport traffic control cab.
2. Electrical and mechanical equipment rooms.
3. Airport terminal radar and electronics rooms.
4. Office spaces incidental to the tower operation.
5. Lounges for employees, including sanitary facilities.

### **Add new text as follows:**

**412.3.1 Construction.** The construction of airport traffic control towers shall comply with the provisions of Sections 412.3.1.1 through 412.3.1.3.

### **Revise as follows:**

**412.3.1 412.3.1.1 Type of construction.** Airport traffic control towers shall be constructed to comply with the height limitations of Table ~~412.3.1~~ 412.3.1.1.

**TABLE ~~412.3.1~~ 412.3.1.1  
HEIGHT LIMITATIONS FOR AIRPORT TRAFFIC CONTROL TOWERS**

<b>TYPE OF CONSTRUCTION</b>	<b>HEIGHT<sup>a</sup> (feet)</b>
IA	Unlimited
IB	240
IIA	100
IIB	85

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m<sup>2</sup>.

a. Height to be measured from grade plane to cab floor.

**Add new text as follows:**

**412.3.1.2 Structural integrity of interior exit stairways and elevator hoistway enclosures.** Enclosures for interior exit stairways and elevator hoistway enclosures shall comply with Section 403.2.3.

**412.3.1.3 Sprayed fire-resistant materials (SFRM).** The bond strength of the SFRM installed in airport traffic control towers shall be in accordance with Section 403.2.4.

**412.3.2 Means of egress and evacuation.** The means of egress in airport traffic control towers shall comply with Sections 412.3.2.1 through 412.3.2.3.

**Revise as follows:**

~~412.3.2~~ **412.3.2.1 Stairways.** Stairways in airport traffic control towers shall be in accordance with Section 1011. ~~Stairways~~ Exit stairways shall be smokeproof enclosures complying with one of the alternatives provided in Section 909.20.

**Exception:** Stairways in airport traffic control towers are not required to comply with Section 1011.12.

~~412.3.3~~ **412.3.2.2 Exit access.** *No change to text.*

~~412.3.4~~ **412.3.2.3 Number of exits.** *No change to text.*

~~412.3.4.1~~ **412.3.2.3.1 Interior finish.** *No change to text.*

**Add new text as follows:**

**412.3.3 Emergency Systems.** The detection, alarm and emergency systems of airport traffic control towers shall comply with Sections 412.3.3.1 through 412.3.3.3.

**Revise as follows:**

**[F] ~~412.3.5~~ 412.3.3.1 Automatic fire smoke detection systems.** Airport traffic control towers shall be provided with an automatic fire- smoke detection system installed in accordance with Section ~~907.2~~ 907.2.22.

**Add new text as follows:**

**412.3.3.2 Fire command center.** The fire command center of an airport control tower shall comply with Section 911.

**Exceptions:**

1. Location. The fire command center is permitted to be located in the airport control tower or an adjacent contiguous building where building functions are interdependent.

2. Size. The room shall be not less than 150 square feet (14 m<sup>2</sup>) in area with a minimum dimension of 10 feet (3048 mm).

3. Required features. The following features shall not be required in an airport traffic control tower fire command center.

3.1. Emergency voice/alarm control unit.

3.2. Public address system.

3.3. Status indicators and controls for the air distributions centers.

3.4. Generator supervision devices, manual start and transfer features.

3.5. Elevator emergency or standby power switches where emergency or standby power is provided.

**412.3.3.3 Smoke removal** Smoke removal in airport traffic control towers shall be provided in accordance with Section 403.4.7.

**Revise as follows:**

~~412.3.6~~ **412.3.4 Automatic sprinkler system.** *No change to text.*

**Add new text as follows:**

**412.3.4.1 Fire pump room.** Fire pumps shall be located in rooms that are separated from all other areas of the building by 2-hour fire barriers constructed in accordance with Section 707 or 2-hour horizontal assemblies constructed in accordance with Section 711, or both.

**Exception:** Separation is not required for fire pumps physically separated in accordance with NFPA 20.

**Revise as follows:**

~~412.3.7~~ **412.3.5 Elevator protection.** **Protection of elevator wiring and cables.** ~~Wires or~~

Wiring and cables that provide normal or standby power, serving elevators in airport traffic control signals, communication with the car, lighting, heating, air conditioning, ventilation and fire detecting systems to elevators towers shall be protected by construction having a fire resistance rating of not less than 1 hour, or shall be circuit integrity cable having a fireresistance rating of not less than 1 hour. in accordance with Section 3007.8.1.

~~412.3.7.1~~ **412.3.5.1 Elevators for occupant evacuation.** *No change to text.*

~~412.3.8~~ **412.3.6 Accessibility.** Airport traffic control towers need not shall be accessible except as specified in the provisions of Chapter 11. Section 1104.4.

**Reason:** All of the proposed changes are the recommendation of the Air Traffic Control Tower Fire Life Safety Task Group, and reflect the current approach to fire protection and life safety in airport traffic control towers (ATCT). The fire safety criteria applicable to ATCTs are originally based on an agreement between the operator of and controllers utilizing the ATCTs. Many of the changes relate to providing extra protection for the controllers and fire service.

ATCTs create a unique hazard. ATCTs typically have a limited number of occupants. In addition, occupants must be awake and alert. The hazard associated with ATCTs is affected by the building's limited uses, height, and the potential delay in evacuation

because of the handoff of flights.

The occupied levels of an ATCT are typically located at the top of the structure that typically contains support equipment and services but has limited occupancy. In addition, the area of ATCTs has been increasing, even though the number of floors located on top of the shaft is still typically limited.

Based on the previous revision to the ATCT section, all high-rise requirements were no longer applicable. The sections added are specifically chosen from a review of code requirements that are applicable to high rise buildings. The limited sections applied to ATCTs reflect the limited area of the ATCT, especially the shaft; communications protocol; power applications; construction methods; fire and ATCT shut down history; and that the typical locations of ATCT is in secluded areas.

Section 412.3.1 - The proposed revisions add a construction sub-section for ATCTs. This subsection would include the original requirement regarding construction types and also include proposed criteria for the structural integrity of interior exit stairways and elevator hoistway enclosures and sprayed fire-resistant materials in limited seismic circumstances.

Section 412.3.1.2 - The proposed revision provides additional protection for the controllers when egressing the facility. Adding structural integrity criteria to the exit enclosures provides additional protection in an occupancy where delayed evacuations may be required.

Section 412.3.1.3 - The proposed revision provides additional structural protection by increasing the minimum bond strengths for sprayed fire-resistant materials. This raises the minimum bond strength from 150 psf to 430 psf for all ATCTs, with additional increases based on the height of the ATCT. The proposed requirement provides additional protection of the structural frame where delayed evacuations may be required.

Section 412.3.2 - The proposed revisions add a means of egress subsection. This proposed subsection provides consistency in Section 412.3 by organizing the various ATCT requirements into subsections.

Section 412.3.3 - The proposed revisions add an emergency systems subsection which includes the existing automatic fire detections systems requirements. New provisions of this subsection would include fire command centers and smoke removal.

Section 412.3.3.1 - The terminology of this section was changed to match that of section 907.2.22 and IFC section 914.8.1. This section is referenced from IFC section 914.8.1.

Section 412.3.3.2 is proposed to provide a control location for fire fighter operations due to the unique aspects of fighting fires in ATCTs. It is proposed that the fire command center be located in either the tower footprint or the adjacent base building (where provided). The base building supports the tower operations and is built contiguous to the ATCT. The majority of the requirements were taken from Section 911 with a few exceptions. The emergency voice/alarm communication system and public address system controls were removed as ATCTs are not provided with these systems. The fire alarm control unit would be located in the fire command center and provide status indicators for all associated systems. Status indicators and controls for the air distribution system was also removed due to the limited HVAC system sizes provided in ATCTs. Generator supervision devices, manual start and transfer features were also removed as the fire alarm system will monitor the generator conditions. The requirement for elevator power selector switches was removed as ATCTs are typically designed with a single elevator.

Section 412.3.3.3 is proposed to provide a method to aid fire fighter and salvage operations and get the ATCT back to operational status faster. The addition of smoke removal will reduce the down time of the tower and provide a method to remove smoke in a structure that has many compartments.

Section 412.3.4.1 is proposed to provide additional protection for the fire pump and require a minimum of 2 hour fire resistance rated separations from surrounding areas. As ATCTs are not considered a high-rise building, the 1-hour exception for fire pump room enclosures could be used. The intent of this section is to clarify that 2-

hour separations should be provided for ATCTs.

Section 412.3.5 has been revised to address changes in code language to the 2015 Edition and reference appropriate criteria.

Section 412.3.6 is proposed to be revised due to confusion based on the wording of the current requirement. In some cases, the current wording has been taken to mean that accessibility requirements do not apply to ATCTs. The revision clarifies that ATCTs are required to be accessible except as exempted by Section 1104.4.

**Cost Impact:** Will increase the cost of construction

This code change will increase the cost of construction from the current code requirements; however, reflects building practices of ATCTs.

G115-15 : 412.3-  
MORAN5043

---

## **Public Hearing Results**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The proposal provides a comprehensive update to the airport control tower facilities. The proponent is a group purposely formed to address these facilities. This reflects current approach for safety in these facilities. The committee noted that the text of Section 412.3.3.2 doesn't clearly required the fire command center as the proponent stated was the intent. There was also concern that for smaller airfields where towers may be only a few stories, all of these requirements - which are clearly based on the high-rise building provisions may be a bit of an overkill.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : Christopher Moran, representing Airport Traffic Control Tower Fire Life Safety Task Group (cmoran@jensenhughes.com); Eric Rosenbaum, representing Airport Traffic Control Tower Fire Life Safety Task Group (erosenbaum@jensenhughes.com) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

**412.3.1.2 Structural integrity of interior exit stairways and elevator hoistway enclosures.** Enclosures for interior exit stairways and elevator hoistway enclosures shall comply with Section 403.2.3 in airport traffic control towers where the control cab is located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access.

**412.3.1.3 Sprayed fire-resistant materials (SFRM).** The bond strength of the SFRM installed in airport traffic control towers shall be in accordance with Section 403.2.4 where the control cab is located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access.

**412.3.3.2 Fire command center.** A fire command center shall be provided in airport traffic control towers where the control cab is located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access. ~~The fire command center of an airport control tower shall comply with Section 911.~~

**Exceptions:**

1. Location. The fire command center is permitted to be located in the airport control tower or an adjacent contiguous building where building functions are interdependent.
2. Size. The room shall be not less than 150 square feet (14 m<sup>2</sup>) in area with a minimum dimension of 10 feet (3048 mm).
3. Required features. The following features shall not be required in an airport traffic control tower fire command center.
  - 3.1. Emergency voice/alarm control unit.
  - 3.2. Public address system.
  - 3.3. Status indicators and controls for the air distributions centers.
  - 3.4. Generator supervision devices, manual start and transfer features.
  - 3.5. Elevator emergency or standby power switches where emergency or standby power is provided.

**Commenter's Reason:** All of the proposed changes are the recommendation of the Air Traffic Control Tower Fire Life Safety Task Group, and reflect the current approach to fire protection and life safety in airport traffic control towers (ATCT). The fire safety criteria applicable to ATCTs are originally based on an agreement between the operator of and controllers utilizing the ATCTs. Many of the changes relate to providing extra protection for the controllers and fire service.

ATCTs create a unique hazard. ATCTs typically have a limited number of occupants. In addition, occupants must be awake and alert. The hazard associated with ATCTs is affected by the building's limited uses, height, and the potential delay in evacuation because of the handoff of flights.

The occupied levels of an ATCT are typically located at the top of the structure that typically contains support equipment and services but has limited occupancy. In addition, the area of ATCTs has been increasing, even though the number of floors located on top of the shaft is still typically limited.

The revision to section 412.3.1.2 is proposed to clarify when the structural integrity requirements are required in ATCTs. This is a change based on comments during the Committee Action Hearings.

The revision to section 412.3.1.3 is proposed to clarify when the increased sprayed fire-resistant materials requirements are required in ATCTs. This is a change based on comments during the Committee Action Hearings.

The revision to section 412.3.3.2 is proposed to clarify when fire command centers are required in ATCTs. This is a change based on comments during the Committee Action Hearings.

# G117-15

412.3.7, 909.20.6.1, [F] 913.2.2, (IFC 913.2.2), [F] 2702.3, 3007.8.1, 3008.8.1, Chapter 35

## Proposed Change as Submitted

**Proponent :** Robert Davidson (rjd@davidsoncodeconcepts.com)

### 2015 International Building Code

**Revise as follows:**

**412.3.7 Elevator protection.** Wires or cables that provide normal or standby power, control signals, communication with the car, lighting, heating, air conditioning, *ventilation* and fire detecting systems to elevators shall be protected by ~~construction having~~ one of the following methods:

1. Cables used for survivability of required critical circuits shall be listed in accordance with UL 2196 and shall have a *fire-resistance rating* of not less than 1 hour, ~~or~~ .
2. Electrical circuit protective systems shall be ~~circuit integrity cable~~ having tested in accordance with ASTM E 1725 and shall have a ~~fireresistance~~*fire-resistance rating* of not less than 1 hour. Electrical circuit protective systems shall be installed in accordance with their listing requirements.
3. Construction having a *fire-resistance rating* of not less than 1 hour.

**909.20.6.1 Ventilation systems.** Smokeproof enclosure ventilation systems shall be independent of other building ventilation systems. The equipment, control wiring, power wiring and ductwork shall comply with one of the following:

1. Equipment, control wiring, power wiring and ductwork shall be located exterior to the building and directly connected to the smokeproof enclosure or connected to the smokeproof enclosure by ductwork enclosed by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.
2. Equipment, control wiring, power wiring and ductwork shall be located within the smokeproof enclosure with intake or exhaust directly from and to the outside or through ductwork enclosed by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.
3. Equipment, control wiring, power wiring and ductwork shall be located within the building if separated from the remainder of the building, including other mechanical equipment, by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.

**Exceptions ~~Exception:~~**

1. ~~Control wiring and power wiring utilizing located outside of a 2-hour rated cable or cable system fire barrier construction shall be protected using any one of the following methods:~~

~~1.1 Cables used for survivability of required critical circuits shall be listed in accordance with UL 2196 and shall have a fire-resistance rating of not less than 2 hours.~~

~~1.2 Where encased with not less than 2 inches (51 mm) of concrete.~~

~~1.3 Control wiring and power wiring protected by a listed electrical Electrical circuit protective system systems tested in accordance with ASTM E 1725 and shall have a fire-resistance rating of not less than 2 hours. Electrical circuit protective systems shall be installed in accordance with their listing requirements.~~

**[F] 913.2.2 Circuits supplying fire pumps.** Cables used for survivability of circuits supplying fire pumps shall be protected using one of the following methods:

1. Cables used for survivability of required critical circuits shall be listed in accordance with UL 2196 and shall have a fire-resistance rating of not less than 1 hour.

2. Electrical circuit protective systems shall be tested in accordance with ASTM E 1725 and shall have a fire-resistance rating of not less than 1 hour. Electrical circuit protective systems shall be installed in accordance with their listing requirements.

3. Construction having a fire-resistance rating of not less than 1 hour.

**[F] 2702.3 Critical circuits.** Required critical circuits shall be protected using one of the following methods:

1. Cables used for survivability of required critical circuits shall be listed in accordance with UL 2196 and shall have a fire-resistance rating of not less than 1 hour.

2. Electrical circuit protective systems shall be tested in accordance with ASTM E 1725 and shall have a fire-resistance rating of not less than 1 hour. Electrical circuit protective systems shall be installed in accordance with their listing requirements.

3. Construction having a fire-resistance rating of not less than 1 hour.

**3007.8.1 Protection of wiring or cables.** Wires or cables that are located outside of the elevator hoistway and machine room and that provide normal or standby power, control signals, communication with the car, lighting, heating, air conditioning, *ventilation* and fire-detecting systems to fire service access elevators shall be ~~protected by construction having~~ using one of the following methods:

1. Cables used for survivability of required critical circuits shall be listed in accordance with UL 2196 and shall have a *fire-resistance rating* of not less than 2 hours~~7~~.

2. Electrical circuit protective systems shall be a circuit integrity cable having tested in accordance with ASTM E 1725 and shall have a fire-resistance rating of not less than 2 hours~~or~~. Electrical circuit protective systems shall be protected by a listed electrical protective system installed in accordance with their listing requirements.

3. Construction having a fire-resistance rating of not less than 2 hours.**E**

**Exception:** Wiring and cables to control signals are not required to be protected provided that wiring and cables do not serve Phase II emergency in-car operations.

**3008.8.1 Protection of wiring or cables.** Wires or cables that are located outside of the elevator hoistway, machine room, control room and control space and that provide normal or standby power, control signals, communication with the car, lighting, heating, air conditioning, *ventilation* and fire-detecting systems to occupant ~~evacuation~~ evacuation elevators shall be protected ~~by construction having~~ using one of the following methods:

1. Cables used for survivability of required critical circuits shall be listed in accordance with UL 2196 and shall have a *fire-resistance rating* of not less than 2 hours, shall be circuit integrity cable having a fire-resistance rating of not less than 2 hours or shall be protected by a listed electrical circuit protective system having a *fire-resistance rating* of not less than 2 hours.

2. Electrical circuit protective systems shall be tested in accordance with ASTM E 1725 and shall have a *fire-resistance rating* of not less than 2 hours. Electrical circuit protective systems shall be installed in accordance with their listing requirements.

3. Construction having a *fire-resistance rating* of not less than 2 hours.

**Exception:** Wiring and cables to control signals are not required to be protected provided that wiring and cables do not serve Phase II emergency in-car operation.

**Add new standard(s) as follows:** ADD NEW STANDARD TO CHAPTER 35:

ASTM E 1725 "STANDARD TEST METHODS FOR FIRE TESTS OF FIRE-RESISTIVE BARRIER SYSTEMS FOR ELECTRICAL SYSTEM COMPONENTS"

**Reason:** This series of code changes is intended to standardize the methods of protecting wiring or cables determined to be essential for the operation of systems and building services during emergency conditions. The basic intent of the code change proposals is already in the code, albeit somewhat random and inconsistent between sections. The change would permit protection of critical circuits using the most up to date technology based on current test methods while still recognizing the commonly used generic fire resistant materials constructed as an assembly already approved for use. Other than reformatting each section and adding a requirement for electrical circuit protective systems to be tested to the appropriate ASTM standard, there is no other significant change to what we believe is the intent of the code, and what the code already requires and/or permits.

**Cost Impact:** Will not increase the cost of construction  
This code change will not increase the cost of construction since the intent of the code is not changed by this proposal.

**Analysis:** A review of the standard proposed for inclusion in the code, ASTM E 1725 "STANDARD TEST METHODS FOR FIRE TESTS OF FIRE-RESISTIVE BARRIER SYSTEMS FOR ELECTRICAL SYSTEM COMPONENTS", , with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or

---

## **Public Hearing Results**

**Committee Action:** **Approved as Submitted**

**Committee Reason:** The proposal provides consistency for the protection of cables and electrical circuits. The five current locations addressing this issue have five unique sets of requirements. This proposal will provide consistency. It allows other methods that have been tested and proved effective. The concern raised is the term 'critical circuit'. The term is undefined and the terms used in the NEC are different.

**Assembly Action :** **None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : Jonathan Roberts, representing Underwriters Laboratories (jonathan.roberts@ul.com) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

**412.3.7 Elevator protection.** Wires or cables that provide normal or standby power, control signals, communication with the car, lighting, heating, air conditioning, *ventilation* and fire detecting systems to elevators shall be protected by one of the following methods:

1. Cables used for survivability of required critical circuits shall be listed in accordance with UL 2196 and shall have a *fire-resistance rating* of not less than 1 hour.
2. Electrical circuit protective systems shall ~~be tested in accordance with ASTM E 1725 and shall~~ have a *fire-resistance rating* of not less than 1 hour. Electrical circuit protective systems shall be installed in accordance with their listing requirements.
3. Construction having a *fire-resistance rating* of not less than 1 hour.

**909.20.6.1 Ventilation systems.** Smokeproof enclosure ventilation systems shall be independent of other building ventilation systems. The equipment, control wiring, power wiring and ductwork shall comply with one of the following:

1. Equipment, control wiring, power wiring and ductwork shall be located exterior to the building and directly connected to the smokeproof enclosure or connected to the smokeproof enclosure by ductwork enclosed by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.

2. Equipment, control wiring, power wiring and ductwork shall be located within the smokeproof enclosure with intake or exhaust directly from and to the outside or through ductwork enclosed by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.
3. Equipment, control wiring, power wiring and ductwork shall be located within the building if separated from the remainder of the building, including other mechanical equipment, by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.

**Exception:**

1. Control wiring and power wiring located outside of a 2-hour fire barrier construction shall be protected using any one of the following methods:
  - 1.1. Cables used for survivability of required critical circuits shall be listed in accordance with UL 2196 and shall have a fire-resistance rating of not less than 2 hours.
  - 1.2. Where encased with not less than 2 inches (51 mm) of concrete.
  - 1.3. Electrical circuit protective systems ~~tested in accordance with ASTM E 1725 and~~ shall have a fire-resistance rating of not less than 2 hours. Electrical circuit protective systems shall be installed in accordance with their listing requirements.

**[F] 913.2.2 Circuits supplying fire pumps.** Cables used for survivability of circuits supplying fire pumps shall be protected using one of the following methods:

1. Cables used for survivability of required critical circuits shall be listed in accordance with UL 2196 and shall have a *fire-resistance rating* of not less than 1 hour.
2. Electrical circuit protective systems ~~shall be tested in accordance with ASTM E 1725 and~~ shall have a fire-resistance rating of not less than 1 hour. Electrical circuit protective systems shall be installed in accordance with their listing requirements.
3. Construction having a *fire-resistance rating* of not less than 1 hour.

**[F] 2702.3 Critical circuits.** Required critical circuits shall be protected using one of the following methods:

1. Cables used for survivability of required critical circuits shall be listed in accordance with UL 2196 and shall have a *fire-resistance rating* of not less than 1 hour.
2. Electrical circuit protective systems ~~shall be tested in accordance with ASTM E 1725 and~~ shall have a fire-resistance rating of not less than 1 hour. Electrical circuit protective systems shall be installed in accordance with their listing requirements.

3. Construction having a *fire-resistance rating* of not less than 1 hour.

**3007.8.1 Protection of wiring or cables.** Wires or cables that are located outside of the elevator hoistway and machine room and that provide normal or standby power, control signals, communication with the car, lighting, heating, air conditioning, *ventilation* and fire-detecting systems to fire service access elevators shall be protected using one of the following methods:

1. Cables used for survivability of required critical circuits shall be listed in accordance with UL 2196 and shall have a *fire-resistance rating* of not less than 2 hours.
2. Electrical circuit protective systems ~~shall be tested in accordance with ASTM E 1725 and~~ shall have a fire-resistance rating of not less than 2 hours. Electrical circuit protective systems shall be installed in accordance with their listing requirements.
3. Construction having a *fire-resistance rating* of not less than 2 hours.

**Exception:** Wiring and cables to control signals are not required to be protected provided that wiring and cables do not serve Phase II emergency in-car operations.

**3008.8.1 Protection of wiring or cables.** Wires or cables that are located outside of the elevator hoistway, machine room, control room and control space and that provide normal or standby power, control signals, communication with the car, lighting, heating, air conditioning, *ventilation* and fire-detecting systems to occupant evacuation elevators shall be protected using one of the following methods:

1. Cables used for survivability of required critical circuits shall be listed in accordance with UL 2196 and shall have a *fire-resistance rating* of not less than 2 hours.
2. Electrical circuit protective systems ~~shall be tested in accordance with ASTM E 1725 and shall have a~~ *fire-resistance rating* of not less than 2 hours. Electrical circuit protective systems shall be installed in accordance with their listing requirements.
3. Construction having a *fire-resistance rating* of not less than 2 hours.

**Exception:** Wiring and cables to control signals are not required to be protected provided that wiring and cables do not serve Phase II emergency in-car operation.

**Commenter's Reason:** We agree with many of the updates in this proposal, which are reflected in this public comment. However we cannot support the addition of ASTM E 1725 in these sections.

Cables used for survivability of required critical circuits should be tested to evaluate their functionality during a period of fire exposure. UL 2196 evaluates a cable's ability to function during the fire exposure test, including having voltage and current applied to the cable during the fire exposure portion of the test. It also includes specific conditions of acceptance to verify the cable's functionality, both during and after the fire exposure and a hose stream test.

ASTM E1725, which is proposed as an alternate method for determining cable survivability does not evaluate the cable's ability to function during the fire test.

Instead it includes acceptance criteria that does not allow temperatures on the cable from exceeding an average temperature 250°F above ambient or an individual thermocouple temperature from exceeding 325°F above ambient, both which are far in excess of the temperature ratings of most cables used in these applications. It also does not evaluate performance after hose stream test exposure.

## *Public Comment 2:*

**Proponent : Marilyn Williams, National Electrical Manufacturers Association, representing National Electrical Manufacturers Association requests Disapprove.**

**Commenter's Reason:** NEMA opposes this proposal. The proposed new text for testing Electrical Circuit Protective Systems to ASTM E1725 is in conflict with National Electrical Code requirements.

Electrical Circuit Protective Systems are listed under UL Category FHIT and include cables, cables in conduit, as well as mats and wraps used with conduit and cable trays. The National Electrical Code® requires that these systems be listed . . . for example in NEC Article 695 Fire Pumps, one of the allowable wiring methods is to use a listed electrical circuit protective system with a minimum of a 2-hour fire rating. An Information Note states that these systems are covered under UL Category FHIT and that the proper installation requirements shown in the listing must be followed to maintain the fire rating. This same requirement for listing is in Article 700, Emergency Systems, and Article 708 Critical Operations Power Systems.

Example of text from Article 695 Fire Pumps: (695.6)

(d) Inside of a Building. Where routed through a building, the conductors shall be installed using one of the following methods:

(1) Be encased in a minimum 50 mm (2 in.) of concrete (2) Be protected by a fire-rated assembly listed to achieve a minimum fire rating of 2 hours and dedicated to the fire pump circuit(s)

(3) Be a listed electrical circuit protective system with a minimum 2-hour fire rating

Informational Note: UL guide information for electrical circuit protective systems (FHIT) contains information on proper installation requirements to maintain the fire rating.

---

**G117-15**

# G118-15

## 420.2

### **Proposed Change as Submitted**

**Proponent :** Carl Baldassarra, P.E., FSFPA, P.E., FSFPE, Chair, Code Technology Committee, representing Code Technology Committee (CTC@iccsafe.org)

## **2015 International Building Code**

### **Revise as follows:**

**420.2 Separation walls.** Walls separating *dwelling units* in the same building, walls separating *sleeping units* in the same building and walls separating *dwelling* or *sleeping units* from other occupancies contiguous to them in the same building shall be constructed as *fire partitions* in accordance with Section 708.

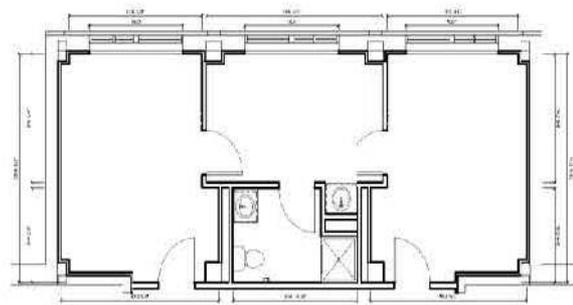
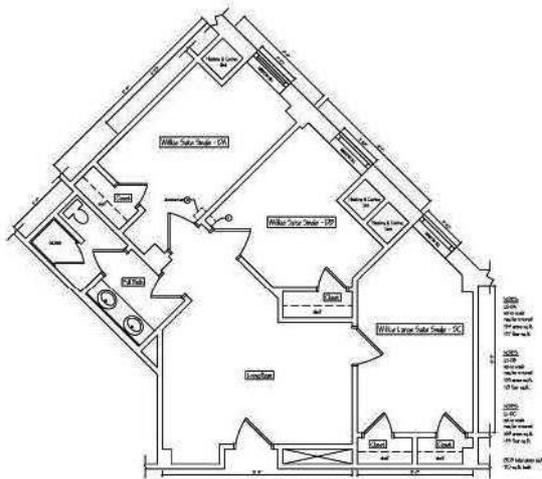
### **Exceptions:**

1. Where sleeping units include private bathrooms, walls between bedrooms and the associated private bathrooms are not required to be constructed as fire partitions.
2. Where sleeping units are constructed as suites, walls between bedrooms within the sleeping unit and the walls between the bedrooms and associated living spaces are not required to be constructed as fire partitions.

**Reason:** There are two concerns related to separation - 1) suites within hotels, dormitories, and assisted living where a sleeping rooms may share a bathroom, or sleeping rooms may have associated living space, and 2) group homes that operate as a single family unit. There are separate proposals to deal with each. It is the intent for these proposals to work together. This proposal is for the suites.

Some hotel rooms, assisted living and dormitories are designed as suites (see examples below). In a hotel or assisted living space, common designs are one or two bedrooms a living space and private bath. In a dorm, common designs are two rooms with a private bath between; or three or four bedrooms with a living space and private bathrooms. These units act as a group similar to an apartment; and without a kitchen, the associated fire hazards are reduced. When these bedrooms are combined into suites, they should be considered as one unit for purposes of separation. A separation would still be required between these units and the common corridor.

**Figures for CTC Care proposal to to Section 420 (6B)**



This is part of a group of proposals to address this style of design and group homes within single family residences. Changes are proposed for the definition for sleeping units, the Group classifications in Section 310.4 and 310.5, separation requirements in Section 420, and coordination with accessibility requirements in Section 1107. Proposals will be put forward as part of Group B for fire and smoke alarm systems. The proposals could work separately.

The ICC Code Technology Committee (CTC) has just completed its 10th year. The ICC Board has decided to sunset the CTC. The sunset plan includes re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). The two remaining CTC Areas of Study are Care Facilities and Elevator Lobbies/WTC Elevator issues. This proposal falls under the Care Facilities Area of Study. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website at: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>.

The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

**Cost Impact:** Will not increase the cost of construction  
It is the committee's understanding that current language is not clear for where separations are required. In some cases this would be a reduction in separation requirements, and therefore a decrease in cost.

**G118-15 : 420.2 -  
BALDASSARRA4272**

---

**Public Hearing Results**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This is aimed at clarifying what constitutes a sleeping unit and whether a sleeping unit can have multiple rooms. And where multiple rooms exist, where are the separations required. The exceptions are necessary to clarify the intention of Section 420.2.

---

**Individual Consideration Agenda*****Public Comment 1:***

**Proponent : William Hall, Portland Cement Association, representing Portland Cement Association (jhall@cement.org) requests Disapprove.**

**Commenter's Reason:** Fire separation is still a necessary component for dwelling units. We don't know what goes on behind closed doors. In the example of dormitory suite sleeping rooms, as a assistant state fire marshal, I have inspected many rooms where smoking occurs and a red solo cup was used to cover the smoke detector within the room. In addition, candles, other open flames, hot plates, microwave with burning popcorn, fireworks, etc. continue to keep the occupancies at elevated risks. Fire separation between any sleeping units should remain in the code for safety of the occupants.

***Public Comment 2:***

**Proponent : Steven McDaniel, representing New York State Building Officials Conference requests Disapprove.**

**Commenter's Reason:** Although I agree with the intent of what the proponent is doing with this code change, there are unintended consequences. The term "suites" is not defined except with regards to Care facilities. The term "suites" used in this proposal is not limited to Care facilities.

Exception number 1 is already permitted by the code, so there is no need for the exception.

Exception number 2 as worded would allow for Dormitory facilities to be constructed with no separations between any of the "Dorm Rooms" just because they are constructed as suites.

This code change does more damage than it does any good. It needs to be Disapproved and more work is needed for the next code cycle.

***Public Comment 3:***

**Proponent : Maureen Traxler, representing Seattle Dept of Planning & Development (maureen.traxler@seattle.gov) requests Disapprove.**

**Commenter's Reason:** This code change is unnecessary. Section 420.2 doesn't require fire partitions within a dwelling or sleeping unit. It only requires them between dwelling units, between sleeping units, and to separate dwelling and sleeping units from other occupancies. The proponent is concerned about suites and group homes, but the proposed exceptions don't address those concerns. The exceptions both apply to "sleeping units" which are defined terms, and which are not required to have internal separations by 420.2. It might be helpful to explain in the Code Commentary how this section applies to various configurations of housing, but this code proposal merely adds confusion.

The Code Development Committee said "This is aimed at clarifying what constitutes

a sleeping unit and whether a sleeping unit can have multiple rooms." That's not the purpose of Section 420.2; it's the purpose of the definition. Much unclarity about suites will be addressed by approval of proposal G9-15. It clarifies that a sleeping unit may accommodate more than one person and may have more than one room. If G9-15 is approved, the residences shown in both the sketches submitted with this proposal would clearly be considered sleeping rooms.

---

**G118-15**

# G119-15

420.2, 420.3

## **Proposed Change as Submitted**

**Proponent :** Carl Baldassarra, P.E., FSFPA, P.E., FSFPE, Chair, Code Technology Committee, representing Code Technology Committee (CTC@iccsafe.org)

## **2015 International Building Code**

**Revise as follows:**

### **SECTION 420 GROUPS I-1, R-1, R-2, R-3 AND R-4**

**420.1 General.** Occupancies in Groups I-1, R-1, R-2, R-3 and R-4 shall comply with the provisions of Sections 420.1 through 420.6 and other applicable provisions of this code.

**420.2 Separation walls.** Walls separating *dwelling units* in the same building, walls separating *sleeping units* in the same building and walls separating *dwelling* or *sleeping units* from other occupancies contiguous to them in the same building shall be constructed as *fire partitions* in accordance with Section 708.

**Exception:** In Group R-3 and Group R-4 facilities, walls within the dwelling unit or sleeping unit are not required to be constructed as fire partitions.

**420.3 Horizontal separation.** Floor assemblies separating *dwelling units* in the same buildings, floor assemblies separating *sleeping units* in the same building and floor assemblies separating *dwelling* or *sleeping units* from other occupancies contiguous to them in the same building shall be constructed as *horizontal assemblies* in accordance with Section 711.

**Exception:** In Group R-3 and R-4 facilities, floor assemblies within the dwelling or sleeping units are not required to be constructed as horizontal assemblies.

**Reason:** There are two concerns related to separation – 1) suites within hotels, dormitories, and assisted living where a sleeping rooms may share a bathroom, or sleeping rooms may have associated living space, and 2) group homes that operate as a single family unit. There are separate proposals to deal with each. It is the intent for these proposals to work together. This proposal is for the Group R-3 and R-4.

Group R-4 group homes operate as a single family home. If these facilities are considered dwelling units or sleeping units is not consistently interpreted. Separation requirements would require bedrooms to be separated from each other and the corridor. Doors would have to be rated and have closers. This is not appropriate for this type of facility.

There have been a series of lawsuits against jurisdictions across the United States regarding enforcement of requirements for group homes that exceed the requirements for single family homes. This is being interpreted as a violation of the Fair Housing Act. The CTC committee reviewed the requirements for group homes in the codes to see where there were differences and if these differences were justified due to the level of care provided for the residents. In some limited

situations, where there was a question for Group R-4 group homes, the same issue existing for Group R-3 congregate residences. For consistency in the code, these need to be considered together rather than separately. Therefore, this proposal is for both Group R-4 and Group R-3 congregate residences (both with 16 or fewer residents per Sections 310.5 and 310.6.)

This is part of a group of proposals to address this style of design and group homes within single family residences. Changes are proposed for the definition for sleeping units, the Group classifications in Section 310.4 and 310.5, separation requirements in Section 420, and coordination with accessibility requirements in Section 1107. Proposals will be put forward as part of Group B for fire and smoke alarm systems. The proposals could work separately.

The ICC Code Technology Committee (CTC) has just completed its 10th year. The ICC Board has decided to sunset the CTC. The sunset plan includes re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). The two remaining CTC Areas of Study are Care Facilities and Elevator Lobbies/WTC Elevator issues. This proposal falls under the Care Facilities Area of Study. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website at: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>.

This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

**Cost Impact:** Will not increase the cost of construction  
It is the committee's understanding that current language is not clear for where separations are required. In some cases this would be a reduction in separation requirements, and therefore a decrease in cost.

G119-15 : 420.2 -  
BALDASSARRA4271

---

## **Public Hearing Results**

**Committee Action:**

**Approved as Modified**

**Modification:**

**420.2 Separation walls.** Walls separating *dwelling units* in the same building, walls separating *sleeping units* in the same building and walls separating *dwelling* or *sleeping units* from other occupancies contiguous to them in the same building shall be constructed as *fire partitions* in accordance with Section 708.

**Exception:** In Group R-3 and Group R-4 facilities, walls within the dwelling unit or ~~between~~ sleeping units are not

required to be constructed as fire partitions.

**420.3 Horizontal separation.** Floor assemblies separating *dwelling units* in the same buildings, floor assemblies separating *sleeping units* in the same building and floor assemblies separating *dwelling* or *sleeping units* from other occupancies contiguous to them in the same building shall be constructed as *horizontal assemblies* in accordance with Section 711.

**Exception:** In Group R-3 and R-4 facilities, floor assemblies within the dwelling or ~~between~~ sleeping units are not required to be constructed as horizontal assemblies.

**Committee Reason:** The proposal clarifies that within a dwelling unit or within a sleeping unit, separations are unnecessary. These are the size of a dwelling unit and if the separations were imposed, it would impose rated doors within a dwelling unit. The hazards within such units is low. The modification was approved to reinforce that the separations are around the units and not within a unit.

**Assembly Action :**

**None**

---

### **Individual Consideration Agenda**

#### *Public Comment 1:*

**Proponent : William Hall, Portland Cement Association, representing Portland Cement Association (jhall@cement.org) requests Disapprove.**

**Commenter's Reason:** The proposed change creates confusion because section 708 already does not apply to R-4 occupancies. Safety in R-4 occupancies where 24 hour supervision is required is superior to that of R-3. Therefore separate criteria for the two occupancies should be maintained.

#### *Public Comment 2:*

**Proponent : Maureen Traxler, Seattle Dept of Planning & Development, representing Seattle Dept of Planning & Development (maureen.traxler@seattle.gov) requests Disapprove.**

**Commenter's Reason:** This code change, like G118-15, is unnecessary. Sections 420.2 and 420.3 don't require separations within a dwelling or sleeping unit. They only require them between dwelling units, between sleeping units, and to separate dwelling and sleeping units from other occupancies. By stating that separation isn't required in Group R-3 and R-4, the exceptions raise questions about whether separations are required in other occupancies. The proponent is concerned about suites and group homes, but the proposed exception doesn't address those concerns. It might be helpful to explain in the Code Commentary how this section applies to various configurations of housing, but this code proposal merely adds confusion.



# G121-15

## 420.7 (New), 420.7.1 (New), 420.7.2 (New)

### Proposed Change as Submitted

**Proponent :** Adolf Zubia, representing IAFC Fire & Life Safety Section

## 2015 International Building Code

**Add new text as follows:**

**420.7 Dormitory cooking facilities.** Domestic cooking appliances for use by residents of Group R-2 college dormitories shall be in accordance with Sections 420.7.1 and 420.7.2.

**420.7.1 Cooking appliances.** Where located in Group R-2 college dormitories, domestic cooking appliances for use by residents shall be in compliance with all of the following:

1. The types of domestic cooking appliances shall be limited to ovens, cooktops, ranges, warmers, coffee makers and microwaves.
2. Domestic cooking appliances shall be limited to approved locations.
3. Cooktops and ranges shall be protected in accordance with Section 904.13.
4. Cooktops and ranges shall be provided with a domestic cooking hood installed and constructed in accordance with Section 505 of the *international Mechanical Code*.

**420.7.2 Cooking appliances in sleeping rooms.** Cooktops, ranges and ovens shall not be installed or used in sleeping rooms.

**Reason:** This proposal is submitted by Fire and Life Safety Section of the International Association of Fire Chiefs.

This proposal accomplishes the following:

1. There currently are no requirements in the IBC that regulate domestic cooking appliances for use by residents in Group R-2 college dormitories. This proposal includes basic requirements for the code official to follow in approving such installations.

2. Proposed Sections 420.7 and 420.7.1 include requirements that permit domestic cooking appliances in both common areas and sleeping rooms in college dormitories. It does not cover resident dwelling units in college campuses that are not classified as dormitories.

3. Section 420.7.1 covers domestic cooking appliances in common areas in college dormitories. The cooking appliances allowed are the same as those allowed in Section 407.2.6, Item 4 for Group I-2, Condition 1 occupancies.

4. Section 420.7.2 prohibits ovens, cooktops and ranges from being used in sleeping rooms. This reflects that fact that cooktops and ranges are the leading causes of fires in residential settings. For details see:

[http://www.iafc.org/files/1FIREPREV/flss\\_ResidentialRangeTopSafetyReport.pdf](http://www.iafc.org/files/1FIREPREV/flss_ResidentialRangeTopSafetyReport.pdf). This section does allow the use of other cooking appliances, such as microwaves and coffee makers, in sleeping rooms. However individual colleges may have more restrictive rules that prohibit some of these appliances from being used in their dormitories.

IFC/IBC Section 914.13 and 904.13.1 will be revised in the Group B code change cycle. The intent is to provide the same protection for domestic cooking appliances in R-2 college dormitories as currently provided in Group I-2, Condition 1 facilities. In essence a UL 300A fire-extinguishing system is required when a cooktop or range is provided. An automatic fire-extinguishing system is not required when only ovens, ranges, warmers, coffee makers or microwaves are provided. the revisions in Group B will be:

**[F] 904.13 Domestic cooking systems in Group I-2 Condition 1.** Cooktops and ranges installed in the following occupancies shall be protected in accordance with Sections 904.13.1 through 904.13.2:

1. In Group I-2 Condition 1, occupancies where domestic cooking facilities are installed in accordance with Section 407.2.6 of the International Building Code,

2. In Group R-2 college dormitories where domestic cooking facilities are installed in accordance with Section 420.7. the domestic cooking hood provided over the cooktop or range shall be equipped with an automatic fire extinguishing system of a type recognized for protection of domestic cooking equipment. Preengineered automatic extinguishing systems shall be tested in accordance with UL 300A and listed and labeled for the intended application. The system shall be facilities are installed in accordance with this code, its listing and the manufacturer's instructions.

**[F] 904.13.1 Manual operation and interconnection Automatic fire-extinguishing system.** Manual actuation and system interconnection shall be in accordance with Section 904.12.1 and 904.12.2, respectively. The domestic cooking hood provided over the cooktop or range shall be equipped with an approved automatic fire-extinguishing system complying with the following:

1. The automatic fire-extinguishing system shall be of a type recognized for protection of domestic cooking equipment. Preengineered automatic fire-extinguishing systems shall be listed and labeled in accordance with UL 300A and installed in accordance with the manufacturer's instructions.

2. Manual actuation of the fire-extinguishing system shall be provided in accordance with Section 904.12.1.

3. Interconnection of the fuel and electric power supply shall be in accordance with Section 904.12.2.

**Cost Impact:** Will increase the cost of construction

This code change has the potential to increase the cost of construction due to the additional protection.

G121-15 : 420.7 (New)-  
ZUBIA4622

---

## **Public Hearing Results**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The issue of cooking facilities in dormitories needs to be addressed. It occurs and the code doesn't clearly address. The provision is modeled after the provisions allowed for the I-2 occupancy. A related change is planned for the IFC during the cycle next year. The committee raised the concern that if these occupancies are used during the summer as an R-1 whether accessibility provisions may come into play.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

**Public Comment 1:**

**Proponent : C Ray Allshouse, City of Shoreline, WA, representing**

## **Washington Association of Building Officials Technical Code Development Committee (rallshouse@shorelinewa.gov) requests Disapprove.**

**Commenter's Reason:** The proposed added code language is essentially unenforceable given the prescribed building permit process requirements provided in Chapter 1. Unless built-in, the named equipment would not be in place at a typical building final inspection. Simply put, an occurrence that can be fully resolved merely by hand unplugging and removal of a portable appliance has no place in the building code. Furthermore, built-in appliances are subject to and covered by mechanical and electrical code provisions. This proposal would be better suited for inclusion in the IFC and/or the IMC.

### *Public Comment 2:*

## **Proponent : Wayne Morris, Association of Home Appliance Manufacturers, representing Association of Home Appliance Manufacturers requests Disapprove.**

**Commenter's Reason:** Proposal G 121-15 (page 477 of the monograph) pertains to college dormitories where ranges and cooktops may be found in the living facilities. The Association of Home Appliance Manufacturers (AHAM) would like to comment on Code Proposal G 121-15 and the change suggested to Section 904.13 and we would like to present the following information.

The proposal G 121-15 represents a change to the use of cooking appliances in Dormitory Cooking Facilities. Currently the International Building Code requires that the cooking area over a standard cooktop or range should be provided with an automatic fire extinguishing system to prevent unattended cooking fires. **This proposal would require that all installations comply with 904.13. However, a separate proposal has been submitted to change 904.13 which would create a significant challenge. We have strong objections to the changes to 904.13 that have been proposed in another section and which would require a maximum temperature on the heating element of the range or cooktop. For the proposal G121-15, we have questions on the provision of the interconnection of the hood-mounted extinguishing system with the fuel or electric supply. We suggest that this provision be further modified or additional information be supplied.**

It is quite possible that at the time the proposal was first developed, the maker of the proposal was unaware of major changes taking place in the appliance safety standards. The appliance industry, in cooperation with other stakeholders, has already proposed and gained the acceptance of new cooking safety requirements in the applicable US voluntary safety standard. The cooking-related proposals included in the 2015 IBC proposal are unnecessary, duplicative, design restrictive, and ill-advised. They should be withdrawn.

AHAM is a strong supporter of the consensus standards process. We participate in over 50 safety standards for our industry. We help to develop standards committees, help to populate them, and help to support full participation by all stakeholders. In the case of safety of cooking appliances, the consensus process has considered and is still working on product safety standards.

The UL 858 standard for household electric ranges and cooktops in the US recently released a new test requirement for coil cooktops to reduce the risk of fires from unattended cooking. The test involves running the burner in worst-case scenarios with cooking oil in a pan, and the range must prevent the oil from igniting. This requirement will be in place on apply to all ranges and cooktops with coil heating elements within the next few years. A similar cooking safety test procedure is currently under review for inclusion in the Canadian Electric Range Standard, CSA 22.2 No. 61. Similar testing requirements are being developed for other cooking

technologies, such as radiant and gas cooktops and ranges.

There are a number of reasons why this proposal would cause severe harm not only to the cooking appliance industry, but also to consumers through a very design-specific requirement.<sup>1</sup>

1. One of the provisions of this proposal, G121-15 is the change to 904.13.1 to require "Interconnection of the fuel and electric power supply shall be in accordance with Section 904.12.2." While on the outset, this may seem to be a very logical requirement, it must be considered very carefully, particularly with gas ranges. To immediately discontinue the gas fuel supply and then re-connect the range later, provisions need to be made to ensure that the range or cooktop has valves designed not to permit a free-flow of gas fuel. We suggest that this needs further study.
2. This proposal refers to Section 904.13, has been proposed to change to require a maximum temperature on the cooking element of 350 deg C. That proposal is very design specific. The proposal seeks to restrict the temperature of the burner and not the pan or vessel that is used to cook. All research to date notes that the issue at question is the temperature in the pan/vessel in which food materials are placed. Thus, even though the issue is the temperature in the pan or vessel, this requirement would restrict the actual burner. There are no test methods, descriptions of how the test would be conducted and no understanding of how a product would be evaluated.
3. This proposal to 904.13 seems to be written without fully understanding the information on or the technologies in development to prevent unattended cooking fires.
4. AHAM and its members are very aware of the tragic situations with unattended cooking fires. For many years, AHAM, standards developers, staff at the U.S. Consumer Product Safety Commission (CPSC), NFPA, and other stakeholders have been meeting to develop effective solutions to the issue of unattended cooking fires. Considerable research has been done, much of which has noted the importance of providing a solution that would reduce cooking fires but allow a full range of cooking to the consumer.
5. In October 2014, AHAM made a proposal to UL Standard 858 that would, for the first, time create a test in the standard for coil-element cooktops to simulate an unattended cooking situation and require that cooking oil not ignite. This will eventually be extended to glass-ceramic and eventually gas cooktops. However, even the concept feasibility of such a pan temperature control mechanism has only been demonstrated at this time for coil-element ranges. Proposal G 121-15 and the accompanying 904.13 would only allow purchasing people to choose to install coil-element ranges.
6. Nothing in this proposal mentions the need for such a solution or device to be safety certified. We think this is a gross error in the standard and which could leave consumers, college dormitory administrators, and housing authorities at great risk.
7. One of the problems with this proposal for adding a maximum temperature to 904.13 is that it is not restricted to just electric cooking appliances. Thus, if this were applied to a gas range, and the fire extinguishing system is activated, it could extinguish the fire but leave the gas supply continuing to supply raw natural gas. No mention is made of how to re-start the range. If a gas range did have the fuel supply interrupted, but was suddenly re-connected to a gas supply without completely resetting the range controls, raw natural gas could escape. We do not believe the Committee intended this to occur.
8. This proposal is very design restrictive for the International Building Code. We believe such a requirement should be in the product safety standard. It is one thing to require the accompaniment of an over-the-range fire protection or fire extinguishing system. This is certainly within the scope of the requirements of the ICC or IBC. However, dictating specific design or performance parameters for a piece of individual equipment without knowing all the other requirements is inappropriate for the ICC or IBC.
9. Repeated references to 'domestic' appliances appear as though it would encompass household appliances. While compliance with any of these new

requirements would only be required of those wishing to sell into the College Dormitory market, we see a substantial concern that additional sources of regulation could be broadened to many other product market categories.

10. For these reasons, we believe this proposal needs further consideration and should be modified accordingly.

It is difficult for AHAM to give advice to the General Building Code Committee on fire prevention. However, it would seem that without the proposed changes the International Building Code contains adequate coverage for college dormitory facilities with the requirement of fire suppression systems.

It is also difficult for AHAM to comment on the Cost Impact statement accompanying the code change. First, we do not normally consider cost when reviewing a safety standards change. However, since ICC and IBC do consider this, we would ask that consideration be given to the impact of a timer control addition and the impact of a range that has a temperature limit to the burners.

Wayne Morris

Vice President, Technical Operations & Standards

Association of Home Appliance Manufacturers (AHAM)

**Bibliography:** The Association of Home Appliance Manufacturers (AHAM) represents manufacturers of major, portable and floor care home appliances, and suppliers to the industry. AHAM's membership includes over 150 companies throughout the world. In the U.S., AHAM members employ tens of thousands of people and produce more than 95% of the household appliances shipped for sale. The factory shipment value of these products is more than \$30 billion annually. The home appliance industry, through its products and innovation, is essential to U.S. consumer lifestyle, health, safety and convenience. Through its technology, employees and productivity, the industry contributes significantly to U.S. jobs and economic security. Home appliances also are a success story in terms of energy efficiency, safety, and environmental protection. New appliances often represent the most effective choice a consumer can make to reduce home energy use and costs.

AHAM is also a standards development organization and has authored numerous appliance performance testing standards used by manufacturers, consumer organizations and governmental bodies to rate and compare appliances. In partnership with the CSA Group, and UL Environment, AHAM developed the first sustainability standards for home appliances. AHAM's consumer safety education program has educated millions of consumers on ways to properly and safely use appliances such as portable heaters, clothes dryers, and cooking products. AHAM participates in the development of over 60 product safety standards and has authored numerous improvements to these standards.

### *Public Comment 3:*

**Proponent : Region VII, representing ICC Region VII (admin@iccregionvii.org) requests Disapprove.**

**Commenter's Reason:** Section 420.7.1 Item # 2 is redundant and item # 3 is requiring additional suppression, section 904.13 does not required suppression on a domestic appliance used in a domestic situation in an already sprinklered structure.

# G123-15

## 420.8 (New), 420.8.1 (New), 420.9 (New) Proposed Change as Submitted

**Proponent :** Carl Baldassarra, P.E., FSFPA, P.E., FSFPE, Chair, Code Technology Committee, representing Code Technologies Committee (CTC@iccsafe.org)

### 2015 International Building Code

**Add new text as follows:**

**420.8 Group I-1 cooking facilities.** In Group I-1 occupancies rooms or spaces that contain a cooking facilities with domestic cooking appliances shall be in accordance with all the following criteria:

1. In Group I-1 Condition 1 occupancies, the number of care recipients served by one cooking facility shall not be greater than 30.
2. In Group I-1 Condition 2 occupancies, the number of care recipients served by one cooking facility and within the same smoke compartment shall not be greater than 30.
3. The types of domestic cooking appliances permitted shall be limited to ovens, cooktops, ranges, warmers and microwaves.
4. The space containing the domestic cooking facilities shall be arranged so as not to obstruct access to the required exit.
5. Domestic cooking hoods installed and constructed in accordance with Section 505 of the International Mechanical Code shall be provided over cooktops or ranges.
6. Cooktops and ranges shall be protected in accordance with Section 904.13.
7. A shut-off for the fuel and electrical supply to the cooking equipment shall be provided in a location that is accessible only to staff.
8. A timer shall be provided that automatically deactivates the cooking appliances within a period of not more than 120 minutes.
9. A portable fire extinguisher shall be provided. Installation shall be in accordance with Section 906 and the extinguisher shall be located within a 30-foot (9144 mm) distance of travel from each domestic cooking appliance.

**420.8.1 Cooking facilities open to the corridor.** Cooking facilities located in a room or space open to a corridor, aisle or common space shall comply with Section 420.8.

**420.9 Group R cooking facilities.** In Group R occupancies, cooking appliances used for domestic cooking operations shall be in accordance with Section 917.2 of the *International Mechanical Code*.

**Reason:** The intent of the two proposals for a new Section 420.7 and 420.8 is to allow the same 'home style' environment for Group I-1 that is permitted to Sections 407.2.5 and 407.2.6 for Group I-2 nursing homes.

Section 420.8 and 420.8.1: This additional protection feature requirement clarifies

that kitchens in typical memory care neighborhood plans or assisted living neighborhood plans are allowed in contiguous spaces to rooms used for sleeping. This proposal then implements the additional protection features required in similar applications from Group I-2 as was approved for the 2015 IBC is Section 407. Section 420.9: While Group R (other than Group R-4) outside the scope of the CTC Care study group, since Section 420 includes provisions for Group I-1 and R, it was felt that something had to be said regarding Group R cooking facilities following the provisions of Group I-1 cooking facilities. The intent of Section 420.9 is to allow for hotel rooms, assisted living suites, dorm suites, and small congregate residences to be allowed to use the provisions in the IMC for domestic cooking appliances. If the hotel or dormitory has a central restaurant or cafeteria, this section would not be applicable because it would be commercial cooking. A correlative change to IFC Section 904.13 for installation of the cooking systems will be provided in Group B. Basically the Group I-1 will follow the same limits as the Group I-2, Condition 2. This proposal is coordinated with a proposal coming from FCAC and BCAC for Group I-2, Condition 1 cooking facilities.

The ICC Code Technology Committee (CTC) has just completed its 10th year. The ICC Board has decided to sunset the CTC. The sunset plan includes re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). The two remaining CTC Areas of Study are Care Facilities and Elevator Lobbies/WTC Elevator issues. This proposal falls under the Care Facilities Area of Study. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website at: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>.

**Cost Impact:** Will increase the cost of construction

This is an increase in cost for Group I-1 facilities that use this option, however, it will allow for greater freedom in design. Alternatively, requiring a commercial appliance and hood in place of the domestic appliance could be more costly. This should not be a change for domestic cooking appliances in Group R.

G123-15 : 420.8 (New)-  
BALDASSARRA4912

---

## **Public Hearing Results**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** During the development of the 2015 IBC, such cooking facilities were allowed for I-2 facilities. I-1 with a concept of being more home-like should also be allowed the same options based on the same safeguards.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

**Public Comment 1:**

**Proponent : Wayne Morris, Association of Home Appliance Manufacturers, representing Association of Home Appliance Manufacturers (wmorris@aham.org) requests Disapprove.**

**Commenter's Reason:** The Association of Home Appliance Manufacturers (AHAM) is opposed to the Code Proposal G 123-15 in its present form together with the change suggested to Section 904.13 and we would like to present the following information. Proposal G 123.15 (page 479 of the monograph) pertains to Group I-1 facilities, such

as group home settings. **The proposal not only refers back to Section 904.13 but also would require a timer that would automatically shut off power within 120 minutes of initiation of cooking. The proposal also refers to Section 904.13 which has been proposed to be changed to require a maximum burner temperature.**

The Association of Home Appliance Manufacturers (AHAM) represents manufacturers of major, portable and floor care home appliances, and suppliers to the industry. AHAM's membership includes over 150 companies throughout the world. In the U.S., AHAM members employ tens of thousands of people and produce more than 95% of the household appliances shipped for sale. The factory shipment value of these products is more than \$30 billion annually. The home appliance industry, through its products and innovation, is essential to U.S. consumer lifestyle, health, safety and convenience. Through its technology, employees and productivity, the industry contributes significantly to U.S. jobs and economic security. Home appliances also are a success story in terms of energy efficiency, safety, and environmental protection. New appliances often represent the most effective choice a consumer can make to reduce home energy use and costs.

AHAM is also a standards development organization and has authored numerous appliance performance testing standards used by manufacturers, consumer organizations and governmental bodies to rate and compare appliances. In partnership with the CSA Group, and UL Environment, AHAM developed the first sustainability standards for home appliances. AHAM's consumer safety education program has educated millions of consumers on ways to properly and safely use appliances such as portable heaters, clothes dryers, and cooking products. AHAM participates in the development of over 60 product safety standards and has authored numerous improvements to these standards.

The proposal G 123-15 represents a change to the use of cooking appliances in I-1 group home type cooking facilities. Currently the International Building Code requires that the cooking area over a standard cooktop or range should be provided with an automatic fire extinguishing system to prevent unattended cooking fires. The proposal not only refers back to Section 904.13 but also would require a timer that would automatically shut off power within 120 minutes of initiation of cooking.

It is quite possible that at the time the proposal was first developed, the maker of the proposal was unaware of major changes taking place in the appliance safety standards. The appliance industry, in cooperation with other stakeholders, has already proposed and gained the acceptance of new cooking safety requirements in the applicable US voluntary safety standard. The cooking-related proposals included in the 2015 IBC proposal are unnecessary, duplicative, design restrictive, and ill-advised. They should be withdrawn.

AHAM is a strong supporter of the consensus standards process. We participate in over 60 safety standards for our industry. We help to develop standards committees, help to populate them, and help to support full participation by all stakeholders. In the case of safety of cooking appliances, the consensus process has considered and is still working on product safety standards. We request that the ICC IBC Committee allow the standards to exist in the product safety standards and note only that the Code requires products that comply with the applicable safety standards and are safety certified for that installation.

The UL 858 standard for household ranges in the US recently released a new test requirement for coil cooktops to reduce the risk of fires from unattended cooking. The test involves running the burner in worst-case scenarios with cooking oil in a pan, and the range must prevent the oil from igniting. This requirement will be in place on apply to all ranges and cooktops with coil heating elements within the next few years. A similar cooking safety test procedure is currently under review for inclusion in the Canadian Electric Range Standard, CSA 22.2 No. 61. Similar testing requirements are being developed for other cooking technologies, such as radiant and gas cooktops and ranges.

There are a number of reasons why this proposal would cause severe harm not only to the cooking appliance industry, but also to consumers through a very design-specific requirement.

1. The proposal in G123-15 for a timer to shut off power after 120 minutes is very design restrictive. It also has no details nor does it explain whether this is to be part of the range or part of the power/fuel system to the range. Such a requirement could be quite risky in a gas cooktop. To shut the fuel source off is one thing, but to then re-engage the fuel without proper controls could increase the risk. We ask that the Committee to remove this requirement #8, "A timer shall be provided that automatically deactivates the cooking appliances within a period of not more than 120 minutes." There are no test methods, descriptions of how the test would be conducted and no understanding of how a product would be evaluated.
2. The proposal 420.8 No. 8 requires the use of some form of a timer on the power source. This is not currently part of the design of a residential cooktop or range. While this could be added to the building or installation design, this should be carefully considered.
  1. This would restrict the use to electric ranges and cooktops only. It is difficult to imagine such a timer on a gas-fueled range, since not only would the controls be removed at 120 minutes but there is no provision for safe re-start of the gas range.
  2. Safe re-start is a major concerns of the range and cooktop manufacturers. If the power source is severed at the 120 minute mark, and power is later restored, there is a chance that raw gas would continue to flow if the burner controls are left in the "on" position.
  3. In addition, it is unclear what is the reason behind the 120 minute requirement. Considering that many pieces of research note that it is possible to have a cooking fire in less than 5 minutes, we see no rationale for the 120 minute proposal.

3. The proposal states that "A timer shall be provided that automatically deactivates the cooking appliances within a period of not more than 120 minutes." But, some baking functions in ovens take more than 120 minutes and the proposal does not distinguish between ovens and cooktop surfaces. It just says "...cooking appliances..." Many operation on the surface cooking, such as canning, require more time than 120 minutes. Several baking functions, such as slow cooking meats, require more than 120 minutes. This proposal for automatic shut-off does not have any details about testing, how the device is to be applied, if it is on the product, how the deactivation will be accomplished and more important how it will be re-activated. There are no requirements in the applicable US safety standards for such a provision. This leaves the accomplishment of this to anyone's guess. This proposal should be made to the UL 858 and ANSI Z21.1 safety standards.

4. Regarding the reference to 904.13 and the new proposal to that section on a maximum temperature limit on the burner, we believe it is inappropriate for a consensus standards development committee to develop a standards proposal that has only one technical solution and is written to promote one particular product on the market. We doubt the Committee fully understood this at the time. While this may seem to be a simple design requirement, it seems to be an attempt to promote one product and to require it in the Code.

5. This proposal seems to be written *without* fully understanding the information on or the technologies in development to prevent unattended cooking fires.

6. AHAM and its members are very aware of the tragic situations with unattended cooking fires. For many years, AHAM, standards developers, staff at the U.S. Consumer Product Safety Commission (CPSC), NFPA, and other stakeholders have been meeting to develop effective solutions to the issue of unattended cooking fires. Considerable research has been done, much of which has noted the importance of providing a solution that would reduce cooking fires but allow a full range of cooking to the consumer.

7. In October 2014, AHAM made a proposal to UL Standard 858 that would, for the first, time create a test in the standard for coil-element cooktops to simulate an unattended cooking situation and require that cooking oil not ignite. This will eventually be extended to glass-ceramic and eventually gas cooktops. However, even the concept feasibility of such a pan temperature control mechanism has only been demonstrated at this time for coil-element ranges. Proposal G 123-15 and the

accompanying 904.13 would only allow purchasing people to choose to install coil-element ranges.

8. Nothing in the proposal to 904.13 for a maximum heating element temperature mentions the need for such a solution or device to be safety certified. We think this is a gross error in the standard and which could leave consumers, I-1 home administrators, and housing authorities at great risk.

9. This proposal is very design restrictive for the International Building Code. We believe such a requirement should be in the product safety standard. It is one thing to require the accompaniment of a over-the-range fire protection or fire extinguishing system. This is certainly within the scope of the requirements of the ICC or IBC. However, dictating specific design or performance parameters for a piece of individual equipment without knowing all the other requirements is inappropriate for the ICC or IBC.

10. Repeated references to 'domestic' appliances appears as though it would encompass household appliances. While compliance with any of these new requirements would only be required of those wishing to sell into the I-1 group home market, we see a substantial concern that additional sources of regulation could be broadened to many other product market categories. The proposed additions to the IBC, IMC and IFC could potentially encroach on regulations on household appliances.

It is difficult for AHAM to give advice to the General Building Code Committee on fire prevention. However, it would seem that without the proposed changes, the International Building Code contains adequate coverage for I-1 group home facilities with the requirement of fire suppression systems.

It is also difficult for AHAM to comment on the Cost Impact statement accompanying the code change. First, we do not normally consider cost when reviewing a safety standards change. However, since ICC and IBC do consider this, we would ask that consideration be given to the impact of a timer control addition and the impact of a range that has a temperature limit to the burners. Depending on how this is configured, this could have a cost impact on Group R type domestic residential cooking appliances. Today, these appliances are not equipped with this type of shut-off timer mechanism and are not equipped with maximum temperature controls on burners.

Wayne Morris

Vice President, Technical Operations and Standards

Association of Home Appliance Manufacturers

Washington, DC

**Bibliography:** UL Standard 858 Safety of Electric Ranges

Change to standard to include Section 58, Abnormal Operation Test for Coil Element Cooktops

Addition of test to prevent ignition of cooking oil.

June 2015

---

G123-15

# G125-15

**422.6 (New), 604.2.1(IBC [F] 2702.2.1) (New)**

**Proposed Change as Submitted**

**Proponent:** John Williams, CBO, Chair, representing Adhoc Health Care Committee (AHC@iccsafe.org)

## 2015 International Building Code

**Add new text as follows:**

**422.6 Electrical systems** *In ambulatory care facilities, the essential electrical system for electrical components, equipment and systems shall be designed and constructed in accordance with the provisions of Chapter 27 and NFPA 99.*

## 2015 International Fire Code

**604.2.1(IBC [F] 2702.2.1) Ambulatory care facilities.** *Essential electrical systems for ambulatory care facilities shall be in accordance with Section 422.6 of the International Building Code.*

**Reason:** The IBC currently has no direction on whether essential electrical systems (such as emergency generator) are required at ambulatory care facilities. This proposal adds the direction to go to NFPA 99, the Healthcare Facilities Code for that assessment. NFPA 99 provides a risk based approach to determine the need for an essential electrical system, what class system is required and general design requirements for each type of system.

The ICC Ad Hoc Committee on Healthcare (AHC) has just completed its 4th year. The AHC was established by the ICC Board to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. This is a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Information on the AHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the AHC effort can be downloaded from the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>.

**Cost Impact:** Will increase the cost of construction

The code change proposal will increase the cost of construction. Adding an essential electrical system will add the cost of a generator, as well as maintenance and testing over what is required currently in the IBC/IFC. However, any medicare certified ambulatory care facilities are required by federal CMS regulations to have this system, therefore, the cost of construction will not increase. Note that not all ambulatory care facilities are medicare certified.

G125-15 : 422.6 (New)-  
WILLIAMS4166

---

## **Public Hearing Results**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The proposal provides clarity for the electrical systems installed in ambulatory care facilities. It provides consistent regulations to those applying to Group I occupancies.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : Marcelo Hirschler, representing GBH International (gbhint@aol.com) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

**407.10 Electrical systems.** In Group I-2 occupancies, the essential electrical system for electrical components, equipment and systems shall be designed and constructed in accordance with the provisions of Chapter 27 and NFPA 99. In case of conflict between the provisions of Chapter 27 and those of NFPA 99, the provisions of Chapter 27 shall apply.

**422.6 Electrical systems** In *ambulatory care facilities*, the essential electrical system for electrical components, equipment and systems shall be designed and constructed in accordance with the provisions of Chapter 27 and NFPA 99.- In case of conflict between the provisions of Chapter 27 and those of NFPA 99, the provisions of Chapter 27 shall apply.

**Commenter's Reason:** There have been a number of instances where the requirements of NFPA 99 have differed from those of the National Electrical Code (NFPA 70), which is what Chapter 27 in the IBC refers to. In particular there have been multiple debates at various hearings, for example regarding selective coordination in case of outages. The IBC needs to be clear which is the governing requirement in case of conflict (now or in future editions) and it is the IBC (which in this case, in Chapter 27, refers to the National Electrical Code), which must be the prevailing requirement.

Similar language to that in the original proposal is contained in section 407.10 of the IBC and that section is also being proposed to be modified by this comment, for consistency.

---

**G125-15**

# G127-15

427 (New), 427.1 (New)

## Proposed Change as Submitted

**Proponent :** Lee Kranz, City of Bellevue, WA

### 2015 International Building Code

**Add new text as follows:**

#### SECTION 427 MEDICAL GAS SYSTEMS

**427.1 Medical gas systems.** Medical gas systems shall comply with Section 5306 of the *International Fire Code*.

**Reason:** Provisions for medical gas installations are currently found in Section 5306 of the IFC but many of the requirements for these installations require a building permit and should also be regulated from the IBC. There are no substantive changes proposed to the language found in the IFC. Examples of similar references to other codes and standards are found in Sections 425 & 916.

**Cost Impact:** Will not increase the cost of construction  
Inserting a reference to the medical gas regulations currently found in the IFC will not change the cost of installation.

G127-15 : 427 (New)-  
KRANZ3770

---

### Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** There was reluctance to creating a whole new section to just provide a pointer to provisions in the Fire Code. There are construction related criteria in the IFC, but it was also pointed out that additional provisions are also in the IPC. There was support for moving the construction provisions found in the IFC into the IBC rather than simply a pointer.

**Assembly Action :**

**None**

---

### Individual Consideration Agenda

*Public Comment 1:*

**Proponent :** Robert Snyder, City of Bellevue, representing Washington Association of Building Officials Technical Code Development Committee (rsnyder@bellevuewa.gov) requests Approve as Modified by this Public Comment.

**Replace Proposal as Follows:**

### 2015 International Building Code

**427.1 ~~Medical gas systems~~ General.** Medical gas Storage of medical gases at health care-related facilities intended for patient care, inhalation or sedation including, but not limited to, analgesia systems for dentistry, podiatry, veterinary and similar uses shall comply with Section 5306 Sections 427.2 through 427.2.3 in addition to requirements of Chapter 53 of the *International Fire Code*.

**427.2 Interior supply location.** Storage of medical gases at health care-related facilities intended for patient care, inhalation or sedation including, but not limited to, analgesia systems for dentistry, podiatry, veterinary and similar uses shall comply with Sections 427.2 through 427.2.3 in addition to other requirements of Chapter 53 of the *International Fire Code*.

**427.2.1 One-hour exterior room.** A 1-hour exterior room shall be a room or enclosure separated from the remainder of the building by fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both, with a fire-resistance rating of not less than 1 hour. Openings between the room or enclosure and interior spaces shall be provided with self-closing smoke and draft-control assemblies having a fire protection rating of not less than 1 hour. Rooms shall have not less than one exterior wall that is provided with not less than two vents. Each vent shall be not less than 36 square inches (0.0223 m<sup>2</sup>) in area. One vent shall be within 6 inches (152 mm) of the floor and one shall be within 6 inches (152 mm) of the ceiling. Rooms shall be provided with at least one automatic sprinkler to provide container cooling in case of fire.

**427.2.2 One-hour interior room.** Where an exterior wall cannot be provided for the room a 1-hour interior room or enclosure shall be provided and separated from the remainder of the building by fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711 or both, with a fire resistance rating of not less than 1 hour. Openings between the room or enclosure and interior spaces shall be provided with self-closing smoke and draft control assemblies having a fire protection rating of not less than 1 hour. An automatic sprinkler system shall be installed within the room. The room shall be exhausted through a duct to the exterior. Supply and exhaust ducts shall be enclosed in a one-hour rated shaft enclosure from the room to the exterior. Approved mechanical ventilation shall comply with the *International Mechanical Code* and be provided with a minimum rate of one cubic foot per minute per square foot (0.00508 m<sup>3</sup>/(s.m<sup>2</sup>)) of the area of the room.

**427.2.3 Gas cabinets.** Gas cabinets shall be constructed in accordance with Section 5003.8.6 of the *International Fire Code* and shall comply with the following:

1. Constructed of not less than 0.097 inch (2.5 mm) No. 12 ga steel.
2. Provided with self-closing limited access ports or noncombustible windows to give access to equipment controls.
3. Exhausted to the exterior through dedicated exhaust duct system installed in accordance with Chapter 5 of the *International Mechanical Code*.

4. Supply and exhaust ducts shall be enclosed in a one-hour rated shaft enclosure from the cabinet to the exterior. The average velocity of ventilation at the face of access ports or windows shall be not less than 200 feet per minute (1.02 m/s) with a minimum of 150 feet per minute (0.076 m/s) at any point of the access port or window.
5. Provided with an automatic sprinkler system internal to the cabinet.

**Commenter's Reason:** Provisions for the construction of medical gas system storage facilities are currently found in Section 5306 of the International Fire Code. Since most of the medical gas construction related requirements in the IFC reference the IBC, it is logical for those requirements to be incorporated into the IBC also. Only construction related requirements, with no substantive changes, are being copied into the IBC. This proposal duplicates those requirements in the IBC by creating a new Section in Chapter 4. At the Code Development Committee Hearings, while the committee was reluctant to approve the creation of a whole new section to provide a pointer to the medical gas construction provisions in the IFC only, the committee indicated support of moving those provisions into the IBC which is what this public comment accomplishes.

---

**G127-15**

# G128-15

**427 (New), 427.1 (New), 427.2 (New), 427.3 (New), 427.4 (New)**

## **Proposed Change as Submitted**

**Proponent :** William Hall, Portland Cement Association, representing Portland Cement Association (jhall@cement.org); Jason Thompson, Masonry Alliance for Codes and Standards, representing Masonry Alliance for Codes and Standards (jthompson@ncma.org)

## **2015 International Building Code**

**Add new text as follows:**

### **SECTION 427** **HIGH RISK AREAS**

**427.1 General.** The provisions of Sections 427.2 through 427.4 shall apply to buildings or structures classified as Risk Category II, III or IV where either of the following conditions exists:

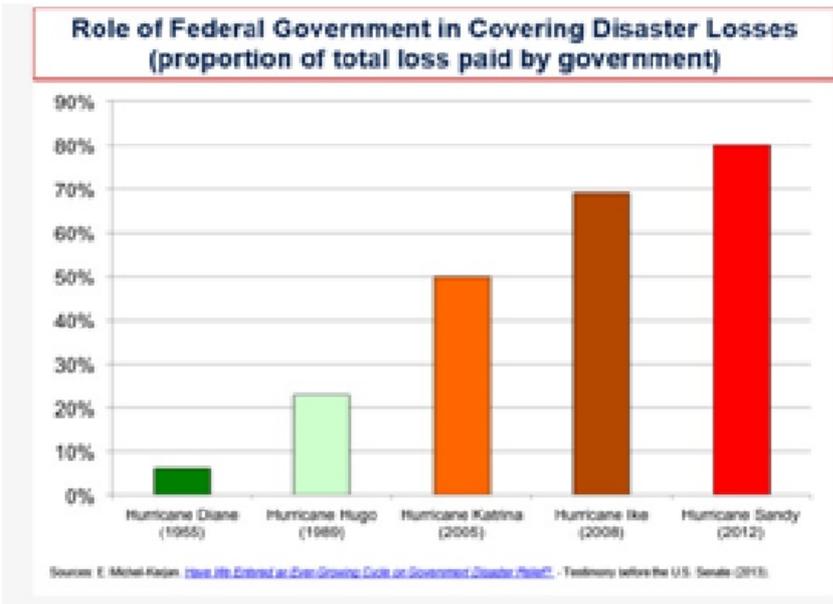
1. Located in Hurricane-Prone Regions
2. Assigned to Seismic Design Category C or greater.

**427.2 Height in feet.** The maximum height, in feet, of a building shall not exceed the limits specified in Table 504.3 for non-sprinklered (NS) buildings.

**427.3 Number of stories.** The maximum number of stories of a building shall not exceed the limits specified in Table 504.4 for non-sprinklered (NS) buildings.

**427.4 Allowable area.** The maximum allowable area of a building shall not exceed the limits specified in Table 506.2 for non-sprinklered (NS) buildings.

**Reason:** Natural disasters, in areas shown to be at high risk, continue to cost this nation billions of dollars each year in damaged and destroyed property, clean-up, lost revenue, displacement of residents, re-building efforts and more. 650,000 housing units were damaged or destroyed and 300,000 business properties in New York and New Jersey during Hurricane Sandy in 2012, while an estimated 7 million were without power. An estimated 80 Billion dollars in FEMA money will be spent solely on re-building and repair costs from just one storm. Katrina, in 2005 was more costly, with \$81 billion in construction costs and over 1500 deaths directly associated with the storm.



Studies by National Oceanic Atmospheric Administration (NOAA) show the trends for hurricanes to be on the increase through the year 2100 and the probability of seismic activity continues to increase based on studies and new maps released by the United States Geological Surveys (USGS). Low lying areas in coastal communities are at high risk of storm surge flooding. During and after these major events, damage to infrastructure and utilities is enormous. Major roadways can be destroyed or roadways impassable due to flooding and in addition the affected areas will experience large scale loss of power, loss of water, gas line ruptures and fire. Damage from fires after a high wind event, earthquake or storm surge can be devastating in both residential and commercial properties. The captions below show conflagration results from Hurricane Sandy - 2012 in both commercial and residential areas.



Emergency service resources are limited at best after a natural disaster and non-existent while a hurricane passes. Fires are left to burn until either they burn out or become accessible and become a priority. A fire within a building, with combustible construction, without an operational sprinkler system, is not likely to be controlled without passive fire containment. As recently as August 2014, the Napa Valley, CA area experienced an earthquake which caused moderate damage but still sustained 16 fires after the event.





While the safety of fire sprinklers during normal times has a very good track record, the fact is: fire sprinklers will not work without a water supply and may not work without electrical service. During seismic and flooding events, water mains and electrical services are often damaged, electric fire pumps fail to operate, diesel fire pumps and emergency generators fail to operate if flooded, water pressure levels will be significantly lower from broken lines within the system, and exterior fire exposure from buildings without protection increases the risk of fire spread.





#### Aftermath of Hurricane Sandy

Even with clear evidence that sprinkler systems cannot be a reliable suppression source in high risk areas and historical evidence that natural disasters are increasing in number and severity, the building code still provides significant trade off incentives for sprinkler systems to allow buildings to be built bigger and higher while allowing reductions in passive fire protection. This code change recognizes that active fire protection during and after a natural disaster can not be relied upon to operate exposing structures to a level of fire protection that is dramatically less than the minimum intended by the building code. To assure a minimum level of fire protection consistent with the intent of the code following disasters, this change seeks to eliminate sprinkler trade-offs for height and area increases in high risk areas.

To accurately evaluate the relative construction cost it was determined that a multi-family residential structure should be schematically designed meeting all of the requirements of the International Building Code. Once designed, the buildings were reviewed for code compliance, and cost estimates would be prepared. The study was conducted by:

Architect & Engineer: Haas Architects Engineers<sup>1</sup>

Code Official: Tim E. Knisely<sup>2</sup>

Cost Estimation : Poole Anderson Construction<sup>3</sup>

The building model chosen for the project was a 4 story multi-family residential structure encompassing approximately 25,000 gross square feet of building area per floor. The cost comparisons are based on the proposed target building assembled using a typical mix of one and two bedroom dwelling units

The following construction types and alternates were included in the evaluation:

Conventional Type V framing with Type V floor system

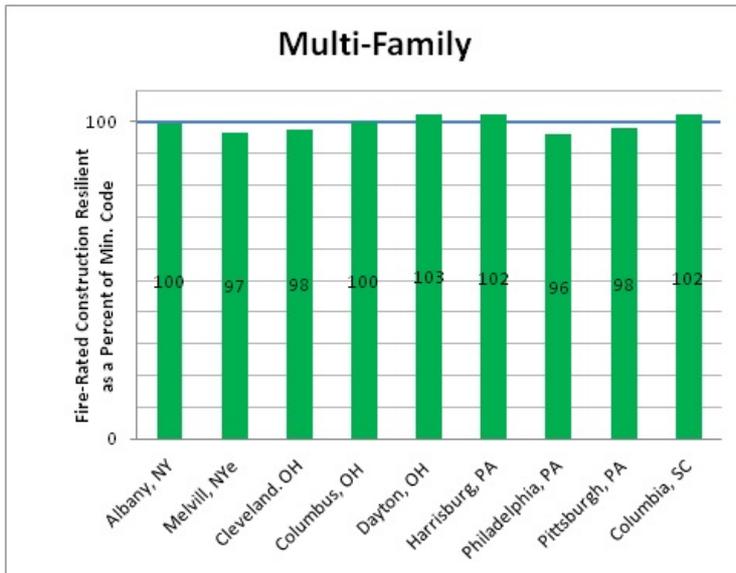
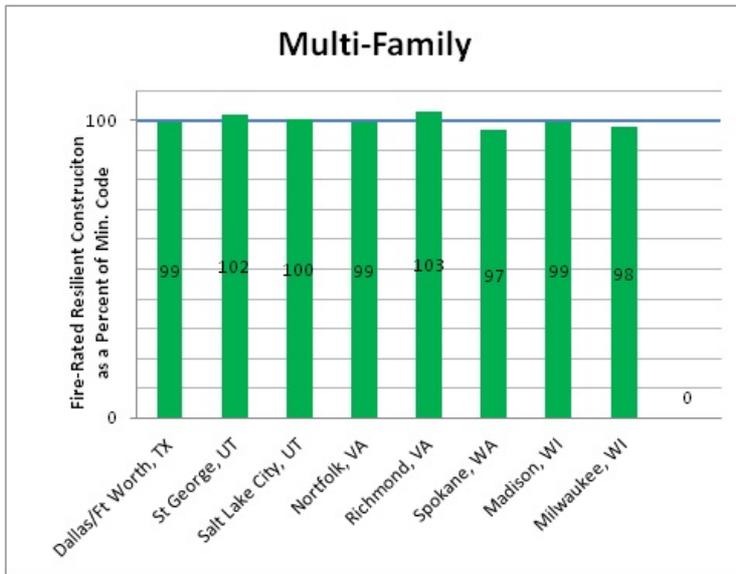
Alternate: Conventional Type VA framing with Type VA floor system

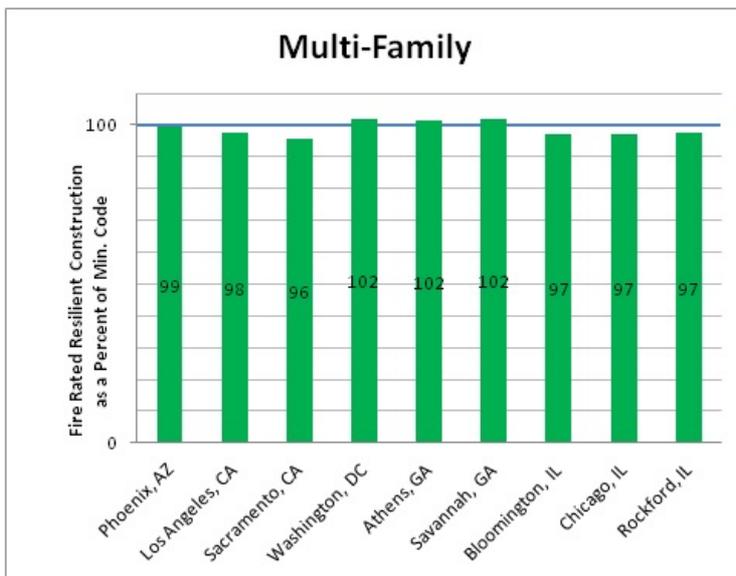
Non-combustible framing with fire-rated non-combustible floors (concrete on steel deck)

Fire-rated load bearing non-combustible construction with fire rated non-combustible floor system (block and plank)

The cost estimate for each building model included the complete fit out of each building with the exception of movable appliances and furniture. For more details on

the specific criteria visit: [www.psfscac.org](http://www.psfscac.org).





1Haas Architects Engineers is a multi-disciplinary architectural and engineering firm located in State College, Pennsylvania with a thirty year history of client centered service including commercial, single and multi-family residential, retail, and sports based projects.

2Tim E. Knisely is a senior fire and commercial housing inspector for the Centre Region Code Administration, in State College, Pennsylvania. Mr. Knisely currently holds a certification as a registered Building Code Official in the Commonwealth of Pennsylvania and holds more than eight certifications from the International Code Council. In addition, Mr. Knisely has been involved in the fire service for more than 20 years.

3Poole Anderson Construction is one of the largest building contractors in Central Pennsylvania with a 75 year history and an annual construction volume exceeding 60,000,000 dollars.

**Bibliography:** [http://www.nytimes.com/2013/09/13/nyregion/fire-ravages-jersey-shore-boardwalk-rebuilt-after-hurricane-sandy.html?\\_r=0](http://www.nytimes.com/2013/09/13/nyregion/fire-ravages-jersey-shore-boardwalk-rebuilt-after-hurricane-sandy.html?_r=0)

<http://www.cnn.com/2012/10/30/us/hurricane-sandy-color/index.html>

**Cost Impact:** Will increase the cost of construction

To evaluate the cost impact for every occupancy and use, type of construction and building configuration is excessively burdensome for any proposed code change. In an effort to satisfy the request in the code development process that construction type determined by the proponent to be influence by cost was evaluated to the most significant cost potential impacts relative to this proposal, rectangular 4-story Type V multi-family dwellings. The independent third party studies indicate that the cost differential ranges between minus 3% to plus 3% for the most significant cost impact associated with the code change proposal which typically shifted the design from Type V construction to other Types of construction.

See reasoning statement

## **Public Hearing Results**

### **Committee Action:**

**Disapproved**

**Committee Reason:** The committee acknowledged that the issue of building resilience should be addressed, but it needs a more comprehensive, global discussion by a broad range of our constituents. This proposal is not the result of any such discussion. The codes have improved over the years. Buildings built under current codes are already more resilient compared to historic codes. The structural provisions for resisting earthquake, flooding and high wind have been enhanced numerous times. The building code can't control infrastructure; such is a local decision. This proposal would eliminate the incentives to install sprinklers. The committee did not find the cost impact estimates to be realistic. Overall the committee concluded that this proposal doesn't pass muster as a reasonable approach to the issue.

### **Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : William Hall, Portland Cement Association, representing Portland Cement Association (jhall@cement.org) requests Approve as Submitted.**

**Commenter's Reason:** Most occupancies are required to be sprinkled, thus the committee's concerns about reducing sprinkler incentives are unfounded. The cost study was performed by an independent third party and the results can be verified with actual cost data provided by Dodge. The committee was not provided any comparable study to substantiate their findings that the "cost impact estimates to be realistic". Most code proposals in the ICC are implemented using the ICC consensus process and do not require vetting in other venues before being adopted. What I am suggesting is that either the committee's reasoning statement is inappropriate or they are suggesting that the ICC is not a consensus process.

**G128-15**

---

# G131-15

## 503.1.4 (New), 1004.5

### Proposed Change as Submitted

**Proponent :** Lee Kranz, City of Bellevue, WA, representing City of Bellevue, Washington

## 2015 International Building Code

### Add new text as follows:

**503.1.4 Occupied roofs.** For the purposes of Tables 504.3 and 504.4, occupancies are permitted on roofs where the occupancy is permitted on the story immediately below. The area to be used as an occupied roof shall comply with the allowable area limitations of Table 506.2 for the intended occupancy.

**Exception:** Occupied roofs are not required to comply with Tables 504.3 and 504.4 where located on buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and fire alarm notification in accordance with Section 907 is provided in the area of the occupied roof.

### Revise as follows:

**1004.5 Outdoor areas.** Yards, patios, courts, occupied roofs, and similar outdoor areas accessible to and usable by the building occupants shall be provided with means of egress as required by this chapter. The occupant load of such outdoor areas shall be assigned by the building official in accordance with the anticipated use. Where outdoor areas are to be used by persons in addition to the occupants of the building, and the path of egress travel from the outdoor areas passes through the building, means of egress requirements for the building shall be based on the sum of the occupant loads of the building plus the outdoor areas.

### Exceptions:

1. Outdoor areas used exclusively for service of the building need only have one *means of egress*.
2. Both outdoor areas associated with Group R-3 and individual dwelling units of Group R-2.

**Reason:** Occupied roofs host different occupancy groups but most often consist of Groups A and B. Means of egress, accessibility, structural design, access to plumbing fixtures and guardrails are already addressed in the code and must be provided for occupants utilizing the area of an occupied roof. Type of construction limitations based on occupancy classification are not currently addressed in the code for occupied roofs because an occupied roof is not considered to be a story, as defined in the code. If approved, this code change will clarify that occupied roofs are limited to the roof level of the highest story per Tables 504.3 and 504.4 for the applicable occupancy and must comply with the limitations of Table 506.2 for the area of the roof to be occupied even though it is not considered to be a "story". The proposed exception allows occupied roofs to be located on any story and at any height in a building protected with an automatic sprinkler system throughout and with fire alarm notification in the area of the occupied roof. The exception is appropriate since smoke will not accumulate on an occupied roof as it does inside

the building and there is an added level of protection provided by the sprinkler and fire alarm systems.

"Occupied roofs" is proposed to be added to Section 1004.5 to clarify that they shall be provided with means of egress as required by Chapter 10.

**Cost Impact:** Will increase the cost of construction

This code change will require additional cost due to a new requirement to install sprinkler protection and fire alarm notification in some cases to accommodate an occupied roof on a building that may not otherwise require these systems.

G131-15 : 503.1.4  
(New)-KРАНZ3867

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee found this proposal really confusing. They found the requirement for roof use to be related to the use of the story below totally inappropriate as the use of the roof may be totally different than those located on the top story. The reference to Section 506.2 was unclear whether the intent was addressing the roof use or the whole building. Adding 'occupied roofs' into Section 1004.5 makes sense and should be included in anything that is returned. The committee later expressed encouragement to the proponents of all the occupied roof proposals to attempt to work together to create a solution for consideration at the public comment hearings.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : Lawrence Lincoln, representing Utah Chapter of ICC (don.davies@slcgov.com) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

**503.1.4 Occupied roofs.** For the purposes of Tables 504.3 and 504.4, occupancies are permitted on roofs where the occupancy is permitted on the story immediately below. The area to be used as an occupied roof shall comply with the allowable area limitations of Table 506.2 for the intended occupancy—

**Exception:** ~~Occupied roofs are not required to comply with Tables 504.3 and 504.4 where located on buildings~~ provided the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and fire alarm notification in accordance with Section 907 is provided in the area of the occupied roof.

**Commenter's Reason:** This is the best choice of the proposed changes dealing with occupied roof areas. The new IBC Section, 503.1.4, is concise and well-written.

This section allows an additional level above what would have been allowed for this proposed occupancy for the roof area.

The uses for an occupied roof are very limited. Reviewing the occupancy classifications reveals very few uses which would ever be applied on a roof. Judging from our experience, the only uses we have seen is an extension of the dining and drinking areas from the floor below or as an assembly area, for example, as an A-3 use for family gatherings or an exercise area or a tennis court. All other uses would be impractical, e.g. businesses, education, factories, institutions, mercantile, sleeping rooms, storage, utility and "H" occupancies.

To allow any uses on the roof without regards to the limitations of I.B.C. Tables 504.3 and 504.4 would not be reasonable. For example, we have seen an A-3 occupancy was proposed on the roof of a R-2 occupancy building of type IIIB construction of five stories height. In the table, that use would be limited to the third story since the building is required to be fire-sprinklered. But to allow an A-3 occupancy # on the roof of a five story building would leap-frog the same use above the fifth level; the code proposal would limit the A-3 use to the roof of a three story R-2 occupancy.

To remove all restrictions of allowable height and stories due to fire-sprinkling is not reasonable. There would not be any trade-off when the use is A-2 or A-3 occupancy since those uses on the roof would not be on the level of exit discharge. This would require sprinkling anyway as required in I.B.C. Section 903.2.1 and 903.2.1.3. The presence of a fire-sprinkling system would already allow this use on the top level to be one floor and 20 feet higher and the new provision, 503.1.4, would allow the same use on the roof of that level.

---

**G131-15**

# G132-15

## 503.1.2.1 (New)

### Proposed Change as Submitted

**Proponent :** Victor Cuevas (victor.cuevas@lacity.org)

## 2015 International Building Code

**Add new text as follows:**

**503.1.2.1 Buildings on same property and buildings containing courts.** For the purposes of determining the required wall and opening protection and roof-covering requirements, buildings on the same property and court walls of buildings over one story in height shall be assumed to have a property line between them.

**Reason:** For the purpose of life –safety and fire protection, it's important to establish opening limitations for courts.

**Cost Impact:** Will increase the cost of construction  
The code change proposal increases construction cost where the separation between the assumed property line and the building facade will require fire resistant construction.

G132-15 : 503.1.2.1  
(New)-CUEVAS4647

---

### Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** The proposal would have the net effect of requiring buildings to be protected from themselves. The committee did not find this necessary or appropriate. These issues are adequately addressed in other provisions of the code including Chapter 6 and 12.

**Assembly Action :**

**None**

---

### Individual Consideration Agenda

*Public Comment 1:*

**Proponent : Victor Cuevas, representing City of Los Angeles (victor.cuevas@lacity.org) requests Approve as Submitted.**

**Commenter's Reason:** Will attempt to address the comments and concerns from the committee with the following two statements:

1- If there is no limit on the size of a court, a court can be built small enough to become a shaft, where smoke and fire can easily spread to create a dangerous condition.

2- In a multi-story building with an office space directly across the court yard from a lab space (could be 5 feet away, since there is no limit), currently does not have any limitation with the distance from each other. This can be a very dangerous fire condition since there is no protection of openings limitation.



# G135-15

## 504.5 (New)

### **Proposed Change as Submitted**

**Proponent :** Stephen Skalko, representing Masonry Alliance for Codes and Standards (svskalko@cox.net)

## **2015 International Building Code**

### **Add new text as follows:**

**504.5 Fire apparatus access roads** Not less than two fire apparatus access roads shall be provided for buildings of Type III, IV or V construction that are four or more stories in height. The fire apparatus access roads shall comply with Section 503 of the *International Fire Code*. The termination point of the fire apparatus access roads on the building site shall be placed a distance apart not less than one-third of the length of the maximum overall diagonal dimension of the building or area to be served, as measured in a straight line.

**Reason:** As buildings of Type III, IV and V construction are being built to taller heights as allowed in Tables 504.3 and 504.4 of the code, they are representing a significant challenge for the fire service in responding to and attempting to extinguish or control the burning of the combustible structure, especially at the higher elevations. In addition, these buildings of combustible material necessitate response by larger numbers of fire fighters and fire apparatus. This is evident by the fires that have occurred in recent years for buildings of combustible framing under construction. A recent example is a major fire in Los Angeles with five stories of wood framing over a two story concrete podium on December 8, 2014. The apartment building known as the DaVinci required more than 250 firefighters to be dispatched to the scene. Access to parts of the building under fire was limited by the site layout.

Other recent large combustible framed building that experienced fires also presented significant challenges for the fire service include:

1. Monroe Apartments, Portland, OR August 8,2013
2. Student Apartments, Kingston, Ontario, CAN December 17, 2013
3. 550 East and 500 South, Salt Lake City, UT February 9, 2014
4. Commercial Building, Roxbury, MA, March 3, 2014
5. Mission Bay Project, San Francisco, CA March 11, 2014
6. Axis Apartments, Houston, TX , March 25, 2014
7. Beacon Street,Boston, MA March 27, 20t4
8. Gables Upper Rock, Rockville, MD Apri , 2014
9. SE Tech Cente rDrive, Vancouver, WA, June 19, 2014
10. Victoria Commons, Kitchener, Ontario, CAN, July 22, 2014
11. Apollo Way, Madison, WI August 8, 2014

This proposal will require at least two fire apparatus access roads be provided for these taller buildings of combustible construction to assist the fire service in responding to and possibly gaining early control of the fire. To insure reasonable remoteness of the location of these access roads on site they are being required to be placed a distance equal to 1/3 the overall diagonal of the building similar to criteria for remoteness of exits and exit access in Section 1007.1.1.

**Cost Impact:** Will increase the cost of construction

This proposal is expected to increase the cost of construction due to the additional fire apparatus access roads required on site. This increased cost however is necessary to reduce the risk of damage to adjacent properties due to fire exposure and provide the fire service with improved access for firefighting response to these taller buildings of combustible construction.

G135-15 : 504.5 (New)-  
SKALKO5797

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The proposal would have significant cost impacts to a reasonable construction type. The code already addresses the differences between wood frame construction versus other materials in the height and area tables. If this were to be adopted, it either belongs in Chapter 33 which addresses safeguards during construction or in the IFC. The code provides for the local code official to provide firefighting access during construction; such is a local issue that shouldn't be overridden in the national code. The committee saw this as having a killing effect on development of housing in locations which are infills to the existing urban fabric. The proposal would have a permanent impact on a building for an issue that appears to be primarily related to the construction phase of projects. There was no justification provided for the proposed 1/3 diagonal separation of the proposed roads.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : William Hall, Portland Cement Association, representing Portland Cement Association (jhall@cement.org) requests Approve as Submitted.**

**Commenter's Reason:** Quote from fire services regarding condominium fire in Ponte Vedra, FL on July 13, 2015:

"We had a heavy fire load upon arrival, so we were essentially playing catch up as soon as we got here. The location of the building, while one side gives us good access, the opposite side of the structure, essentially, there's very little access," Robshaw said. "The other building is very close to it, so it's difficult for us to get back there. That is where the main body of the fire was located. So really one of our primary objectives, initially, was accessing that area and then preventing the adjacent structure from becoming involved."

Clearly there is a need to assure access for fire fighting activities and to mitigate damage to adjacent properties.

### *Public Comment 2:*

**Proponent : Stephen Skalko, Stephen V. Skalko, P.E. & Associates, LLC, representing Masonry Alliance for Codes and Standards requests Approve as Modified by this Public**

## **Comment.**

### **Modify as Follows:**

## **2015 International Building Code**

**504.5 3302.4 Fire apparatus access roads** *No change to text.*

**Commenter's Reason:** One of the reasons the General Code Committee gave for disapproval of G135-15 was that these provisions should be placed in Chapter 33 of the IBC, which covers safeguards during construction. This public comment modifies the original proposal by relocating the requirements to Chapter 33.

In addition, the Committee reason stated this proposal would have a killing effect on development of housing in locations which are infills to the existing urban fabric. This is not necessarily the case because many infill projects are on properties which have access to at least two public streets or to a public street and an alley. And for those projects where the property is bounded by buildings on three sides, such as urban downtowns, it would be better not to permit buildings of this type of construction on those limited access properties to reduce risk from fire that these buildings of combustible materials pose to adjacent properties. This limitation is consistent with the property protection objective of the code

The Committee also must not have seen the last sentence of the reasoning statement that explained the 1/3 diagonal for remoteness of these access roads. As noted in the original reason, the use of 1/3 of the overall diagonal of the building is to provide some level of remoteness to reduce the likelihood that both access roads would be unusable. This value is similar to the criteria for remoteness of exits and exit access in Section 1007.1.1.

Besides the fires listed in the original reasoning statement a recent fire in the Belleza condominium complex at Ponte Vedra Beach, Florida on July 13<sup>th</sup>, is another example of the need for adequate access to these types of buildings. After the fire was under control St. Johns County Fire-Rescue Capt. Jeremy Robshaw was quoted as saying " *We had a heavy fire load upon arrival, so we were essentially playing catch up as soon as we got here. The location of the building, while one side gives us good access, the opposite side of the structure, essentially, there's very little access. The other building is very close to it, so it's difficult for us to get back there. That is where the main body of the fire was located. So really one of our primary objectives, initially, was accessing that area and then preventing the adjacent structure from becoming involved.*" [<http://www.news4jax.com/news/fire-causes-evacuation-at-timberwalk-apartments/34127358>].

More than one fire department access road to these types of buildings is essential to give the fire service ample opportunity stage an attack if a fire should occur and to keep the risk of fire spread to other properties at an acceptable level.

**Recommend APPROVAL AS MODIFIED for G 135-15.**

---

G135-15

# G136-15

505.2

## **Proposed Change as Submitted**

**Proponent :** Stephen DiGiovanni, Clark County Building Department (sdigiovanni@clarkcountynv.gov)

### **2015 International Building Code**

**Revise as follows:**

**505.2 Mezzanines.** A *mezzanine* or *mezzanines* in compliance with Section 505.2 shall be considered a portion of the *story* below. Such *mezzanines* shall not contribute to either the *building area* or number of *stories* as regulated by Section 503.1. The area of the *mezzanine* shall be included in determining the *fire area*. The clear height above and below the *mezzanine* floor construction shall be not less than 7 feet 6 inches (2286 mm).

**Exception:** The clear height above and below the mezzanine shall not be less than 7 feet (2134 mm) where occupant loads are equal to or less than those shown in Table 1006.2.1.

**Reason:** Mezzanines are grouped with equipment platforms in the code. This is consistent with the thought that mezzanines are primarily small areas for equipment or storage. However the size of the mezzanine is only limited by the area of the floor below; larger floor plates allow larger mezzanines. The code encourages the use of large mezzanines since they do not count as stories and do not contribute to building area. The occupancy group of mezzanines is also not limited. As a consequence of these two conditions the code allows large occupancy loads in mezzanines. Greater occupancy loads increases evacuation times. Section 1208.2 dictates a minimum ceiling height of 7'-6" for occupiable spaces, habitable spaces and corridors. Section 1003.2 requires the clear height of a means of egress be at least 7'-6" with some exceptions. One exception being a mezzanine designed in accordance with Section 505. By limiting the occupant loads to those shown in Table 1006.2.1 for the threshold at which additional means of egress would be required would reduce any potential risk of endangering occupant in a fire event.

**Cost Impact:** Will increase the cost of construction  
For larger mezzanines, this proposal will increase the cost of construction by requiring taller ceiling heights than are currently required by code.

G136-15 : 505.2-  
DIGIOVANNI3826

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The code change is onerous for mezzanines. The code permits lowered ceiling heights in portions of the egress pathway. The committee did not find that the proponent's reasonings justified changing the height requirements for mezzanines.

---

**Individual Consideration Agenda****Public Comment 1:**

**Proponent : Kevin McOsker, representing Southern Nevada Chapter of ICC (ktm@ClarkCountyNV.gov) requests Approve as Modified by this Public Comment.**

**Modify as Follows:****2015 International Building Code****505.2 Mezzanines.**

A *mezzanine* or *mezzanines* in compliance with Section 505.2 shall be considered a portion of the *story* below. Such *mezzanines* shall not contribute to either the *building area* or number of *stories* as regulated by Section 503.1. The area of the *mezzanine* shall be included in determining the *fire area*. The clear height above and below the *mezzanine* floor construction shall be not less than 7 feet 6 inches (2286 mm).

**Exception:** The clear height above and below the mezzanine shall not be less than 7 feet (2134 mm) where one of the following conditions are met:

1. Where occupant loads are equal to such that only one means of egress is required from the mezzanine.
2. The mezzanine is located in a Group F or less than those shown in Table 1006.2.1. S occupancy.

**Commenter's Reason:** The original proposal was to limit the 7'-0" ceiling height to smaller mezzanines, which the revised language provides in slightly modified language that is easier to read and understand. The revised language was approved as a floor modification, yet the overall proposal failed to pass through the committee. An opponent pointed out that Group F (factory and industrial uses) and Group S (storage uses) have limited occupant loads and the flexibility of space is a premium for building of these uses. An additional exception was added for an allowance for Group F and S occupancies to allow lower ceiling heights regardless of the occupant load of the mezzanine.

---

**G136-15**

# G138-15

## 505.2.1

### **Proposed Change as Submitted**

**Proponent :** Marshall Klein, representing NMHC

## **2015 International Building Code**

**Revise as follows:**

**505.2.1 Area limitation.** The aggregate area of a *mezzanine* or *mezzanines* within a room shall be not greater than one-third of the floor area of that room or space in which they are located. The enclosed portion of a room shall not be included in a determination of the floor area of the room in which the *mezzanine* is located. In determining the allowable *mezzanine* area, the area of the *mezzanine* shall not be included in the floor area of the room.

Where a room contains both a *mezzanine* and an *equipment platform*, the aggregate area of the two raised floor levels shall be not greater than two-thirds of the floor area of that room or space in which they are located.

### **Exceptions:**

1. The aggregate area of *mezzanines* in buildings and structures of Type I or II construction for special industrial occupancies in accordance with Section 503.1.1 shall be not greater than two-thirds of the floor area of the room.
2. The aggregate area of *mezzanines* in buildings and structures of Type I or II construction shall be not greater than one-half of the floor area of the room in buildings and structures equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1 and an *approved emergency voice/alarm communication system* in accordance with Section 907.5.2.2.
3. The aggregate area of a *mezzanine* within a *dwelling unit* that is located in a building equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2 shall not be greater than one-half of the floor area of the room, provided:
  - 3.1. The *mezzanine*, other than enclosed closets and bathrooms, shall be open to the room in which such *mezzanine* is located.
  - 3.2. The opening to the room shall be unobstructed except for walls not more than 42 inches (1067 mm) in height, columns and posts, and
  - 3.3. Exceptions to Section 505.2.3 shall not be permitted.

**Reason:** Currently, Section 505.2.3 permits mezzanines with an occupant load of 10 or less to be entirely enclosed, with an enclosed area up to 1/3 of the area of the room in which the mezzanine is located. This proposal provides an option to forfeit a fully enclosed mezzanine to gain an allowable area up to 1/2 of the room area. From a safety perspective, having the mezzanine open to the space below provides increased awareness for occupants in either area to a hazardous condition that

develops within the space. The proposed slight increase in mezzanine area is reasonable based on the increase in safety associated with not allowing the entire mezzanine to be enclosed.

**Cost Impact:** Will not increase the cost of construction

Because this proposal simply provides an optional exception, there is no impact on the cost of construction unless someone chooses to apply the exception. Where the exception is applied, the cost of construction will presumably decrease based on eliminating the wall that might have otherwise been installed to separate the mezzanine from the room.

G138-15 : 505.2.1-  
KLEIN4533

---

## **Public Hearing Results**

**Committee Action:**

**Approved as Modified**

**Modification:**

**505.2.1 Area limitation.** The aggregate area of a *mezzanine* or *mezzanines* within a room shall be not greater than one-third of the floor area of that room or space in which they are located. The enclosed portion of a room shall not be included in a determination of the floor area of the room in which the *mezzanine* is located. In determining the allowable *mezzanine* area, the area of the *mezzanine* shall not be included in the floor area of the room.

Where a room contains both a *mezzanine* and an *equipment platform*, the aggregate area of the two raised floor levels shall be not greater than two-thirds of the floor area of that room or space in which they are located.

**Exceptions:**

1. The aggregate area of *mezzanines* in buildings and structures of Type I or II construction for special industrial occupancies in accordance with Section 503.1.1 shall be not greater than two-thirds of the floor area of the room.
2. The aggregate area of *mezzanines* in buildings and structures of Type I or II construction shall be not greater than one-half of the floor area of the room in buildings and structures equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1 and an *approved emergency voice/alarm communication system* in accordance with Section 907.5.2.2.
3. The aggregate area of a *mezzanine* within a *dwelling unit* that is located in a building

equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 shall not be greater than one-half of the floor area of the room, provided:

1. ~~The mezzanine, other than~~ Except for enclosed closets and bathrooms, the mezzanine shall be open to the room in which such mezzanine is located.
2. The opening to the room shall be unobstructed except for walls not more than 42 inches (1067 mm) in height, columns and posts, and
3. Exceptions to Section 505.2.3 shall not be permitted.

**Committee Reason:** The change provides design flexibility for dwelling unit design without impacting safety. It will likely not result in a significant increase in occupant load within any individual dwelling unit. The modification provided better clarity for the first sub-item to this new third exception. The visibility requirement of the mezzanine is maintained.

**Assembly Action :**

**None**

---

### **Individual Consideration Agenda**

#### *Public Comment 1:*

**Proponent : William Hall, Portland Cement Association, representing Portland Cement Association (jhall@cement.org) requests Disapprove.**

**Commenter's Reason:** The additional square footage is not calculated for allowable area of the building. The proposal adds a 50% increase in allowable area of the mezzanine. Another concern with this proposal is that, as written it can be used for any occupancy.

#### *Public Comment 2:*

**Proponent : Stephen Skalko, Stephen V. Skalko, P.E. & Associates, LLC, representing Masonry Alliance for Codes and Standards requests Disapprove.**

**Commenter's Reason:** G 138-15 ignores two important fire safety objectives of the building code. They are property protection and protection to the fire service which are achieved by regulating the allowable heights and areas of buildings based on occupancy and construction type. Apparently the General Code Committee focused only on life safety when they recommended this proposal be approved as modified. This is evident by their reasoning statement that the "*change provides design flexibility for dwelling unit design without impacting safety*" and "*will likely not result*

*in a significant increase in occupant load within any individual dwelling unit". While both those statements may be true the fact is that allowing a mezzanine to be up to 1/2 of the size of the room to which it opens results in an increase in the overall floor area of the building. Increased floor area also increases the fire load.*

The increase in the fire load of the building by the proposal does not include any additional fire safety features to offset the larger fire load. For typical residential buildings, that are of Type III and V construction, the added fire load is not only from potential contents on the larger mezzanines (i.e. mattresses, furniture, clothes, etc.) but also from the additional combustible framing members required to construct the larger mezzanine area. Too, this increased fire load is not due to just one mezzanine in one dwelling unit. The provision would apply to all dwelling units in the building. For example, the number of larger mezzanines that would be permitted could be 36 in a 4-story R-2 occupancy building with 8 units per floor.

Besides increased fire load these larger intermediate mezzanines become more like additional stories in the building due to the larger size. Historically the code has permitted small mezzanines without counting them as a story for building height purposes when their size was limited to 1/3 of the room in which they are located. Thus this code change will allow an increase in the number of stories for residential buildings, again without any added fire safety features to offset the increase in stories.

Exception #2 to Section 505.2.1 of the code already permits mezzanines to be increased up to 1/2 of the room it opens into in buildings. The criteria include providing sprinkler protection and emergency voice/alarm systems, and using Type I or Type II construction for the building. Sprinklers, alarm systems and limiting combustible materials in the building construction to permit larger intermediate floors are further evidence that the code considers property protection and fire service protection in addition to life safety. The provisions in this proposal fall short of these building code objectives.

**Recommend DISAPPROVAL of G 138-15.**

---

**G138-15**

# G139-15

## 505.2.3

### **Proposed Change as Submitted**

**Proponent :** Edward Kulik, representing Building Code Action Committee (bcac@iccsafe.org)

## **2015 International Building Code**

### **Revise as follows:**

**505.2.3 Openness.** A *mezzanine* shall be open and unobstructed to the room in which such *mezzanine* is located except for walls not more than 42 inches (1067 mm) in height, columns and posts.

#### **Exceptions:**

1. *Mezzanines* or portions thereof are not required to be open to the room in which the *mezzanines* are located, provided that the *occupant load* of the aggregate area of the enclosed space is not greater than 10.
2. A *mezzanine* having two or more exits or access to exits is not required to be open to the room in which the *mezzanine* is located.
3. *Mezzanines* or portions thereof are not required to be open to the room in which the *mezzanines* are located, provided that the aggregate floor area of the enclosed space is not greater than 10 percent of the *mezzanine* area.
4. In industrial facilities, *mezzanines* used for control equipment are permitted to be glazed on all sides.
5. In occupancies other than Groups H and I, that are no more than two *stories* above *grade plane* and equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, a *mezzanine* having two or more ~~*means of egress*~~ exits or access to exits shall not be required to be open to the room in which the *mezzanine* is located.

**Reason:** The intent of this proposal is to revise Exception 5 to be consistent with the terminology in Exception 2.

In July/2014 the ICC Board decided to sunset the activities of the Code Technology Committee (CTC). This is being accomplished by re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). This proposal falls under the CTC Area of Study entitled Unenclosed Exit Stairs. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website.

This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

**Cost Impact:** Will not increase the cost of construction  
This proposal is a clarification of provisions.

G139-15 : 505.2.3-  
KULIK3642

---

## **Public Hearing Results**

**Committee Action:** **Approved as Submitted**

**Committee Reason:** The proposal is a clean up of text within the exceptions, specifically between #5 and #2. It also provides consistency with Chapter 10.

**Assembly Action :** **None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : Edward Kulik, representing ICC Building Code Action Committee (bcac@iccsafe.org) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

**505.2.3 Openness.** A *mezzanine* shall be open and unobstructed to the room in which such *mezzanine* is located except for walls not more than 42 inches (1067 mm) in height, columns and posts.

#### **Exceptions:**

1. *Mezzanines* or portions thereof are not required to be open to the room in which the *mezzanines* are located, provided that the *occupant load* of the aggregate area of the enclosed space is not greater than 10.
2. A *mezzanine* having two or more exits or access to exits is not required to be open to the room in which the *mezzanine* is located if at least one exit is provided at the mezzanine level.
3. *Mezzanines* or portions thereof are not required to be open to the room in which the *mezzanines* are located, provided that the aggregate floor area of the enclosed space is not greater than 10 percent of the *mezzanine* area.
4. In industrial facilities, *mezzanines* used for control equipment are permitted to be glazed on all sides.
5. In occupancies other than Groups H and I, that are no more than two *stories* above *grade plane* and equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, a *mezzanine* having two or more exits or access to exits shall not be required to be open to the room in which the *mezzanine* is located.

**Commenter's Reason:** The ICC Building Code Action Committee is requesting approval as modified by this public comment. The original proposal was simply to revise Exception 5 to refer to "two or more exits or access to exits". This was part of E7-12/13, which was a sweeping proposal which replaced "means of egress" with "exit or exit access".

Currently, when you compare Exception 2 and Exception 5 they conflict with each other. Exception 2 allows for the mezzanine not to be open to the floor below **IF** the mezzanine has two or more exits or access to exits. But, Exception 5 states that the mezzanine need not be open to the floor below **IF**

1. the occupancy is not H or I
2. the building is sprinklered
3. the building is not more than 2 stories
4. the mezzanine has two or more means of egress

When you compare these exceptions, Exception 2 only requires Item 4 to occur from Exception 5.

One of the other components of E7-12/13 was that it also revised Exception 2. Previously, Exception 2 read:

"2. A *mezzanine* having two or more exits or access to exits is not required to be open to the room in which the *mezzanine* is located if at least one of the means of egress provides direct access to an exit from the mezzanine level."

The last portion of Exception 2 was deleted which required that one of the exits or access to an exit provided direct exit. This was the differentiating factor between Exception 2 and Exception 5. The phrase was deleted because it was unclear. What should have happened is that the phrase was clarified. This Public Comment is intended to provide a clarification to Exception 2 so that it will not conflict with Exception 5.

This Public Comment restores the requirement in Exception 2 to provide one exit directly from the mezzanine level. In doing so, Exception 2 and 5 are not conflicting. The language is also clarified to be clear that the "exit" must be available at the mezzanine level.

---

**G139-15**

# G140-15

## 506.1.4 (New)

### **Proposed Change as Submitted**

**Proponent :** Vickie Lovell, InterCode Incorporated, representing Fire Safe North America (vickie@intercodeinc.com)

## **2015 International Building Code**

**Add new text as follows:**

### **506.1.4 Allowable area for buildings in disaster prone regions.**

For buildings more than one story in height above grade plane that are of construction Types IIB, IIIB and VB, the maximum allowable area shall not be greater than the area permitted for non-sprinklered (NS) buildings in accordance with Table 506.2, adjusted for any frontage increase in accordance with 506.3 and where such buildings are any of the following:

1. Assigned to Seismic Design Category C or D in Table 1613.3.5(1).
2. Located in a flood hazard area established in accordance with Section 1612.3.
3. Located in a hurricane-prone region.

**Reason:** The purpose of this code change is to reduce the total reliance of a community and its firefighters on sprinkler systems in disaster-prone areas of the country where the water supply and/or power may be interrupted, or are likely to have municipal water system operation issues. This proposal is a very conservative proposal to promote community resiliency by limiting the footprint of multi-story buildings that have no vertical fire compartmentation to that which would be allowed for non-sprinklered buildings. The Type IIB, IIIB, and VB buildings may have a fully involved fire in a very short amount of time in the event that water supplies for sprinklers are reduced or impaired after a natural catastrophe. Such water supply interruptions are not uncommon after natural disasters. For non-rated multi-story buildings, meaning buildings that have no fire resistance rated floors, fire may spread freely and quickly from story to story. Limiting the per-floor area of Type IIB, IIIB, and VB buildings is intended to result in protecting buildings in areas at high risk for natural catastrophes the most essential combustible buildings and facilities with both sprinkler protection and increased fire resistance rated vertical compartmentation. This proposal may be fairly considered to be the proverbial "belt-and suspenders" approach. If one were to fail, the other protection method would provide an added layer of protection that would serve to prevent a life safety disaster.

The 2012 IBC Sections 504.2 and 506.3 had specific allowable increases that were permitted when automatic sprinkler systems were installed. Those allowances have been incorporated into Tables 504.3 and Table 504.4 as S1 and SM. Such allowable area increases permitted by the code assumed that power and water supply will be readily available and reliable for the successful operation of fire suppression systems. This is especially true for combustible construction such as Types IIB, IIIB and VB, and also for non-combustible construction without any vertical compartmentation. For some parts of the country where buildings impacted by a natural disaster may remain without reliable water and or power for a considerable period of time, that general assumption may not be an acceptable risk. It may also be an unacceptable risk to assume that firefighters will be able to respond at their normal efficiencies.

Responding to the challenge of mitigating damage from natural disasters, California has more stringent requirements on buildings they have designated as "high-risk ". But more than 15% of the U.S. population lives in potential major earthquake areas.

41 states and territories have moderate to high risk. There is a real likelihood of power and water supplies being interrupted following a major seismic event, along with the potential for multiple simultaneous structure fires and also uncontrollable building-to-building fire spread. In October 17, 1989, a 7.1 earthquake in Santa Cruz Mountains was responsible for 26 fires in San Francisco, 60 miles from epicenter. There were 67 documented breaks in water mains which effectively eliminated water pressure in the area. In January 19, 1994, a 6.8 earthquake centered in Northridge, CA. There were approximately 100 fire ignitions, 30 to 50 of those were considered significant. The main cause of fire was largely due to natural gas leaks. Additionally, the water supply systems in the area were damaged causing low pressure in water distribution. On January 17, 1995, a 6.8 (approx.) earthquake near Kobe, Japan caused 90 fires to start within minutes. 85 spread to adjacent buildings and 10 approached or reached conflagration status. 1,700 water line breaks occurred within a couple of hours. There were 7,000 buildings destroyed by fire alone. Similar data of increased fire incidents are available in hurricane and flood prone regions. History has shown that increased incidents of fires after a disaster can be more destructive to life and property than the disaster itself.

This change is limited in its application to multi-story buildings without any vertical fire compartmentation in the higher risk, disaster prone regions defined by the code. There may be some types of combustible materials of these buildings that should appropriately be exempted from this area limitation.

**Cost Impact:** Will increase the cost of construction

This change reduces the allowable areas of essential buildings to the allowable areas specified for non-sprinklered buildings, and the increased cost will be consistent with the costs for non sprinklered buildings. The increased costs are only proposed for limited geographic areas.

G140-15 : 506.1.4  
(New)-LOVELL5295

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** Items G140-15, G152-15 and G171-15 were considered together. The committee disapproved all three. They were unconvinced by the proponents reason statement that these changes are the way to address buildings in higher risk areas. The committee felt that the imposing this requirement on Seismic zones C and D - but not E and F was not logical.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : William Hall, Portland Cement Association, representing Portland Cement Association (jhall@cement.org) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

#### **506.1.4 Allowable area for buildings in disaster prone regions.**

For buildings more than one story in height above grade plane that are of construction Types IIB, IIIB and VB, the maximum allowable area shall not be

greater than the area permitted for non-sprinklered (NS) buildings in accordance with Table 506.2, adjusted for any frontage increase in accordance with 506.3 and where such buildings are any of the following:

1. Assigned to Seismic Design Category ~~C~~ D, E or ~~D~~ F in Table 1613.3.5(1).
2. Located in a flood hazard area established in accordance with Section 1612.3.
3. Located in a hurricane-prone region.

**Commenter's Reason:** The committee suggested that Seismic zones E and F should be included in the proposal. We have added these zones and removed Seismic zone C.

## *Public Comment 2:*

**Proponent : Vickie Lovell, InterCode Incorporated, representing Fire Safe North America (vickie@intercodeinc.com) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

#### **506.1.4 Allowable area for buildings in disaster prone regions.**

~~For~~ The maximum allowable area for buildings assigned to Risk Category IV that are more than one story in height above grade plane that and are of construction Types IIB, IIIB and VB, the maximum allowable area shall not be greater than the area permitted for non-sprinklered (NS) buildings in accordance with Table 506.2, adjusted for any frontage increase in accordance with 506.3 , and where such buildings are any of the following:

1. Assigned to Seismic Design Category ~~C~~ D or ~~D~~ F in ~~Table 1613.3.5(1)~~ accordance with Section 1613.3.5.
2. Located in a special flood hazard area established in accordance with Section 1612.3.
3. Located in a ~~hurricane-prone~~ windborne-debris region based on Figure 1609.3(2).

**Exception:** Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 that are provided with a secondary water supply in accordance with Section 403.3.3, and where the fire pumps are protected against interruption of service in accordance with Section 913.

**Commenter's Reason:** The area limitation is intended to apply ONLY to buildings that are all of the following:

- Classified as the highest risk.
- Located in the highest risk, disaster-prone regions for floods, hurricanes, and seismic activity.
- Types IIB, IIIB and VB construction.

It excludes sprinklered buildings that have emergency backup systems for water and power in those regions.

The purpose of this code change is to reduce the total reliance of a community and its firefighters on sprinkler systems in disaster-prone areas of the country where the water supply and/or power may be interrupted, or are likely to have municipal water

system operation issues. This proposal is a very conservative proposal to promote community resiliency by limiting the footprint of multi-story buildings that have no vertical fire compartmentation to that which would normally be allowed for non-sprinklered buildings. The Type IIB, IIIB and VB buildings may have a fully involved fire in a very short amount of time in the event that water supplies for sprinklers are reduced or impaired after a natural catastrophe. Such water supply interruptions are not uncommon after natural disasters. For non-rated multi-story buildings, meaning buildings that have no fire resistance rated floors, fire may spread freely and quickly from story to story. Limiting the per-floor area of Type IIB, IIIB, and VB buildings is intended to result in protecting buildings in areas at high risk for natural catastrophes, the most essential combustible buildings, and facilities with both sprinkler protection and increased fire resistance rated vertical compartmentation. This proposal may be fairly considered to be the proverbial "belt and suspenders" approach. If one were to fail, the other protection method would provide an added layer of protection that would serve to prevent a life safety disaster.

The 2012 IBC Sections 504.2 and 506.3 had specific allowable increases that were permitted when automatic sprinkler systems were installed. Those allowances have been incorporated into Tables 504.3 and 504.4 as S1 and SM. Such allowable area increases permitted by the code assumed that power and water supply will be readily available and reliable for the successful operation of fire suppression systems. This is especially true for combustible construction such as Types IIB, IIIB and VB, and also for non-combustible construction without any vertical compartmentation. For some parts of the country where buildings impacted by a natural disaster may remain without reliable water and or power for a considerable period of time, that general assumption may not be an acceptable risk. It may also be an unacceptable risk to assume that firefighters will be able to respond at their normal efficiencies.

Responding to the challenge of mitigating damage from natural disasters, California has more stringent requirements on buildings they have designated as "high-risk". But more than 15% of the U.S. population lives in potential major earthquake areas; 41 states and territories have moderate to high risk. There is a real likelihood of power and water supplies being interrupted following a major seismic event, along with the potential for multiple simultaneous structure fires and also uncontrollable building-to-building fire spread. On October 17, 1989, a 7.1 earthquake in the Santa Cruz Mountains was responsible for 26 fires in San Francisco, 60 miles from epicenter. There were 67 documented breaks in water mains which effectively eliminated water pressure in the area. On January 19, 1994, a 6.8 earthquake centered in Northridge, CA. There were approximately 100 fire ignitions, 30 to 50 of those were considered significant. The main cause of fire was largely due to natural gas leaks. Additionally, the water supply systems in the area were damaged causing low pressure in water distribution. On January 17, 1995, a 6.8 (approx.) earthquake near Kobe, Japan caused 90 fires to start within minutes; 85 spread to adjacent buildings and 10 approached or reached conflagration status. 1,700 water line breaks occurred within a couple of hours. There were 7,000 buildings destroyed by fire alone. Similar data of increased fire incidents are available in hurricane and flood prone regions. History has shown that increased incidents of fires after a disaster can be more destructive to life and property than the disaster itself.

This change is limited in its application to multi-story buildings without any vertical fire compartmentation in the higher risk, disaster-prone regions defined by the code. There may be some types of combustible materials of these buildings that should appropriately be exempted from this area limitation.

Cost Impact: Will increase the cost of construction

This code change proposal will increase the cost of construction for some building types.

# G142-15

## 506.3, 506.3.1

### **Proposed Change as Submitted**

**Proponent :** William Hall, representing Portland Cement Association (jhall@cement.org)

## **2015 International Building Code**

### **Revise as follows:**

**506.3 Frontage increase.** Every building shall adjoin or have access to a public way to receive an area factor increase based on frontage. Area \_ Buildings four stories or more in height, as measured from the grade plane, of Type III and V construction, using combustible framing material shall also not have less than 25 percent of its perimeter on a public way or open space. Such open space shall be either on the same lot or dedicated for public use and shall be accessed from a street or approved fire lane. The area factor increase shall be determined in accordance with Sections 506.3.1 through 506.3.3.

**506.3.1 Minimum percentage of perimeter.** To qualify for an area factor increase based on frontage, a building shall have not less than 25 percent of its perimeter on a public way or open space. Such open space shall be either on the same lot or dedicated for public use and shall be accessed from a street or approved fire lane. Open space for buildings four or more stories in height as measured from the grade plane, of Type III and V construction, using combustible framing material shall have a grade of not more than 10 percent and be provided with a fire apparatus access road in accordance with Section 503 of the *International Fire Code* for full length of open space. Open space that is not used for open perimeter area increases are not required to provide fire apparatus access roads or 10 percent grade.

**Reason:** Fires during construction have been on the increase across the U.S and other countries which utilize combustible construction in multi-story buildings. The intensity of these fires put adjacent buildings, businesses and residents at risk until the project is complete, which can take up to 2 years to complete or more if the project stalls. These fires are caused by a multitude of reasons including but not limited to arson, smoking, cooking, heating and hot work. Fire service, even in large well equipped jurisdictions cannot effectively stop these conflagrations and most of these incidents end in total loss of the building under construction as well as damaged or destroyed adjacent buildings. Many times adjacent buildings are at risk due to the extreme heat, flying embers and wind speeds, as seen in the recent Los Angeles fire where paper, laying on a desk in an adjacent high rise structure caught fire and 6 six floors of the high rise were on fire. Currently the building code allows a 75% increase in the base tabular area when the structure has an on open perimeter of 20-30 feet, in more than 25 percent of total building perimeter. Currently the open space is not required to be open or traversable by fire apparatus vehicles. This code proposal does two things: First requires that all Type III and V buildings, 4 or more stories, be required to provide 25% open space or public space and secondly would require that the open space, used for an increase in allowable area, be usable by the fire service and apparatus, in Type III and V buildings 4 or more stories in height.

Fire service must be able to access the structure to effectively battle the fire. If a building is allowed to be built bigger by providing open space, the space should serve as access for fire fighting.

**Cost Impact:** Will increase the cost of construction  
This change will increase the cost of construction for Type III and V construction, 4 stories and over, using combustible construction.

G142-15 : 506.3-  
HALL4560

---

### **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** This proposal is another one addressing fires during construction. This is already adequately address via the authorities granted in Chapter 33 and the IFC. There is nothing which assures the space required by this proposal would actually stay open and functional. Construction crews will use such spaces for staging of materials and similar activities.

**Assembly Action :**

**None**

---

### **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : William Hall, Portland Cement Association, representing Portland Cement Association (jhall@cement.org) requests Approve as Submitted.**

**Commenter's Reason:** To reply to the committee statement, this is not another proposal to address construction fires. This proposal is in response to fire departments not being able to have access to fight fire. Many designers use the 25% open perimeter to get increases in allowable area. This proposal simply requires an open space for staging and emergency operations where the building is combustible and 4 stories or more.

Access continues to be an issue as read in this quote from fire services at the Ponte Verda, FL condominium fire:

"We had a heavy fire load upon arrival, so we were essentially playing catch up as soon as we got here. The location of the building, while one side gives us good access, the opposite side of the structure, essentially, there's very little access," Robshaw said. "The other building is very close to it, so it's difficult for us to get back there. That is where the main body of the fire was located. So really one of our primary objectives, initially, was accessing that area and then preventing the adjacent structure from becoming involved."

---

G142-15

# G143-15

202 (New), 506.3.1

## Proposed Change as Submitted

**Proponent :** Ali Fattah, City of San Diego Development Services Department, representing City of San Diego (afattah@sandiego.gov)

## 2015 International Building Code

**Add new text as follows:**

### SECTION 202 DEFINITIONS

**FIRE APPARATUS ACCESS ROAD** A road that provides fire apparatus access from a fire station to a facility, building or portion thereof. This is a general term inclusive of all other terms such as fire lane, public street, private street, parking lot lane and access roadway.

**Revise as follows:**

**506.3.1 Minimum percentage of perimeter.** To qualify for an area factor increase based on frontage, a building shall have not less than 25 percent of its perimeter fronting on a public way or open space yard. Such open space shall be either on the same lot or dedicated for public use and shall be accessed from a street or approved fire lane apparatus access road.

**Reason:** Section 202 of the International Fire Code more clearly describes what the codes intend when the term fire lane is used. The term makes it clear that its purpose is for the movement and staging of fire apparatus and includes private streets, parking lot lanes and access roadways. This editorial code change adds consistency and clarity.

The term fire lane is too restrictive since it is evident from definition in IBC Section 202 and states that a fire lane is "A road or other passageway developed to allow the passage of fire apparatus. A fire lane is not necessarily intended for vehicular traffic other than fire apparatus". A fire apparatus access road can be used by vehicles other than fire apparatus. Additionally open space is not a defined term however yard is and yard is required to be clear and open to the sky which is what is intended for the open space.

The term fire lane is used in three instances in the IBC (Section 202, 506.3.1 and 705.8.1 Except 1 and 2) and since it is a permissible element within the fire apparatus roadway definition the proposed definition will not add conflicts with other parts of the code.

**Cost Impact:** Will not increase the cost of construction

This code change is editorial. A fire access roadway will be required by the fire code to access exterior portions of a building within 200 ft of the response point.

G143-15 : 506.3.1-  
FATTAH4661

---

## Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** The language with respect to yards versus courts versus open space, in the proposal is unclear. This is a fire code issue and shouldn't be brought into the IBC. The definition would imply that a building would be required to address a fire access route all the way back to a fire station. A private land owner can not be expected to control what is going on in the public rights of way.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### ***Public Comment 1:***

**Proponent : Ali Fattah, City of San Diego Development Services, representing City of San Diego (afattah@sandiego.gov) requests Approve as Submitted.**

**Commenter's Reason:** This public comment is submitted after consideration of the feedback provided during the committee action hearings. This is an editorial code change that harmonizes definitions between the IFC and IBC. The IBC term fire lane is a subset of a broader definition in the IFC. There is no intent to regulate fire access from fire stations to the site nor is it the intent of the code change to change the fire code definition.

Insofar as the proposed change to substitute the term yard, a defined term, in lieu of open space, open space is too broad and can be a cliff, body of water or other inaccessible areas. While a cliff or open body of water provides fire separation, access for fire fighting may not be available.

The term fire lane does not account for communities that include private streets that are not maintained by the local jurisdiction but that are designed and maintained in like fashion to public ways. Many yards are accessed by drive lanes along sides of a building with perpendicular parking that do not comply with the fire code defined term fire lane.

- IFC Section 202 FIRE LANE. A road or other passageway developed to allow the passage of fire apparatus. **A fire lane is not necessarily intended for vehicular traffic other than fire apparatus.**

The Building Code and Fire Code are coordinated members of the I code family and are designed to work together. there are numerous instances where common definitions are used in both codes or where technical requirements in one code rely on technical requirements in another code both by reference or transcription. The allowance for frontage increase relies on open space to provide fire separation as a trade off for an allowable area increase. These buildings may or may not be protected with a fire sprinkler system. The IBC commentary clarifies that the code intends the yard to provide both access for the fire department and open space. Unlike fire separation distance the yard can be measured to the face of an adjoining building or to a building on the other side of a public way such as a narrow street or alley.

The public right of way allows unimpeded access to anyone and is regulated by law enforcement through the motor vehicle code. So the portions of the IFC definition that alarmed the committee do not require the property owner to control access since the governing jurisdiction through it's police powers ensures free access. the portion of the route on portions other than the right of way are under the control of the property owner and can be enforced by the Fire Code Official as a part of regular maintenance inspections required/authorized by the fire code.

The terms 'public way' and 'yard' are defined terms and they should appear in italic font when used in Section 506.3.1.

The committee stated that the IBC commentary is not mandatory code language which is precisely the reason that the proposed code change is being made to add

consistency with the interpretations published by ICC.

---

**G143-15**

# G144-15

## 506.3.3, 506.3.3.1 (New), 506.3.3.2 (New) Proposed Change as Submitted

**Proponent :** William Hall, representing Portland Cement Association (jhall@cement.org)

### 2015 International Building Code

**Revise as follows:**

**506.3.3 Amount of increase.** The area factor increase based on frontage shall be determined in accordance with ~~Equation 5-5:~~  
Sections 506.3.3.1 and 506.3.3.2.

$$I_f = [F/P - 0.25]W/30 \quad \text{(Equation 5-5)}$$

where:

- ~~$I_f$  = Area factor increase due to frontage.~~
- ~~$F$  = Building perimeter that fronts on a public way or open space having minimum distance of 20 feet (6096 mm).~~
- ~~$P$  = Perimeter of entire building (feet).~~
- ~~$W$  = Width of public way or open space (feet) in accordance with Section 506.3.2.~~

**506.3.3.1 Type II construction** The area factor increase based on frontage shall be determined in accordance with equation 5.5.

$$I_f = [F/P - 0.25]W/30 \quad \text{(Equation 5-5)}$$

where:

- $I_f$  = Area factor increase due to frontage.
- $F$  = Building perimeter that fronts on a public way or open space having minimum distance of 20 feet (6096 mm).
- $P$  = Perimeter of entire building (feet).
- $W$  = Width of public way or open space (feet) in accordance with Section 506.3.2.

**Add new text as follows:**

**506.3.3.2 Type III, IV and V Construction.** The area factor increase based on frontage shall be determined in accordance with equation 5.6.

$$I_f = [F/P - 0.25]W/30 - H \quad \text{(Equation 5-6)}$$

where:

$I_f$  = Area factor due to frontage

$F$  = Building perimeter that fronts on a *public way* or open space having minimum of 20 feet (6096 mm)

$P$  = Perimeter of entire building (feet).

$W$  = Width of *public way* or open space (feet) in accordance with Section 506.3.2.

$H$  = 0 if 1 story  
25% if 2 story  
50% if 3 story  
75% if 4 or more stories

Where increase factor is negative, 0 shall be used.

**Reason:** Fires during construction have been on the increase across the U.S and other countries which utilize combustible construction in multi-story buildings. The intensity of these fires put adjacent buildings, businesses and residents at risk until the project is complete, which can take up to 2 years to complete or more if the project stalls. These fires are caused by a multitude of reasons including but not limited to arson, smoking, cooking, heating and hot work. Fire service, even in large well equipped jurisdictions cannot effectively stop these conflagrations and most of these incidents end in total loss of the building under construction as well as damaged or destroyed adjacent buildings. Many times adjacent buildings are at risk due to the extreme heat, flying embers and wind speeds, as seen in the recent Los Angeles fire where paper, laying on a desk in an adjacent high rise structure caught fire and 6 six floors of the high rise were on fire. Currently the building code allows a 75% increase in the base tabular area when the structure has an on open perimeter of 20-30 feet, in more than 25 percent of total building perimeter.

This amount of distance does not correctly relate to safe distances needed to mitigate fire spread by thermal radiation. Based on the research report titled "External fire spread: building separation and boundary distances" published by the Fire Research Station, separation distances of 30 feet during construction are not adequate in limiting fire exposure in adjacent buildings and obviously do not provide safe distances for firefighting operations.

To paraphrase the report, the minimum intensity for fire ignition is 0.3 cal cm<sup>-2</sup>s<sup>-1</sup>. To maintain levels at or below this rate of thermal radiation, fire separation distances are based on the height and width of the burning building, the number of windows and a presumed heat release ranging from 2 to 4 cal cm<sup>-2</sup>s<sup>-1</sup> depending on fire load. Office and residential usually are calculated at 2 cal cm<sup>-2</sup>s<sup>-1</sup> but in the construction phase, a total burnout is expected with full exposure so 4 cal cm<sup>-2</sup>s<sup>-1</sup> is the appropriate rate and is very conservative. Thermal radiation rates could be much higher depending on wind and openness of the structure. Based on this information, fire separation distances for a small building 100 wide by 30 feet tall requires 52 feet of separation to keep adjacent structures at or below the minimum intensity for ignition. A large building, 7 stories, such as the one in LA, would have required a minimum of 141 feet separation distance.

This proposal limits the open perimeter area increase on multi-story combustible buildings based on a separation distance of 30 feet by introducing a new height variable into the equation.

**Cost Impact:** Will increase the cost of construction

While not directly increasing the cost of construction, this proposal will limit the allowable area increases in some buildings using combustible construction for multi-story construction. The cost impact is difficult to determine, based on means and methods used by the designer.

G144-15 : 506.3.3-  
HALL4939

---

### **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** Consistent with its action on G142-15, the committee disapproved this item. Again this is trying to address risks during construction and such should be addressed in the IBC.

**Assembly Action :**

**None**

---

### **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : William Hall, Portland Cement Association, representing Portland Cement Association (jhall@cement.org) requests Approve as Submitted.**

**Commenter's Reason:** The proposal addresses allowable area increases. Building areas are allowed to increase based on a separation distance beginning at 20 feet and continued to 30 feet for full increase. This distance is not logical for combustible construction types. Thermal radiation from a fully involved 4 story building fire will easily ignite other combustibles at a distance of 30 feet. This was seen at the LA fire when multiple stories in a high rise building adjacent to the fire, were hot enough to ignite papers on the desk after windows broke from the intense heat. The image below is a structure located over 100 feet away from the fire.



---

G144-15

# G147-15

## 508.2.3

### **Proposed Change as Submitted**

**Proponent :** Jeff Hugo, National Fire Sprinkler Association, representing National Fire Sprinkler Association (hugo@nfsa.org)

## **2015 International Building Code**

### **Revise as follows:**

**508.2.3 Allowable building area.** The allowable area of the building shall be based on the applicable provisions of Section 506 for the main occupancy of the building. Aggregate accessory occupancies shall not occupy more than 10 percent of the floor area of the story in which they are located and shall not exceed the tabular values for nonsprinklered buildings in Table 506.2 for each such accessory occupancy.

**Exception:** Where a building is equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.2, aggregate accessory occupancies shall be not more than 50 per cent of the floor area of the floor of the story in which they are located where such accessory occupancies are permitted by NFPA 13R to be protected by quick-response or residential sprinklers. The allowable building area for stories with such accessory occupancies shall be based on the allowable building area for the main occupancy in accordance with Section 503.1.

**Reason:** The application of the 10% of the floor area criteria under IBC Section 508.2.3 to such types of residential occupancies covered under NFPA 13R creates major design and cost problems with 2 hour separations for accessory occupancies in such residential buildings. 2013 NFPA 13R Sections 6.2.2, 6.4.7 & 7.2 have detailed sprinkler and compartment requirements incorporated into the NFPA 13R standard to address accessory spaces outside the dwelling units when considered part of the residential (predominant) occupancy. This proposed code change would better correlate with the requirements in NFPA 13R for area/spaces outside the dwelling units that have fire loads similar to residential fire loads and/or are compartmented into 500 square feet or less in area.

**Cost Impact:** Will not increase the cost of construction  
Reduces construction costs by reducing fire barriers between floors and adjacent occupancies.

G147-15 : 508.2.3-  
HUGO4650

---

### **Public Hearing Results**

## **Committee Action:**

**Disapproved**

**Committee Reason:** The committee found the increase from 10% to 50% to be excessive and has the net effect of defeating the mixed occupancy provisions of the code. You could end up with assembly areas, storage areas, laundry facilities being half a building without proper sprinkler protection. If it would to be revised for public comment, it should include more specificity regarding the occupancies allowed under this exception and make it clear they are ancillary to the residential use.

---

**Individual Consideration Agenda****Public Comment 1:**

**Proponent : Jeff Hugo, National Fire Sprinkler Association, representing National Fire Sprinkler Association (hugo@nfsa.org) requests Approve as Modified by this Public Comment.**

**Modify as Follows:****2015 International Building Code**

**508.2.3 Allowable building area.** The allowable area of the building shall be based on the applicable provisions of Section 506 for the main occupancy of the building. Aggregate accessory occupancies shall not occupy more than 10 percent of the floor area of the story in which they are located and shall not exceed the tabular values for nonsprinklered buildings in Table 506.2 for each such accessory occupancy.

**Exception:** ~~Where~~ In Groups R and I-1 Condition 1 occupancies, where a building is equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 and 903.3.1.2, and does not exceed 60 feet and four stories in height above grade plane, aggregate accessory occupancies shall be not more than ~~50~~ 25 per cent of the floor area of the floor of the story in which they are located ~~where such accessory occupancies are permitted by NFPA 13R to be protected by quick-response or residential sprinklers~~ or where classified as light hazard. The allowable building area for stories with such accessory occupancies shall be based on the allowable building area for the main occupancy in accordance with Section 503.1.

**Commenter's Reason:** NFPA 13R was used in the original proposal, but it was commented on in Memphis that NFPA 13 should also be included. However, this proposal is meant for and limited to the height and story limits of NFPA 13R, which is used to protect residential occupancies up to four stories and sixty feet in height above grade plane. It was also commented that this proposal should be limited to the specific occupancies. NFPA 13R is limited to R occupancies, but the IBC extends the use of NFPA 13R to I-1 Condition 1 occupancies.

The residential occupancies protected by the NFPA 13R standard are typically R-1 (hotels and motels) and R-2 (apartments), but can also be used for R-3 (boarding and congregate), R-4 (custodial care) and I-1(board and care) occupancies. The scope of NFPA 13R specifically states, "...protection against fire hazards in residential occupancies..." This standard has criteria for the residential spaces as well as the other occupied areas of the building that are ancillary to residential users of the building. All residential occupancies have accessory occupancies, such as laundry facilities, gift shops, assembly spaces, exercise rooms, and other related occupancies. The scope, as mentioned above, also covers the ancillary occupancies of the residential occupancy with appropriate protection for the anticipated hazard.

There are four important sections in the 2013 edition of NFPA 13R that address accessory occupancies. They are Section 1.1 (A.1.1) 6.2.2, 6.4.7, and 7.2. It is critical to first understand the scope of NFPA 13R in Section 1.1 and the in-depth explanation of the scope in the Annex of Section 1.1. Next, the first technical section to note is Section 6.4.7. This section specifically names several areas of the building that are considered residential accessory areas. These areas are: lobbies, foyers,

corridors, halls, lounges, areas classified as ordinary hazard, garages connected to a single dwelling unit and other areas that have fire loading similar to the residential occupancy. While areas outside dwelling units are required to be protected with quick response sprinklers, NFPA 13R permits these specific areas to be protected by residential sprinklers, which are also a type of fast response sprinkler. Lobbies in hotels and motels with the fire hazards associated with cooking or warming of food cannot be protected by residential sprinklers unless NFPA 13 design and discharge criteria is used. However, NFPA 13R has an exception for residential sprinkler uses in ordinary hazard areas when a list of five conditions are met in Section 6.2.2.4, they are:

1. Up to 500-square foot compartments with 30-minute fire-rated construction.
2. Sprinkler spacing at 130-square foot per sprinkler.
3. Each opening has at least an 8-inch lintel.
4. The total area of openings in the compartment cannot exceed 50 square feet, excluding garage doors.
5. Ordinary hazard discharge densities per NFPA 13. Note, this condition does not trigger NFPA 13 to be installed throughout.

As mentioned above, NFPA 13R (in Section 7.2) requires the areas outside the dwelling units, such as accessory areas, to be sprinklered with quick response sprinklers using the design area and discharge densities from NFPA 13. However, in small compartmented areas, NFPA 13R permits the quick response sprinkler rules to remain within NFPA 13R. Below is a list for use when quick response sprinklers within the NFPA 13R standard are used:

1. The design area is the actual number of sprinklers or up to four, whichever is greater.
2. Up to 500-square foot compartments with 30-minute fire-rated construction.
3. Sprinkler spacing is per the listing, or at 130-square foot per sprinkler for ordinary hazard, or up to 225-square foot for light hazard.
4. Each opening has at least an 8 inch lintel.
5. The total area of openings in the compartment cannot exceed 50 square feet, excluding garage doors.
6. Ordinary hazard discharge densities need to be per NFPA 13. Note, this condition does not trigger NFPA 13 to be installed throughout.

The International Building Code (IBC) recognizes that accessory occupancies exist and provides designers liberal options to arrange them within a floor of a story. Many primary occupancies have accessory occupancies, for example, a mercantile building may have a coffee bar and a business office may have a commercial shipper located within the main occupancy. The IBC would permit these small accessory uses in Section 508.2. Residential occupancies, protected by NFPA 13R as explained above, have accessory occupancies also, such as coffee bars, business areas, small laundry facilities and gift shops that serve the occupants of the structure. Section 508.2.3 permits accessory occupancies to occupy 10 percent of the floor area of each story. This allowance has been in the IBC since the 2000 edition. Furthermore, the IBC has never required the accessory occupancy to be separated from the main occupancy by fire barriers, when under 10 percent, with a few exceptions, one of which is specific to R-1, R-2, R-3 and I-1 occupancies. For example, a 4-story mercantile building with 12,000 square feet on each floor would be allowed up to 1,200 square feet of accessory occupancies on each floor with no fire separation. A four story hotel or apartment building with the same 12,000 square feet on each floor would also be allowed up to 1,200 square feet of accessory occupancies. However, the hotel and apartment (R-1, R-2, R-3 and I-1) accessory occupancies would have a mandatory fire rated separation required in IBC Section 508.2.4 Exception 2, which states, "dwelling and sleeping units shall be separated from accessory occupancies that are contiguous to them." The user is then sent to Section 420, which refers to Section 708 for fire partitions (walls) and Section 711 for horizontal assemblies (floor/ceiling). The fire resistance rating of dwelling and sleeping unit walls or ceilings will be either thirty minutes or one hour, but in no case, even with sprinklers, is the fire-rating less than thirty minutes. When the accessory occupancies are contiguous with the dwelling and sleeping units, the thirty minute or

one hour fire partition separations would apply. Even if the accessory occupancies are not considered contiguous, R and I occupancies are highly compartmented by nature and the requirements for the type of construction add to the accessory occupancy separation which means the majority of the walls, floors and ceilings have a fire rating. While Section 508.2.4 appears to have a broad brush of no separation of accessory occupancies, it goes beyond for the noted residential (R-1,R-2, R-3 and I-1) occupancies.

The IBC permits unseparated accessory occupancies, unsprinklered, up to 10 percent of the floor area, but holds the same limitation for a fully sprinklered (NFPA 13 or NFPA 13R) residential (R-1,R-2, R-3 and I-1) occupancy but mandates (at least) thirty minute fire partitions for the same accessory occupancy. If an unsprinklered mercantile occupancy can have a coffee shop with no separation, why would the same coffee shop in a sprinklered residential occupancy be required to have a fire partition in the surrounding walls and ceiling? If the argument is held to just NFPA 13R, which does not have area increases in the IBC, then the unsprinklered building actually has less of a burden. This philosophy is flawed and unjust. An increase to the percentage of accessory occupancies protected by NFPA 13R (and naturally NFPA 13) for residential (R-1,R-2, R-3 and I-1) occupancies is warranted. The committee in Memphis commented that 50 percent was too much. This public comment cuts the original proposal in half, to 25 percent. If an unsprinklered accessory area can have 10 percent without a fire barrier, then surely a fully sprinklered R or I-1 occupancy can have 15 percent more? This concept is not completely unheard of, as another code, used internationally also, NFPA 5000, Section 6.2.1.5 permits up to 25 percent.

NFPA 13R has developed the design criteria for protection of accessory occupancies to complement and correlate to the IBC accessory occupancies over the past several cycles. Accessory occupancies in the IBC are treated as areas outside the dwelling units in NFPA 13R. Many accessory areas are light hazard with fire loading similar to light hazard in NFPA 13 and are referred to NFPA 13 by NFPA 13R for design discharge (minimum of 0.1 gpm/sq.ft. but up to 0.2 gpm/sq.ft. or higher for ordinary hazard occupancies) and design area criteria. Where residential sprinklers are used in lieu of quick response sprinklers in an accessory area, NFPA 13R has increased the design density and limits the area in size to 500 square feet with thirty minute fire rated walls, or in IBC terms, thirty minute fire partitions. In short, the accessory areas in the IBC for R occupancies have the same flow and spacing as they would under NFPA 13.

It is clear that R occupancies and their accessory occupancies have more separation requirements and a higher sprinkler density than an unsprinklered accessory occupancy. Many R-1 and R-2 occupancies are predominately residential as explained in NFPA 13R Section A.1.1. Hotel and apartment accessory occupancies have residential atmospheres with similar fire loading as the dwelling units. If the dwelling units are not limited in area and have a lower sprinkler density in NFPA 13R, why would the accessory occupancy with a higher sprinkler density and closer sprinkler spacing be limited to 10 percent per floor? Would it be acceptable if the first floor was 50 percent of the floor area with a lounge, gift shop, lobby and exercise area separated by (at least) thirty minute walls and ceilings with NFPA 13 criteria? If not, these areas over 10 percent are required by the IBC to be looked at further and either treated as unseparated occupancies or separated occupancies with two hour fire barriers. Separating a fully sprinklered building that has the same unseparated accessory area limits as an unsprinklered building that is already highly compartmented with two hour fire barriers is certainly not justified. Installing a two hour fire barrier to separate residential style fire loading is more restrictive than the one hour fire barrier for stairs or horizontal exits in the means of egress path. The IBC needs to follow up with changes to permit increased accessory sizes to match the needs of the architectural industry and building owners' wants. The fire reports and statistics do not show any negative aspects of allowing increased nonseparated accessory areas for residential buildings.



# G148-15

## 508.3.1

### **Proposed Change as Submitted**

**Proponent:** John Williams, CBO, Chair, representing Adhoc Health Care Committee (AHC@iccsafe.org)

## **2015 International Building Code**

### **Revise as follows:**

**508.3.1 Occupancy classification.** Nonseparated occupancies shall be individually classified in accordance with Section 302.1. The requirements of this code shall apply to each portion of the building based on the occupancy classification of that space. In addition, the most restrictive provisions of Chapter 9 that apply to the nonseparated occupancies shall apply to the total nonseparated occupancy area. Where nonseparated occupancies occur in a *high-rise building*, the most restrictive requirements of Section 403 that apply to the nonseparated occupancies shall apply throughout the *high-rise building*. Where one of the non-separated occupancies is Group I-2, Condition 2, the most restrictive requirements of Sections 407, 509, 712, and Chapter 10 shall apply.

**Reason:** This proposal modifies the requirements for non-separated mixed uses. In a hospital buildings, it is important to maintain some fire protection features throughout the building. Many of these restrictions directly support the defend-in-place concept that hospitals rely on. Specifically included are incidental use areas, protected vertical openings, and hospital-specific egress provisions. As written, the current code would allow an unprotected vertical opening to be located in the non-separated business portion of a hospital building. Arguably you could use the definition of a smoke compartment to challenge this idea, but that argument is very subtle and highlights an inherent conflict in the code. Section 407 is specific to I-2 occupancies, not to building that contain I-2 occupancies. Yet section 407 contains provisions for corridor construction, smoke compartmentation and hospital specific egress provisions that should be maintained to support the defend in place concept.

By clearly stating in this section that there are some concepts in a hospital building that need to be treated differently, we can provide clear direction to designers and enforcers. This code change is needed to be consistent with the requirements of Medicaid and Medicare (CMS.)

The ICC Ad Hoc Committee on Healthcare (AHC) has just completed its 4th year. The AHC was established by the ICC Board to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. This is a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Information on the AHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the AHC effort can be downloaded from the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>.

**Cost Impact:** Will increase the cost of construction  
While this is an increase in construction based on only IBC requirements, however,

this is a requirement from federal CMS in hospitals; therefore, this is not an increase in actual construction cost.

G148-15 : 508.3.1-  
WILLIAMS4243

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** This proposal is unclear as to the extent of application in a mixed occupancy building. If the Group I-2 occupancy is only a minor portion of the building, it could impose significant requirements onto the balance of the building.

An attempt to modify the language for clarity wasn't found to be clarifying. The text doesn't say whether the language 'shall apply' is meant to apply throughout the building or throughout a smaller area.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : John Williams, CBO, representing Adhoc Healthcare Committee (AHC@iccsafe.org) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

**508.3.1 Occupancy classification.** Nonseparated occupancies shall be individually classified in accordance with Section 302.1. The requirements of this code shall apply to each portion of the building based on the occupancy classification of that space. In addition, the most restrictive provisions of Chapter 9 that apply to the nonseparated occupancies shall apply to the total nonseparated occupancy area. ~~Where nonseparated occupancies occur in a *high-rise building*, the most restrictive requirements of Section 403 that apply to the nonseparated occupancies shall apply throughout the *high-rise building*. Where one of the non-separated occupancies is Group I-2, Condition 2, the most restrictive requirements of Sections 407, 509, 712, and Chapter 10 shall apply.~~

**508.3.1.1 High-rise buildings.** Where nonseparated occupancies occur in a *high-rise building*, the most restrictive requirements of Section 403 that apply to the nonseparated occupancies shall apply throughout the *high-rise building*.

**508.3.1.2 Group I-2, Condition 2 occupancies** Where one of the non-separated occupancies is Group I-2, Condition 2, the most restrictive requirements of Sections 407, 509 and 712 shall apply throughout the fire area containing the Group I-2 occupancy. The most restrictive requirements of Chapter 10 shall apply to the path of egress from the Group I-2 Condition 2 occupancy up to and including the exit discharge.

**Commenter's Reason:** The committee disapproved this change because the scope

was unclear. There were concerns that more restrictive requirements for I-2 would apply throughout the building. This public comment addresses that problem. The revised language clearly states the more restrictive of 407, 509 and 712 apply to the fire area that contains the Group I-2 occupancies. That way incidental use areas, vertical openings, and corridors in other fire areas do not have to comply with the hospital specific requirements. Where and if those fire areas exist is up to the designer or other portions of this code. This gives designers and facilities some flexibility when designing large building where the hospital is only a small portion of the building. The more restrictive requirement of Chapter 10 apply from the Group I-2 occupancy all the way to (and including) the exit discharge. Mean of Egress concepts such as sizing corridor width appropriate for stretcher and bed traffic should apply from the I-2 to the exit discharge because that is where it is needed. The ICC Ad Hoc Committee on Healthcare (AHC) has just completed its 4th year. The AHC was established by the ICC Board to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. This is a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Information on the AHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the AHC effort can be downloaded from the AHC website at: [Adhoc Healthcare](#).

The actual changes between the 2015 IBC and this proposal are limited to the underlined text below. The balance of the change is establishing 2 new subsections using existing text currently in Section 508.3.1.

**508.3.1 Occupancy classification.** Nonseparated occupancies shall be individually classified in accordance with Section 302.1. The requirements of this code shall apply to each portion of the building based on the occupancy classification of that space. In addition, the most restrictive provisions of Chapter 9 that apply to the nonseparated occupancies shall apply to the total nonseparated occupancy area.

**508.3.1.1 High-rise buildings.** Where nonseparated occupancies occur in a high-rise building, the most restrictive requirements of Section 403 that apply to the nonseparated occupancies shall apply throughout the high-rise building.

**508.3.1.2 Group I-2 Condition 2 occupancies.** Where one of the non-separated occupancies is Group I-2, Condition 2, the most restrictive requirements of Sections 407, 509, and 712, ~~and~~ shall apply throughout the fire area containing the Group I-2 occupancy. The most restrictive requirements of Chapter 10 shall apply to the path of egress from the Group I-2 Condition 2 occupancy up to and including the exit discharge.

---

G148-15

# G152-15

## 508.4.4.2 (New)

### **Proposed Change as Submitted**

**Proponent :** Vickie Lovell, InterCode Incorporated, representing Fire Safe North America (vickie@intercodeinc.com)

## **2015 International Building Code**

**Add new text as follows:**

**508.4.4.2 Fire-resistance ratings.** The fire-resistance ratings in Table 508.4 shall not be permitted to be reduced to less than 2 hours in buildings of construction Types IIB, IIIB and VB in Risk Categories III and IV identified in Table 1604.5 where such buildings are any of the following:

1. Assigned to Seismic Design Category C or D in Table 1613.3.5(1).
2. Located in a flood hazard area established in accordance with Section 1612.3.
3. Located in a hurricane-prone region.

**Reason:** As hazard events, both naturally-occurring and man-made, are increasing in number and severity in the United States and around the world, the resilience of communities and the individual buildings within those communities is becoming of vital importance.

A National Institute of Building Sciences Publication (May, 2014) entitled "Moving Forward: Findings and Recommendations", states that "while a long history of building codes has laid the foundation for addressing the impacts of natural and man-made hazards, changes in the frequency and severity of events have brought new challenges — challenges requiring the engagement and support of policymakers. While building codes serve as the minimum requirements for life-safety in the building stock, basic life-safety protections do not fully address building performance requirements to achieve resilience."

Mitigation includes, among other things, fortifying buildings so that they are less likely to be severely damaged or completely destroyed during or immediately after a disaster. It is the key to recovery after a disaster. Mitigation allows individuals and communities to lessen post-disaster disruption and rebuild more quickly. States and cities have started implementing more stringent requirements in specific geographic areas they have designated as higher-risk. The purpose of this series of code changes proposed by Fire Safe North America is to encourage the debate in the code development process to identify what constitutes resilient buildings, and begin to identify issues that will become the basis for "new minimum requirements" for increased building resiliency.

Responding to the challenge of mitigating damage and resilient buildings is an admittedly complex topic. Fire Safe North America proposals are intended to reduce the total reliance of a community and its firefighters on automatic sprinkler systems in disaster-prone areas of the country where the water supply and/or power are likely to be interrupted, or are likely to have water supply system operational issues. The proposals, if approved, will fortify the building code requirements for the most vulnerable buildings to fire - Type IIB, IIIB, and VB construction, which are also classified as Risk Category III and IV in Table 1604.5, and in high-risk, disaster prone regions. The proposals modify the following code requirements in such buildings:

1. Reduce allowable area limits
2. Protect the path of egress by limiting travel distances
3. Protect the path of egress by protecting corridors
4. Require higher fire resistance ratings for occupancy separations

## 5. Require higher fire resistance ratings for building elements

These proposals are intended to be conservative so as to promote community resiliency and disaster mitigation by protecting essential buildings with both sprinkler protection AND fire resistance rated compartmentation. These proposals may be fairly considered to be the proverbial "belt-and suspenders" approach, requiring both sprinkler protection and increased fire resistance rated compartmentation in specific buildings in high risk areas for disasters.

Historically, the code has been written using the general assumption that automatic sprinklers will operate satisfactorily and there will be suitable power for such building operations. Code users design and build assuming that firefighters will be able to respond at their normal efficiencies. In some parts of the country, buildings impacted by disasters may remain without reliable water and/or power for a considerable period of time, well after the occurrence of the disaster. History has shown that increased incidents of fires after a disaster can be more destructive to life and property than the disaster itself. Total reliance on an uninterrupted power and water supply may not be an acceptable risk. It may also be an unacceptable risk to assume that firefighters will be able to respond at their normal efficiencies.

For example, more than 15% of the U.S. population lives in potential major earthquake areas. 41 states and territories have moderate to high risk. There is a real likelihood of power and water supplies being interrupted following a major seismic event, along with the potential for multiple simultaneous structure fires and also building-to-building fire spread. In October 17, 1989, a 7.1 earthquake in Santa Cruz Mountains was responsible for 26 fires in San Francisco, 60 miles from epicenter. There were 67 documented breaks in water mains which effectively eliminated water pressure in the area. On January 19, 1994, a 6.8 earthquake centered in Northridge, CA. There were approximately 100 fire ignitions, 30 to 50 of those were considered significant. The water supply systems in the area were damaged causing low pressure in water distribution. On January 17, 1995, a 6.8 (approx.) earthquake near Kobe, Japan caused 90 fires to start within minutes. 85 spread to adjacent buildings and 10 approached or reached conflagration status. 1,700 water line breaks occurred within a couple of hours. There were 7,000 buildings destroyed by fire alone.

In 1997, the Red River flooded Grand Forks, North Dakota, causing \$3.7 billion in flood losses, and displaced thousands of families and businesses. Similar data of increased fire incidents are available in other flood and hurricane-prone areas.

Undoubtedly, this will increase the cost of construction in these specific buildings. However, a recent FEMA's 2010 report "Mitigation's Value to Society" statement described how mitigation is an investment that needs to be made. A recent study by the NIBS Multihazard Mitigation Council (MMC) identified that each dollar spent on mitigation saves an average of \$4.00 in disaster recovery.

### **Links:**

<http://www.dhSES.ny.gov/oem/mitigation/documents/mitigations-value-to-society.pdf>

The two-volume NIBS MMC study report is available for free download at:

<http://www.nibs.org/index.php/mmc/projects/nhms>

**Cost Impact:** Will increase the cost of construction

This change increases the fire ratings for occupancy separations in essential buildings to the hourly ratings specified for non-sprinklered buildings, and the increased cost will be consistent with the costs for non-sprinklered buildings. The increased costs are only proposed for limited geographic areas.

G152-15 : 508.4.4.2  
(New)-LOVELL5291

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** Items G140-15, G152-15 and G171-15 were considered together. The committee disapproved all three. They were unconvinced by the proponents reason statement that these changes are the way to address buildings in higher risk areas. The committee felt that the imposing of a minimum of 2 hour fire resistive construction to be excessive.

**Assembly Action :**

**None**

---

### **Individual Consideration Agenda**

#### *Public Comment 1:*

**Proponent : William Hall, Portland Cement Association, representing Portland Cement Association (jhall@cement.org) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

#### **2015 International Building Code**

**508.4.4.2 Fire-resistance ratings.** The *fire-resistance ratings* in Table 508.4 shall not be permitted to be reduced to less than 2 hours in buildings of construction Types IIB, IIIB and VB in Risk Categories III and IV identified in Table 1604.5 where such buildings are any of the following:

1. Assigned to Seismic Design Category  $\in$  D, E or  $\notin$  F in Table 1613.3.5(1).
2. Located in a flood hazard area established in accordance with Section 1612.3.
3. Located in a hurricane-prone region.

**Commenter's Reason:** As per the original reasoning statement, to satisfy the intent of the building code which not only addresses life safety, but also property protection and the welfare of the general public, the proposal as submitted is warranted. However, to introduce this "broad reaching" concept into the ICC consensus process this modification limits these criteria to Risk Categories III (substantial risk to human life) and IV (essential facilities) and additionally is limited to seismic category D or greater.

#### *Public Comment 2:*

**Proponent : Vickie Lovell, InterCode Incorporated, representing Fire Safe North America (vickie@intercodeinc.com) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

#### **2015 International Building Code**

**508.4.4.2 Fire-resistance ratings.** The *fire-resistance ratings* in Table 508.4 shall not be permitted to be reduced to less than 2 hours in sprinklered buildings of construction Types IIB, IIIB and VB in Risk Categories ~~III and Category~~ IV identified in Table 1604.5 where such buildings are any of the following:

1. Assigned to Seismic Design Category  $\in$  D or  $\notin$  F in ~~Table 1613.3.5(1)~~ accordance with 1613.3.5.

2. Located in a special flood hazard area established in accordance with Section 1612.3.
3. Located in a ~~hurricane-prone~~ the windborne-debris region based on Figure 1609.3(2).

**Exception:** Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1, that are provided with a secondary water supply in accordance with Section 403.3.3, and where fire pumps are protected against interruption of service in accordance with Section 913.

**Commenter's Reason:** The increased fire resistivity required by this proposal is intended to apply ONLY to buildings that are ALL of the following:

- Classified in the highest risk category.
- Located in the highest risk, disaster-prone regions for floods, hurricanes and seismic activity.
- Type IIB, IIIB or VB construction.

It excludes sprinklered buildings that have emergency backup systems for water and power in those regions.

Although the cause is debated, naturally-occurring and man-made disasters are increasing in number and severity in the United States and around the world. That fact is undisputed. The resilience of communities and the individual buildings within those communities is becoming of vital importance.

A National Institute of Building Sciences Publication (May, 2014) entitled "Moving Forward: Findings and Recommendations", states that "while a long history of building codes has laid the foundation for addressing the impacts of natural and man-made hazards, changes in the frequency and severity of events have brought new challenges — challenges requiring the engagement and support of policymakers. While building codes serve as the minimum requirements for life-safety in the building stock, basic life-safety protections do not fully address building performance requirements to achieve resilience."

Mitigation includes, among other things, fortifying buildings so that they are less likely to be severely damaged or completely destroyed during or immediately after a disaster. It is the key to recovery after a disaster. Mitigation allows individuals and communities to lessen post-disaster disruption and rebuild more quickly. States and cities have started implementing more stringent requirements in specific geographic areas they have designated as higher-risk. The purpose of this series of code changes proposed by Fire Safe North America is to encourage the debate in the code development process to identify what constitutes resilient buildings, and begin to identify issues that will become the basis for "new minimum requirements" for increased building resiliency.

Responding to the challenge of mitigating damage and resilient buildings is an admittedly complex topic. Fire Safe North America proposals are intended to reduce the total reliance of a community and its firefighters on automatic sprinkler systems in disaster-prone areas of the country where the water supply and/or power are likely to be interrupted, or are likely to have water supply system operational issues. The proposals, if approved, will fortify the building code requirements for the most vulnerable buildings to fire - Type IIB, IIIB, and VB construction, which are also classified as Risk Category IV in Table 1604.5, and in high-risk, disaster prone regions. The proposals modify the following code requirements in such buildings:

1. Reduce allowable area limits.
2. Protect the path of egress by limiting travel distances.
3. Protect the path of egress by protecting corridors.
4. Require higher fire resistance ratings for occupancy separations.
5. Require higher fire resistance ratings for building elements.

These proposals are intended to be conservative so as to promote community resiliency and disaster mitigation by protecting essential buildings with both sprinkler

protection AND fire resistance rated compartmentation. These proposals may be fairly considered to be the proverbial "belt and suspenders" approach, requiring both sprinkler protection and increased fire resistance rated compartmentation in specific buildings in high risk areas for disasters.

Historically, the code has been written using the general assumption that automatic sprinklers will operate satisfactorily and there will be suitable power for such building operations. Code users design and build assuming that firefighters will be able to respond at their normal efficiencies. In some parts of the country, buildings impacted by disasters may remain without reliable water and/or power for a considerable period of time, well after the occurrence of the disaster. History has shown that increased incidents of fires after a disaster can be more destructive to life and property than the disaster itself. Total reliance on an uninterrupted power and water supply may not be an acceptable risk. It may also be an unacceptable risk to assume that firefighters will be able to respond at their normal efficiencies.

For example, more than 15% of the U.S. population lives in potential major earthquake areas. 41 states and territories have moderate to high risk. There is a real likelihood of power and water supplies being interrupted following a major seismic event, along with the potential for multiple simultaneous structure fires and also building-to-building fire spread. On October 17, 1989, a 7.1 earthquake in Santa Cruz Mountains was responsible for 26 fires in San Francisco, 60 miles from epicenter. There were 67 documented breaks in water mains which effectively eliminated water pressure in the area. On January 19, 1994, a 6.8 earthquake centered in Northridge, CA. There were approximately 100 fire ignitions, 30 to 50 of those were considered significant. The water supply systems in the area were damaged causing low pressure in water distribution. On January 17, 1995, a 6.8 (approx.) earthquake near Kobe, Japan caused 90 fires to start within minutes. 85 spread to adjacent buildings and 10 approached or reached conflagration status. 1,700 water line breaks occurred within a couple of hours. There were 7,000 buildings destroyed by fire alone.

In 1997, the Red River flooded Grand Forks, North Dakota, causing \$3.7 billion in flood losses, and displaced thousands of families and businesses. Similar data of increased fire incidents are available in other flood and hurricane-prone areas.

Undoubtedly, this will increase the cost of construction in these specific buildings. However, a recent FEMA's 2010 report "Mitigation's Value to Society" statement described how mitigation is an investment that needs to be made. A recent study by the NIBS Multihazard Mitigation Council (MMC) identified that each dollar spent on mitigation saves an average of \$4.00 in disaster recovery.

Links:

<http://www.dhSES.ny.gov/oem/mitigation/documents/mitigations-value-to-society.pdf>

The two-volume NIBS MMC study report is available for free download at:

<http://www.nibs.org/index.php/mmc/projects/nhms>

Cost Impact: Will increase the cost of construction

This code change proposal will increase the cost of construction of some building types.

---

**G152-15**

# G157-15

## TABLE 509, 509.5 (New), 716.5

### Proposed Change as Submitted

Proponent : Jay Wallace, The Boeing Company, representing The Boeing Company (jay.s.wallace@boeing.com)

## 2015 International Building Code

Revise as follows:

TABLE 509  
INCIDENTAL USES

ROOM OR AREA	PROVIDE SEPARATION AND/OR PROTECTION
Furnace room where any piece of equipment is over 400,000 Btu per hour input	1 hour or <del>provide</del> automatic sprinkler system <sup>a</sup>
Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower	1 hour or <del>provide</del> automatic sprinkler system <sup>a</sup>
Refrigerant machinery room	1 hour or <del>provide</del> automatic sprinkler system <sup>a</sup>
Hydrogen fuel gas rooms, not classified as Group H	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies
Incinerator rooms	2 hours and <del>provide</del> automatic sprinkler system <sup>a</sup>
Paint shops, not classified as Group H, located in occupancies other than Group F	2 hours; or 1 hour and <del>provide</del> automatic sprinkler system <sup>a</sup>
In Group E occupancies, laboratories and vocational shops not classified as Group H	1 hour or <del>provide</del> automatic sprinkler system <sup>a</sup>
In Group I-2 occupancies, laboratories not classified as Group H	1 hour and <del>provide</del> automatic sprinkler system <sup>a</sup>
In ambulatory care facilities, laboratories not classified as Group H	1 hour and <del>provide</del> automatic sprinkler system <sup>a</sup>
Laundry rooms over 100 square feet	1 hour or <del>provide</del> automatic sprinkler system <sup>a</sup>
In Group I-2, laundry rooms over 100 square feet	1 hour
Group I-3 cells and Group I-2 patient rooms equipped with padded surfaces	1 hour
In Group I-2, physical plant maintenance shops	1 hour
In ambulatory care facilities or Group I-2 occupancies, waste and linen collection rooms with containers that have an aggregate volume	1 hour

of 10 cubic feet or greater	
In other than ambulatory care facilities and Group I-2 occupancies, waste and linen collection rooms over 100 square feet	1 hour or provide automatic sprinkler system <sup>a</sup>
In ambulatory care facilities or Group I-2 occupancies, storage rooms greater than 100 square feet	1 hour
Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons for flooded lead-acid, nickel cadmium or VRLA, or more than 1,000 pounds for lithium-ion and lithium metal polymer used for facility standby power, emergency power or uninterruptable power supplies	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.
Electrical dry-type transformer rated over 112 ½ kVA <u>Exception: Where transformers with Class 155 or higher insulation systems are separated from combustible material by a fire-resistant, heat-insulating barrier or by not less than 6 feet horizontally and 12 feet vertically or completely enclosed except for ventilating openings.</u>	1 hour <sup>d</sup>
Electrical dry-type transformer rated over 35,000 volts.	1 hour and automatic sprinkler system <sup>a b d</sup>
Electrical oil-insulated transformer of any rating.	1-hour and automatic sprinkler system and oil containment serving all if multiple transformers; sized to contain the volume of oil in the largest unit <sup>a b c d</sup>

a. Automatic sprinkler system in accordance with Section 903.3.1.1.

b. An alternative automatic fire extinguishing system provided in lieu of an automatic sprinkler system in accordance with Section 903.1.1.

c. See the National Electric Code (NFPA 70) for detailed construction requirements and exceptions regarding oil and other liquid insulated transformers.

d. See additional requirements in Section 509.5.

For SI: 1 square foot = 0.0929 m<sup>2</sup>, 1 pound per square inch (psi) = 6.9 kPa, 1 British thermal unit (Btu) per hour = 0.293 watts, 1 horsepower = 746 watts, 1 gallon = 3.785 L, 1 cubic foot = 0.0283 m<sup>3</sup>.

**Add new text as follows:**

**509.5 Electrical room construction.** Rooms containing transformers shall be in accordance with Section 1010.1.10 and with this section.

1. Where Table 509 only specifies separation without protection for rooms containing electrical transformers, the room shall be in accordance with the following:

1.1. Ventilation openings in surrounding building exterior walls or roof/ceiling construction shall be provided with an open area of not less than 3 square inches for each kVA of transformer capacity or not less than 1 square foot, whichever is greater. Ventilation openings shall be in accordance with Table 716.5 and protected with screens, grating or louvers. The ventilation openings shall be located in accordance with one of the following:

1.1.1. Provide 100 percent of ventilation openings near the ceiling of the electrical room; or

1.1.2. Provide half of the ventilation openings at the floor and the balance of the openings near the ceiling of the electrical room.

1.2. Electrical rooms shall be provided at the exterior of the building to allow natural ventilation in accordance with Item 1, or

shall be provided with mechanical ventilation located and sized to effectively control the transformer full load losses and limit the temperature rise in accordance with the transformer rating.

1.3. Where the room is located at slab on grade condition, a concrete slab not less than 4 inches thick shall be provided.

1.4. Doors from the electrical room shall swing in the direction of egress travel away from the electrical room. Doors shall be self-closing to a latched and locked position and shall be provided with panic hardware.

1.5. Pipes and ducts, other than those that service the electrical room, shall not pass through an electrical room.

2. Where table 509 specifies both separation and protection for rooms containing electrical transformers, the room shall be in accordance with Item 1 and the following:

2.1. the room shall be separated and protected as specified in Table 509 or it shall be located in an enclosure constructed of concrete or similar materials providing not less than three hour fire-resistance-rated construction with opening protectives provided in accordance with Table 716.5.

**TABLE 716.5  
OPENING FIRE PROTECTION ASSEMBLIES, RATINGS AND MARKINGS**

TYPE OF ASSEMBLY	REQUIRED WALL ASSEMBLY RATING (hours)	MINIMUM FIRE DOOR AND FIRE SHUTTER ASSEMBLY RATING (hours)	DOOR VISION PANEL SIZE <sup>b</sup>	FIRE-RATED GLAZING MARKING DOOR VISION PANEL <sup>d</sup>	MINIMUM SIDELIGHT/TRANSOM ASSEMBLY RATING (hours)		FIRE-RATED GLAZING MARKING SIDELIGHT/TRANSOM PANEL	
					Fire protection	Fire resistance	Fire protection	Fire resistance
Fire walls and fire barriers having a required fire-resistance rating greater than 1 hour	4	3	See Note b	D-H-W-240	Not Permitted	4	Not Permitted	W-240
	3	3 <sup>a</sup>	See Note b	D-H-W-180	Not Permitted	3	Not Permitted	W-180
	2	1 1/2	100 sq. in.	≤100 sq. in. = D-H-90 >100 sq. in. = D-H-W-90	Not Permitted	2	Not Permitted	W-120
	1 1/2	1 1/2	100 sq. in.	≤100 sq. in. = D-H-90 >100 sq. in. = D-H-W-90	Not Permitted	1 1/2	Not Permitted	W-90
Enclosures for shafts, interior exit stairways and interior exit ramps.	2	1 1/2	100 sq. in.	≤100 sq. in. = D-H-90 >100 sq. in. = D-H-T-W-90	Not Permitted	2	Not Permitted	W-120
Horizontal exits in fire walls <sup>e</sup>	4	3	100 sq. in.	≤100 sq. in. = D-H-180 >	Not Permitted	4	Not Permitted	W-240

				100 sq. in.=D-H-W-240				
	3	3 <sup>a</sup>	100 sq. in.	≤100 sq. in. = D-H-180 > 100 sq. in.=D-H-W-180	Not Permitted	3	Not Permitted	W-180
Fire barriers having a required fire-resistance rating of 1 hour: Enclosures for shafts, exit access stairways, exit access ramps, interior exit stairways, and interior exit ramps; <u>electrical room enclosure</u> and exit passageway walls	1	1	100 sq. in. <sup>c</sup>	≤100 sq. in. = D-H-60 >100 sq. in.= D-H-T-W-60	Not Permitted	1	Not Permitted	W-60
					<b>Fire protection</b>			
Other fire barriers	1	3/4	Maximum size tested	D-H		3/4		D-H
Fire partitions: Corridor walls	1	1/3 <sup>b</sup>	Maximum size tested	D-20		3/4 <sup>b</sup>		D-H-OH-45
	0.5	1/3 <sup>b</sup>	Maximum size tested	D-20		1/3		D-H-OH-20
Other fire partitions	1	3/4	Maximum size tested	D-H-45		3/4		D-H-45
	0.5	1/3	Maximum size tested	D-H-20		1/3		D-H-20

TYPE OF ASSEMBLY	REQUIRED WALL ASSEMBLY RATING (hours)	MINIMUM FIRE DOOR AND FIRE SHUTTER ASSEMBLY RATING (hours)	DOOR VISION PANEL SIZE <sup>b</sup>	FIRE-RATED GLAZING MARKING DOOR VISION PANEL <sup>d</sup>	MINIMUM SIDELIGHT/TRANSOM ASSEMBLY RATING (hours)		FIRE-RATED GLAZING MARKING SIDELIGHT/TRANSOM PANEL	
					Fire protection	Fire resistance	Fire protection	Fire resistance
Exterior walls	3	1 1/2	100 sq. in. <sup>b</sup>	≤100 sq. in. = D-H-90 >100 sq. in. = D-H-W-90	Not Permitted	3	Not Permitted	W-180

	2	1 1/2	100 sq. in. <sup>b</sup>	≤100 sq. in. = D-H-90 >100 sq. in.= D-H-W-90	Not Permitted	2	Not Permitted	W-120
					<b>Fire protection</b>			
	1	3/4	Maximum size tested	D-H-45		3/4	D-H-45	
Smoke barriers					<b>Fire protection</b>			
	1	1/3	Maximum size tested	D-20		3/4	D-H-OH-45	

For SI: 1 square inch = 645.2 mm.

- a. Two doors, each with a fire protection rating of 1 1/2 hours, installed on opposite sides of the same opening in a fire wall, shall be deemed equivalent in fire protection rating to one 3-hour fire door.
- b. Fire-resistance-rated glazing tested to ASTM E 119 in accordance with Section 716.2 shall be permitted, in the maximum size tested.
- c. Except where the building is equipped throughout with an automatic sprinkler and the fire-rated glazing meets the criteria established in Section 716.5.5.
- d. Under the column heading "Fire-rated glazing marking door vision panel," W refers to the fire-resistance rating of the glazing, not the frame.
- e. See Section 716.5.8.1.2.1.

**Reason:** Construction requirements for electrical room floors, walls, ceilings, openings, hardware etc are contained in the National Electrical Code (NFPA 70). The terms used are not the same as those in the IBC. The differences can cause confusion for the design professional which can result in costly mistakes or unnecessary features. This proposal brings the building related requirements in the NEC into the IBC in terms consistent with the rest of the building element nomenclature to add clarity and consistency.

While editing Table 509 the term "provide" was deleted from its positions before "automatic sprinkler system" and inserted at the top of the table so that all enclosures and protection would be provided as intended by the table.

For the automatic sprinkler system requirement, a footnote was added for consistency with the rest of the IBC regarding automatic sprinkler systems.

**Cost Impact:** Will not increase the cost of construction

There is no intended change in construction requirements. Hopefully this proposal will clarify some confusing language and reduce costs.

G157-15 : T509-WALLACE5085

### Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** The provisions for electrical rooms found in the National Electrical Code (NEC) can be an unwelcome surprise if not found early in the design process. Many feel that because there are construction aspects to the NEC requirements that they should be located in the IBC. The committee found that the proposal and the version contained in the proposed modification still contained too many unclear performance elements. The lack of specificity would result in uneven compliance. Among the questions raised was coordination with the requirements for multiple exits from an electrical room.

**Assembly Motion:**

**As Modified**

**Online Vote Results:**

**Failed**

Support: 20.63% (65) Oppose: 79.37% (250)

Assembly Action :

None

**Online Floor Modification:**

**509.5 Electrical room construction.** Rooms containing transformers shall be in accordance with Section 1010.1.10 and with this section.

1. Where Table 509 only specifies separation without protection for rooms containing electrical transformers, the room shall be in accordance with the following:

1.1. Ventilation openings in surrounding building exterior walls or roof/ceiling construction shall be provided with an open area of not less than 3 square inches for each kVA of transformer capacity or not less than 1 square foot, whichever is greater. Ventilation openings shall be in accordance with Table Sections 705.8 and 716.5 and protected with screens, grating or louvers. The ventilation openings shall be located in accordance with one of the following:

1.1.1. Provide 100 percent of ventilation openings near the ceiling of the electrical room; or

1.1.2. Provide half of the ventilation openings at the floor and the balance of the openings near the ceiling of the electrical room.

1.2. Electrical rooms shall be provided at the exterior of the building to allow natural ventilation in accordance with Item 1, or shall be provided with mechanical ventilation located and sized to effectively control the transformer full load losses and limit the temperature rise in accordance with the transformer rating.

1.3. Where the room is located at slab on grade condition, a concrete slab not less than 4 inches thick shall be provided.

1.4. Doors from the electrical room shall swing in the direction of egress travel away from the electrical room. Doors shall be self-closing to a latched and locked position and shall be provided with panic hardware.

1.5. Pipes and ducts, other than those that service the electrical room, shall not pass through an electrical room.

2. Where Table 509 specifies both separation and protection for rooms containing electrical transformers, the room shall be in accordance with Item 1 and the following:

2.1. ~~The room shall be separated and protected as specified in Table 509 or it shall be located in~~ an enclosure constructed of concrete or similar materials providing not less than ~~three~~one hour fire-resistance-rated construction ~~with and protected as specified in Table 509, or without protection the enclosure shall be increased to 3 hour fire-resistance-rated construction.~~ In either case, opening protectives shall be provided in accordance with Table Sections 705.8 and 716.5.

**Individual Consideration Agenda**

*Public Comment 1:*

Proponent : **Jay Wallace, The Boeing Company, representing The Boeing Company (jay.s.wallace@boeing.com) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

**2015 International Building Code**

**TABLE 509  
INCIDENTAL USES**

ROOM OR AREA	PROVIDE SEPARATION AND/OR PROTECTION
Furnace room where any piece of equipment is over 400,000 Btu per hour input	1 hour or automatic sprinkler system
Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower	1 hour or automatic sprinkler system
Refrigerant machinery room	1 hour or automatic sprinkler system

Hydrogen fuel gas rooms, not classified as Group H	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies
Incinerator rooms	2 hours and automatic sprinkler system
Paint shops, not classified as Group H, located in occupancies other than Group F	2 hours; or 1 hour and automatic sprinkler system
In Group E occupancies, laboratories and vocational shops not classified as Group H	1 hour or automatic sprinkler system
In Group I-2 occupancies, laboratories not classified as Group H	1 hour and automatic sprinkler system
In ambulatory care facilities, laboratories not classified as Group H	1 hour and automatic sprinkler system
Laundry rooms over 100 square feet	1 hour or automatic sprinkler system
In Group I-2, laundry rooms over 100 square feet	1 hour
Group I-3 cells and Group I-2 patient rooms equipped with padded surfaces	1 hour
In Group I-2, physical plant maintenance shops	1 hour
In ambulatory care facilities or Group I-2 occupancies, waste and linen collection rooms with containers that have an aggregate volume of 10 cubic feet or greater	1 hour
In other than ambulatory care facilities and Group I-2 occupancies, waste and linen collection rooms over 100 square feet	1 hour or automatic sprinkler system
In ambulatory care facilities or Group I-2 occupancies, storage rooms greater than 100 square feet	1 hour
Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons for flooded lead-acid, nickel cadmium or VRLA, or more than 1,000 pounds for lithium-ion and lithium metal polymer used for facility standby power, emergency power or uninterruptable power supplies	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.
Electrical dry-type transformer rated over 112 ½ kVA Exception: Where transformers with Class 155 or higher insulation systems are separated from combustible material by a fire-resistant, heat-insulating barrier or by not less than 6 feet horizontally and 12 feet vertically or completely enclosed	1 hour <sup>d</sup>

except for ventilating openings.	
Electrical dry-type transformer rated over 35,000 volts.	1-hour and automatic sprinkler system <sup>a b d</sup>
Electrical oil-insulated transformer of any rating.	1-hour and automatic sprinkler system and oil containment serving all if multiple transformers; sized to contain the volume of oil in the largest unit <sup>a b c d</sup>
Electrical installations and transformers	See the National Electrical Code (NEC) NFPA 70 Section 110.26 through 110.34 and Section 450.8 through the end of Article 450 for protection and/or separation requirements

- a. Automatic sprinkler system in accordance with Section 903.3.1.1.
- b. An alternative automatic fire extinguishing system provided in lieu of an automatic sprinkler system in accordance with Section 903.1.1.
- c. See the National Electric Code (NFPA 70) for detailed construction requirements and exceptions regarding oil and other liquid-insulated transformers.
- d. See additional requirements in Section 509.5.

For SI: 1 square foot = 0.0929 m<sup>2</sup>, 1 pound per square inch (psi) = 6.9 kPa, 1 British thermal unit (Btu) per hour = 0.293 watts, 1 horsepower = 746 watts, 1 gallon = 3.785 L, 1 cubic foot = 0.0283 m<sup>3</sup>.

**509.5 Electrical room construction.** Rooms containing transformers shall be in accordance with Section 1010.1.10 and with this section.

1. Where Table 509 only specifies separation without protection for rooms containing electrical transformers, the room shall be in accordance with the following:

1.1. Ventilation openings in surrounding building exterior walls or roof/ceiling construction shall be provided with an open area of not less than 3 square inches for each kVA of transformer capacity or not less than 1 square foot, whichever is greater. Ventilation openings shall be in accordance with Table 716.5 and protected with screens, grating or louvers. The ventilation openings shall be located in accordance with one of the following:

1.1.1. Provide 100 percent of ventilation openings near the ceiling of the electrical room; or

1.1.2. Provide half of the ventilation openings at the floor and the balance of the openings near the ceiling of the electrical room.

1.2. Electrical rooms shall be provided at the exterior of the building to allow natural ventilation in accordance with Item 1, or shall be provided with mechanical ventilation located and sized to effectively control the transformer full-load losses and limit the temperature rise in accordance with the transformer rating.

1.3. Where the room is located at slab-on-grade condition, a concrete slab not less than 4 inches thick shall be provided.

1.4. Doors from the electrical room shall swing in the direction of egress travel away from the electrical room. Doors shall be self-closing to a latched and locked position and shall be provided with panic hardware.

1.5. Pipes and ducts, other than those that service the electrical room, shall not pass through an electrical room.

2. Where Table 509 specifies both separation and protection for rooms containing electrical transformers, the room shall be in accordance with Item 1 and the following:

2.1. The room shall be separated and protected as specified in Table 509 or it shall be located in an enclosure constructed of concrete or similar materials providing not less than three-hour fire-resistance-rated construction with opening protectives provided in accordance with Table 716.5.

**Commenter's Reason:** The original proposal attempted to bring all the building type (location, walls, doors, floors, hardware, ventilation, etc) requirements from the NEC and place them in the IBC where they could easily be found by those responsible to design the building. The conditions and the requirements vary so much depending on the electrical equipment that it became too cumbersome to address all the combination of protectives. This modification accomplishes the main two objectives of the original proposal: 1) make users aware that important requirements are in another publication and 2) make the requirements consistent with IBC language, format and references. Item one is accomplished by pointing to the sections in the NEC where

space and building type requirements are located. Item two is accomplished by placing the pointer in Table 509 Incidental Uses where separations are required to be Fire Barriers and protectives are required per Section 716 including Table 716.5.

The original change proposed to Table 716.5 is still appropriate where it clarifies that electrical room enclosures are of the more stringent Fire Barrier type with increased opening protectives than is required for other fire barriers.

The added Section 509.5 Electrical room construction is dropped completely so that users will still have to access the NEC for such requirements.

The footnotes a-d to Table 509 are also all removed. Footnote "a" is already covered in Section 509. Footnote "b" is already covered in Section 903. Footnote "c" is covered by this modification to Table 509 and Footnote "d" is not needed since Section 509 is deleted in its entirety.

The committee stated that there was a lack of clarity regarding the number of exits required from an electrical room. This proposal does not attempt to clarify that point however, it is clear that the NEC does NOT require two exits from an electrical room, it only requires due to certain conditions, two paths of egress from an electrical Working Space, the area in front of the equipment concerned. The room size and configuration may achieve two egress points from the Working Space while only having one exit from the room. Given some room sizes and configuration, two exit doors from the room may be the only way to achieve two egress points from the Working Space when required by the NEC.

As developers of the Building Code, we own these building type requirements; they rightfully belong in the IBC. This proposal bridges the gap between two unique publications that use some of the same terms with different meanings, to bring clarity and consistency to the building design professional.

# G158-15

509.3

## **Proposed Change as Submitted**

**Proponent :** Stephen Thomas, Colorado Code Consulting, LLC, representing Colorado Chapter ICC (sthomas@coloradocode.net)

### **2015 International Building Code**

**Delete without substitution:**

~~**509.3 Area limitations.** Incidental uses shall not occupy more than 10 percent of the *building area* of the *story* in which they are located.~~

**Reason:** This section is unenforceable. Many incidental uses exceed 10% of the floor area of the story they are located in. In some cases the entire building can be an incidental use. For example, a heating plant for a hospital will have boilers that exceed the limits of Table 509, but are located in a single building. Another example is the location of laboratories and vocational classrooms in a high school. It is very common to have these areas exceed 10% of the area of the story that they are located in. The interpretation from ICC is to classify these areas as a different occupancy. This is contrary to the requirements of Section 509.2. It states "Incidental uses shall not be individually classified in accordance with Section 302.1". If you do classify the chemistry laboratory as an occupancy, it would be classified as a Group E occupancy (assuming the amount of chemicals do not exceed the MAQ's in Section 307.1). Therefore, if the lab exceeds 10% of the story area, there would be no separation between the lab and an adjacent classroom. However, if it was less than 10%, a separation would be required. This doesn't make sense. By deleting the area limitation, this problem is resolved and a separation would be required regardless of the size.

**Bibliography:** None

**Cost Impact:** Will not increase the cost of construction  
There is no cost impact from this change. This change is a clarification of the existing language back to the way it was in the 2006 IBC.

G158-15 : 509.3-  
THOMAS3647

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The complete elimination of an area limitation of these facilities was not acceptable. If they are larger than 10% of a story there is other avenues in the code to address these uses.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent :** Stephen Thomas, Colorado Code Consulting, LLC, representing Colorado Chapter ICC (sthomas@coloradocode.net)

## requests Approve as Submitted.

**Commenter's Reason:** We disagree with the committee. There are two requirements in Section 509 for incidental uses that relate to this issue. The first is Section 509.2. It states "Incidental uses shall not be individually classified in accordance with Section 302.1.I". The testimony at the committee hearings was that if the incidental use exceeds 10%, you classify it as a separate occupancy. This section is mandatory and does not allow the space to be classified as an occupancy. There is also a problem with how to classify some of these uses. It is not clear what occupancy you would classify a battery rooms, incinerator rooms or furnace rooms. The intent of this section is to provide separation between a more hazardous use than the rest of the building. If you classify the space as a different occupancy, the building can be classified as a non-separated occupancy and no type of separation would be required between the occupancies. You would also have the same issue if you classify the room (school chemistry laboratory) as an occupancy. There would be not any separation between the more hazardous use and the adjacent occupancy because they would be the same occupancy.

In addition, if the space was considered a different occupancy, it will create a conflict for health care facilities in NFPA 101. That standard does not restrict the size of incidental uses in health care facilities. It requires a separation, regardless of the size of the space.

This section is also not clear. It limits the size of the incidental use to 10% of the story area. It is not clear whether this is an aggregate of incidental uses or each individual space. For example, in a health care facility, there are several incidental uses throughout each story. The code does not give us enough direction to deal with this issue.

We feel the better option is to delete the 10% limitation for these more hazardous uses. Therefore, a separation would be required, no matter how large the space is. This provides protection from the occupants of the building from the inherent hazards associated with an incidental use.

---

**G158-15**

# G160-15

## 510.2

### **Proposed Change as Submitted**

**Proponent :** Marshall Klein, representing NMHC

## **2015 International Building Code**

**Revise as follows:**

**510.2 Horizontal building separation allowance.** A building shall be considered as separate and distinct buildings for the purpose of determining area limitations, continuity of *fire walls*, limitation of number of *stories* and type of construction where all of the following conditions are met:

1. The buildings are separated with a *horizontal assembly* having a *fire-resistance rating* of not less than 3 hours. Where vertical offsets are provided as part of a horizontal assembly, the vertical offset and the structure supporting the vertical offset shall have a fire-resistance rating of not less than 3 hours..
2. The building below the *horizontal assembly* is of Type IA construction.
3. *Shaft, stairway, ramp* and escalator enclosures through the *horizontal assembly* shall have not less than a 2-hour *fire-resistance rating* with opening protectives in accordance with Section 716.5.

**Exception:** Where the enclosure walls below the *horizontal assembly* have not less than a 3-hour *fire-resistance rating* with opening protectives in accordance with Section 716.5, the enclosure walls extending above the *horizontal assembly* shall be permitted to have a 1-hour *fire-resistance rating*, provided:

1. The building above the *horizontal assembly* is not required to be of Type I construction;
  2. The enclosure connects fewer than four *stories*; and
  3. The enclosure opening protectives above the *horizontal assembly* have a *fire protection rating* of not less than 1 hour.
4. The building or buildings above the *horizontal assembly* shall be permitted to have multiple Group A occupancy uses, each with an *occupant load* of less 300, or Group B, M, R or S occupancies.
  5. The building below the *horizontal assembly* shall be protected throughout by an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, and shall be permitted to be any occupancy allowed by this code except Group H.
  6. The maximum *building height* in feet (mm) shall not exceed the limits set forth in Section 504.3 for the building having the smaller allowable height as measured from the *grade plane*.

**Reason:** It is very common for projects built under the provisions of Section 510.2 to include vertical offsets to accommodate elevation changes for a particular site or different ceiling heights within a story. Currently, the code provides no guidance on

how to deal with these vertical offset assemblies, and the designer and code official are left to handle them as alternative methods or modifications in accordance with Chapter 1. This change will provide appropriate regulations for ensuring that any vertical offset maintains a proper and continuous fire rating for both the horizontal and vertical portions of the separation, plus it ensures that the supporting structure for a vertical offset has an equivalent fire-resistance rating.

It is worth noting that the code deals with this issue in reverse for firewalls by permitting horizontal offsets in those vertical assemblies, as described in Section 706.1 of the 2012 IBC Commentary, which states "...offsetting two vertical sections of firewalls is permissible as long as the required fire resistance rating and structural stability are maintained."

**Cost Impact:** Will not increase the cost of construction

There should be no impact on the cost of construction because the intent of this proposal is simply to state how the current provisions should be applied. However, there will be a decrease in administrative costs for cases where an alternative method or modification would have previously been necessary as part of the compliance path.

G160-15 : 510.2-  
KLEIN4223

---

## **Public Hearing Results**

**Committee Action:** **Approved as Submitted**

**Committee Reason:** The proposal provides design flexibility to address unique sites. It is consistent with other provisions of the code where you support rated construction with structure of like rating. This is not about gaming the intent of this provision, but solves a real life design issue in hillside locations. The word 'horizontal' can be a hang up in the reasonable solutions to a steep site.

**Assembly Action :** **None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : Lee Kranz, City of Bellevue, representing Washington Association of Building Officials Technical Code Development Committee (lkranz@bellevuewa.gov) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

**510.2 Horizontal building separation allowance.** A building shall be considered as separate and distinct buildings for the purpose of determining area limitations, continuity of *fire walls*, limitation of number of *stories* and type of construction where all of the following conditions are met:

1. The buildings are separated with a *horizontal assembly* having a *fire-resistance rating* of not less than 3 hours. Where vertical

offsets are provided as part of a horizontal assembly, the vertical offset ~~and the structure supporting the vertical offset shall have~~ be constructed as a *fire barrier* in accordance with Section 707, with a fire-resistance rating of not less than 3 hours.-

2. The building below the *horizontal assembly* is of Type IA construction.
3. *Shaft, stairway, ramp* and escalator enclosures through the *horizontal assembly* shall have not less than a 2-hour *fire-resistance rating* with opening protectives in accordance with Section 716.5.

**Exception:** Where the enclosure walls below the *horizontal assembly* have not less than a 3-hour *fire-resistance rating* with opening protectives in accordance with Section 716.5, the enclosure walls extending above the *horizontal assembly* shall be permitted to have a 1-hour *fire-resistance rating*, provided:

1. The building above the *horizontal assembly* is not required to be of Type I construction;
  2. The enclosure connects fewer than four *stories*; and
  3. The enclosure opening protectives above the *horizontal assembly* have a *fire protection rating* of not less than 1 hour.
4. The building or buildings above the *horizontal assembly* shall be permitted to have multiple Group A occupancy uses, each with an *occupant load* of less 300, or Group B, M, R or S occupancies.
  5. The building below the *horizontal assembly* shall be protected throughout by an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, and shall be permitted to be any occupancy allowed by this code except Group H.
  6. The maximum *building height* in feet (mm) shall not exceed the limits set forth in Section 504.3 for the building having the smaller allowable height as measured from the *grade plane*.

**Commenter's Reason:** Vertical offsets in 3 hour horizontal assemblies are a reality that are being addressed with alternate methods per Chapter 1. The Washington Association of Building Officials Technical Code Development Committee supports approval of the original code change. This public comment improves the original code change by clarifying that the vertical offsets must be designed and constructed as a fire barriers to address such issues as continuity, supporting construction, area limitations for openings in the wall and fire-resistance rating requirements for openings.

---

G160-15

# G161-15

## 510.2

### **Proposed Change as Submitted**

**Proponent :** Homer Maiel, PE, CBO, representing ICC Tri-Chapter (Peninsula, East Bay, Monterey Bay) (hmaiel@gmail.com)

## **2015 International Building Code**

### **Revise as follows:**

**510.2 Horizontal building separation allowance.** A building shall be considered as separate and distinct buildings for the purpose of determining area limitations, continuity of *fire walls*, limitation of number of *stories* and type of construction where all of the following conditions are met:

1. The buildings are separated with a *horizontal assembly* having a *fire-resistance rating* of not less than 3 hours. The horizontal assembly shall be of Type 1 construction.
2. The building below the *horizontal assembly* is of Type IA construction.
3. *Shaft, stairway, ramp* and escalator enclosures through the *horizontal assembly* shall have not less than a 2-hour *fire-resistance rating* with opening protectives in accordance with Section 716.5.

**Exception:** Where the enclosure walls below the *horizontal assembly* have not less than a 3-hour *fire-resistance rating* with opening protectives in accordance with Section 716.5, the enclosure walls extending above the *horizontal assembly* shall be permitted to have a 1-hour *fire-resistance rating*, provided:

1. The building above the *horizontal assembly* is not required to be of Type I construction;
  2. The enclosure connects fewer than four *stories*; and
  3. The enclosure opening protectives above the *horizontal assembly* have a *fire protection rating* of not less than 1 hour.
4. The building or buildings above the *horizontal assembly* shall be permitted to have multiple Group A occupancy uses, each with an *occupant load* of less 300, or Group B, M, R or S occupancies.
  5. The building below the *horizontal assembly* shall be protected throughout by an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, and shall be permitted to be any occupancy allowed by this code except Group H.
  6. The maximum *building height* in feet (mm) shall not exceed the limits set forth in Section 504.3 for the building having the smaller allowable height as measured from the *grade plane*.

**Reason:** Existing language is unclear and can be interpreted to only require the greater type of construction below the 3 hour separation. The addition of the sentence to Item 1 makes it clear that the 3 hour horizontal assembly can not be constructed out of a type of construction that is different than the lower building.

**Cost Impact:** Will not increase the cost of construction  
This code change does not create a new requirement. It clarifies existing code language to prevent misinterpretation of the code

G161-15 : 510.2-  
MAIEL5410

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The proposal's intent is to clarify the construction of the horizontal assembly. The committee suggested that a better clarification if the change remains in Item 1 is to simply say the horizontal assembly is made of non-combustible materials. An alternative suggested was to move the construction requirement for the horizontal assembly to be located in Item 2 - which specifies the construction of the building below the horizontal assembly.

**Assembly Motion:**

**As Submitted**

**Online Vote Results:**

**Failed**

Support: 43.73% (129) Oppose: 56.27% (166)

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : William Hall, Portland Cement Association, representing Portland Cement Association (jhall@cement.org) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

**510.2 Horizontal building separation allowance.** A building shall be considered as separate and distinct buildings for the purpose of determining area limitations, continuity of *fire walls*, limitation of number of *stories* and type of construction where all of the following conditions are met:

1. The buildings are separated with a *horizontal assembly* having a *fire-resistance rating* of not less than 3 hours. ~~The horizontal assembly shall be of Type 1 construction.~~
2. The horizontal assembly and the building below the horizontal assembly, is of Type IA construction.
3. *Shaft, stairway, ramp* and escalator enclosures through the *horizontal assembly* shall have not less than a 2-hour *fire-resistance rating* with opening protectives in accordance with Section 716.5.

**Exception:** Where the enclosure walls below the *horizontal assembly* have not less than a 3-hour *fire-resistance rating* with opening protectives in accordance with Section 716.5, the enclosure walls extending above the *horizontal assembly* shall be permitted to have a 1-hour *fire-*

*resistance rating*, provided:

1. The building above the *horizontal assembly* is not required to be of Type I construction;
  2. The enclosure connects fewer than four *stories*; and
  3. The enclosure opening protectives above the *horizontal assembly* have a *fire protection rating* of not less than 1 hour.
4. The building or buildings above the *horizontal assembly* shall be permitted to have multiple Group A occupancy uses, each with an *occupant load* of less 300, or Group B, M, R or S occupancies.
  5. The building below the *horizontal assembly* shall be protected throughout by an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, and shall be permitted to be any occupancy allowed by this code except Group H.
  6. The maximum *building height* in feet (mm) shall not exceed the limits set forth in Section 504.3 for the building having the smaller allowable height as measured from the *grade plane*.

**Commenter's Reason:** Needs modification

## *Public Comment 2:*

**Proponent : Homer Maiel, PE, CBO, representing ICC Tri-Chapter (Peninsula, East Bay, Monterey Bay) (hmaiel@gmail.com) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

## **2015 International Building Code**

**510.2 Horizontal building separation allowance.** A building shall be considered as separate and distinct buildings for the purpose of determining area limitations, continuity of *fire walls*, limitation of number of *stories* and type of construction where all of the following conditions are met:

1. The buildings are separated with a *horizontal assembly* having a *fire-resistance rating* of not less than 3 hours. ~~The horizontal assembly shall be of Type 1 construction.~~
2. The building below, including the *horizontal assembly*, is of Type IA construction.
3. *Shaft, stairway, ramp* and escalator enclosures through the *horizontal assembly* shall have not less than a 2-hour *fire-resistance rating* with opening protectives in accordance with Section 716.5.

**Exception:** Where the enclosure walls below the *horizontal assembly* have not less than a 3-hour *fire-resistance rating* with opening protectives in accordance with Section 716.5, the enclosure walls extending above the *horizontal assembly* shall be permitted to have a 1-hour *fire-resistance rating*, provided:

1. The building above the *horizontal assembly* is not required to be of Type I construction;
2. The enclosure connects fewer than four *stories*; and

3. The enclosure opening protectives above the *horizontal assembly* have a *fire protection rating* of not less than 1 hour.
4. The building or buildings above the *horizontal assembly* shall be permitted to have multiple Group A occupancy uses, each with an *occupant load* of less 300, or Group B, M, R or S occupancies.
5. The building below the *horizontal assembly* shall be protected throughout by an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, and shall be permitted to be any occupancy allowed by this code except Group H.
6. The maximum *building height* in feet (mm) shall not exceed the limits set forth in Section 504.3 for the building having the smaller allowable height as measured from the *grade plane*.

**Commenter's Reason:** In Mephis, the committee suggested that instead of adding a sentence to condition 1, condition 2 to be modified accordingly. The modification here is reflecting the committee's concern.

---

**G161-15**

# G162-15

## 510.2

### **Proposed Change as Submitted**

**Proponent :** Mark Nowak, representing Steel Framing Alliance  
(mnowak@steelframing.org)

## **2015 International Building Code**

### **Revise as follows:**

**510.2 Horizontal building separation allowance.** A building shall be considered as separate and distinct buildings for the purpose of determining area limitations, continuity of *fire walls*, limitation of number of *stories* and type of construction where all of the following conditions are met:

1. The buildings are separated with a *horizontal assembly* having a *fire-resistance rating* of not less than 3 hours.
2. The building below the *horizontal assembly* is of Type IA construction.
3. *Shaft, stairway, ramp* and escalator enclosures through the *horizontal assembly* shall have not less than a 2-hour *fire-resistance rating* with opening protectives in accordance with Section 716.5.

**Exception:** Where the enclosure walls below the *horizontal assembly* have not less than a 3-hour *fire-resistance rating* with opening protectives in accordance with Section 716.5, the enclosure walls extending above the *horizontal assembly* shall be permitted to have a 1-hour *fire-resistance rating*, provided:

1. The building above the *horizontal assembly* is not required to be of Type I construction;
  2. The enclosure connects fewer than four *stories*; and
  3. The enclosure opening protectives above the *horizontal assembly* have a *fire protection rating* of not less than 1 hour.
4. The building or buildings above the *horizontal assembly* shall be permitted to have multiple Group A occupancy uses, each with an *occupant load* of less 300, or Group B, M, R or S occupancies.
  5. The building below the *horizontal assembly* shall be protected throughout by an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, and shall be permitted to be any occupancy allowed by this code except Group H.
  6. The maximum *building height* in feet (mm) shall not exceed the limits set forth in Section 504.3 for the building having the smaller allowable height as measured from the *grade plane*.
  7. Type V buildings with combustible structural elements above the horizontal separation shall be separated from lot lines and buildings on the same lot by not less than 50 feet.

**Reason:** This proposal will correct an inconsistency in the code that currently permits a shorter separation distance to adjacent buildings or lot lines for buildings

with combustible structural elements versus similar sized Type IIA noncombustible buildings. The code currently requires Type IIA residential buildings, constructed with non-combustible structural elements, to be separated by a minimum of 50 feet in Section 510.6 but no such separation is required for combustible Type V construction in Section 510.2 despite the higher risk with combustible construction.

More builders and designers are using Section 510 of the code to extend the allowable height and stories of residential buildings that use combustible structural framing. Marketing efforts such as WoodWorks, a program with support of the major wood and timber associations, government agencies, and other partners, continue to promote the use of combustible framing in mid-rise residential and other structures through Section 510 of the code. It is questionable that the code ever intended combustible framing to be used at heights now being constructed -- the allowable heights have crept upward with allowances for sprinkler systems added since the requirements in Section 510 first entered buildings codes.

Fires from mid-rise Type V buildings with combustible structural elements are epidemic and catastrophic yet there is little protection required of them relative to their risk versus other types of construction. This proposal will correct this deficiency in the code to better protect nearby buildings and provide firefighters clearance between buildings to address fires during and after construction. The 50 foot separation is a minimum requirement that will ensure at least the same level of protection for buildings with combustible structures as for similar Type IIA buildings when additional height is obtained through use of the special provisions in Section 510 of the code. The 50 foot distance in this proposal extends the precedent set in the code for buildings with lower risk (Type IIA) of similar size to the higher-risk combustible framing used in Type V buildings under Section 510 of the code.

In addition to providing a separation for finished buildings, the proposed 50 foot distance will also improve the ability of firefighters to address fires during construction. In just the past few years, a significant number of major fires throughout the United States in buildings under construction have occurred in four story and higher buildings that have used combustible framing members. During the construction phase, these buildings are extremely vulnerable due to the lack of operational active and passive fire resistance. These fires have damaged nearby properties, required major street closures including interstates, and occupied fire fighting resources to the extent that other areas were left under-protected for extended periods. As recently as December of 2014, a major fire in Los Angeles with five stories of wood framing over a two story concrete podium not only resulted in millions of dollars in damage to the building under construction, but also damaged adjacent buildings. The seven-story apartment building known as the DaVinci was a complete loss after the fire that was fueled by the five stories of wood frame construction. More than 250 firefighters were dispatched to the scene. Flames were visible for miles and the structure's wooden frame forced the closure of northbound Harbor (110) Freeway. Computers and cubicles melted in neighboring buildings. Hundreds of thick windows cracked as well. This is typical of the risk that these buildings pose to themselves and surrounding properties. Some examples of other larger recent fires that illustrate the risk of combustible framing in mid-rise buildings include:

1. Monroe Apartments, Portland, OR August 8, 2013
2. Student Apartments, Kingston, Ontario, CAN December 17, 2013
3. 550 East and 500 South, Salt Lake City, UT February 9, 2014
4. Commercial Building, Roxbury, MA March 3, 2014
5. Mission Bay Project, San Francisco, CA March 11, 2014
6. Axis Apartments, Houston, TX, March 25, 2014
7. Beacon Street, Boston, MA, March 27, 2014
8. Gables Upper Rock, Rockville, MD, April 1, 2014
9. SE Tech Center Drive, Vancouver, WA, June 19, 2014
10. Victoria Commons, Kitchener, Ontario, CAN, July 22, 2014
11. Apollo Way, Madison, WI, August 8, 2014

**Cost Impact:** Will increase the cost of construction

This proposal will impact the cost of construction for some buildings on small lots or in urban or other high density areas where the separation distance is especially important for increased safety. Depending on the size of the lot and proposed building, some buildings may not be able to meet the separation distance and will need to be reduced in height or number of stories. In some cases, non-combustible construction could be used to protect the building if the setback cannot be achieved. Any added costs in these few buildings can be offset by the added safety and lower insurance costs throughout construction and the life of the structure. Building with reasonable separation distances will also be offset by the avoided costs of rebuilding after fires and avoidance of damage to nearby properties and occupants.

G162-15 : 510.2-  
NOWAK3654

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee found the proposal to be a flawed concept.

Section 510.6 has its own set of parameters for the special design allowed under that section; 510.2 also has its unique set of parameters for special design. It is irrelevant to try to take one element of the criteria of Section 510.6 and superimpose it into 510.2.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : William Hall, Portland Cement Association, representing Portland Cement Association (jhall@cement.org) requests Approve as Submitted.**

**Commenter's Reason:** Regardless of where the requirements come from, the fact still remains that a large, overly tall combustible building is only required to provide 30 ft. of separation distance, while a similiar building with non-combustible construction is required to provide 50 ft.

### *Public Comment 2:*

**Proponent : Mark Nowak, representing Steel Framing Allaince requests Approve as Submitted.**

**Commenter's Reason:** Approval of this public comment will correct a deficiency and inconsistency in the code whereby combustible buildings of the same or similar height as non-combustible buildings can be built with little to no setback from property lines while the non-combustible building is required to have a 50-foot setback. The committee's disapproval statement indicates that Sections 510.2 and 510.6 were developed with their own unique requirements and parts of them can't be applied to the other sections. However, this fails to acknowledge several key points:

1. The special provisions in Section 510 were developed before additional height

allowances for sprinklers were introduced. Very few people anticipated the use of combustible materials at the heights we now see and the large number of related catastrophic fires that are occurring

2. The vast majority of fires in the past several years in Type V buildings using the additional height provisions in Section 510 have occurred during construction. A reasonable separation distance during construction is one of the most important steps in resisting the spread of fire to adjacent buildings and other property. It is also critical for access by fire fighters.
3. Since the submission of the original proposal, there have been multiple fires this year in wood-framed apartment buildings where the buildings have been occupied. A January 2015 fire in Edgewater, NJ burned an occupied building to the ground that had already burned down during its original construction years earlier. A June 2015 fire in Columbia County, GA also occurred in an occupied retirement apartment complex. The fires in buildings under construction and occupied buildings demonstrate that further protection is required. The proposed 50 foot separation distance is one step that can help prevent future property damage and save lives.

The recent fires in occupied multi-story buildings of Type V construction brings the total number of documented catastrophic fires in these types of buildings to over a dozen in just the past two years. These fires demonstrate that there is a need to re-evaluate the current code language and take steps to prevent these events in the future. Although now is not the time to further loosen standards but to strengthen our codes, even those proponents of taller wood buildings see the need for a minimum separation distance between the building and the lot line or adjacent buildings. In proposal G165-15, the proponents for further expanding the allowable height for wood framed buildings included a 50 foot setback in their proposal.

Under the existing language in the code a Type IIA (non-combustible framing), R-1 building under Section 510.6 that is five stories can actually be shorter in height than an R-1 building of Type V (combustible framing) construction over a concrete podium built under Section 510.2, depending on the ceiling height of the buildings. Yet the Type IIA (noncombustible) building would require a 50 foot setback and the combustible building would not. This inconsistency in the code will be corrected by this proposal while also addressing the threat from fires during and after construction from combustible construction in Group R buildings. The 50 foot setback in this proposal extends the precedent set in the code for group R-1 and R-2 buildings of noncombustible construction to Type V buildings that pose a much higher fire risk.

---

**G162-15**

# G165-15

## 510.12 (New)

### **Proposed Change as Submitted**

**Proponent :** Dennis Richardson, representing American Wood Council (drichardson@awc.org)

## **2015 International Building Code**

**Add new text as follows:**

### **510.12 Group R-1 and R-2 buildings of Type IV HT construction.**

The height and story limitations for buildings of Type IV HT construction in Groups R-1 and R-2 shall be increased to nine stories and 100 feet (30 480 mm) provided all of the following are met:

1. The heavy timber construction shall be not less than 2 hour fire resistance rated and protected with a minimum of one layer of 5/8 inch type X gypsum board on all interior wall surfaces and a minimum of two layers of 5/8 inch type X gypsum board on the ceiling side of all horizontal assemblies.
2. The building has a fire separation distance of not less than 50 feet (15 240 mm).
3. The exits are segregated in an area enclosed by a cross laminated timber 2 hour fire-resistance-rated walls protected with two layers of 5/8 inch type X gypsum board or equivalent on the room side of all walls adjacent to the enclosure.
4. Wall and ceiling assemblies with multiple layers of gypsum board shall be permitted to be furred with noncombustible or fire retardant treated wood furring provided the cavity is filled with securely attached mineral wool insulation and at least one layer of gypsum board is directly attached to the heavy timber structure. Multiple layers of gypsum board shall be permitted to be secured to furring as required in Section 722.5.1.2.1 or Figure 722.5.1(3) for columns and in Section 722.3.2.5 for walls. Attachment of multi layer gypsum wallboard to ceilings shall be permitted to be as required for single assemblies attached to resilient channels in Table 721.1(3) and the base layer or layers shall be permitted to be attached directly to the Type IV structure as required by item 21 of Table 721.1(3). Other attachment shall be permitted to be used if specified by the manufacturer and approved.
5. Buildings of Type IV construction shall be permitted to be located over a building with multiple occupancy groups meeting the provisions of Section 510.2.

**Reason:** Reason: Mass timber products such as cross-laminated timber (CLT) provide the structural and fire resistance capabilities necessary for taller buildings. This proposal closely follows the special occupancy for Type IIA structures in 510.6 as a model. Existing section 510.6 allows 1 fire resistance rated light frame steel buildings to be up to 9 stories and 100 feet tall when surrounded by 50 feet. This proposal goes to the same height and number of stories but requires additional fire resistance (2 hours instead of 1 hour throughout). The CLT is provided with minimum

protection throughout the inside with 5/8" type X gypsum (one layer at all interior walls and two layers at all ceilings) and the overall assembly must meet the 2 hour E119 fire resistance test. In addition to the mass timber protected with type X gypsum board, the building is provided with an NFPA 13 sprinkler system throughout and is surrounded by yards of 50 feet. The entire fire and life safety "package" is at least equivalent to what is currently specified in 510.6.

The current section 510.6 applying to one hour type II construction requires stairways to be segregated into areas separated by a two hour fire wall. Although the existing language for 510.6 is somewhat unclear, this can be accomplished in the current 510.6 with a two hour fire wall separating the one hour type II building into two fire areas, each with stairways or with separate fire walls at each exit enclosure.

A fire wall is not necessary with this proposal since the entire building is two hour fire resistance rated construction. Stairways are provided with additional protection with a second layer of 5/8" type x gypsum board on the fire side of rooms adjacent to the stairways. Provisions are included to allow the installation of resilient channels and spaces filled with insulation for sound attenuation. Additionally it is noted this building may incorporate a 3 hour separation below if additional occupancies are to be housed in a podium below.

This code change helps address concerns about climate change by allowing a taller building to utilize cross laminated timber which sequesters carbon and has low embodied energy. There is much focus on the future utilization of this building system. The following link gives examples of CLT buildings throughout the world.

<http://www.rethinkwood.com/tall-wood-survey>

In addition the following link provides access to any additional information regarding this or other code changes proposed by American Wood Council.

<http://www.awc.org/Code-Officials/2015-IBC-Code-Changes/>

**Cost Impact:** Will not increase the cost of construction

This new code section provides a new option for construction that is not currently available.

**G165-15 : 510.12 (New)-  
RICHARDSON4889**

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee was uncomfortable that the proposal would allow a more than doubling of the height (Number of stories) allowed in buildings of Type IV construction which would result in an overall increase in fuel load.. The committee recognized the hard work that went into the proposal and that it included provisions intended to assure that a 9 story wood frame building was a safe one.

The committee felt that the text requiring 50 foot separation was unclear whether it applied to one side, or all sides, of the building. While testimony was clear that the proposal required 2 hour construction, and such construction would need to comply with the tested assemblies, the committee was unclear regarding the testing of these assemblies and hoped the language would be stronger regarding such. The Chapter 7 references appear to be to specific attachments to steel and concrete framing and not to wood as would occur in these buildings. There was discomfort that such a building could be the upper building of a podium structure under Section 510.2. Finally, it was suggested that the exit separations be allowed to be of other materials in addition to the CLT as currently listed in the proposal.

**Assembly Motion:**

**As Modified**

**Online Vote Results:**

**Failed**

Support: 12.11% (43) Oppose: 87.89% (312)

**Online Floor Modification:**

**510.12 Group R-1 and R-2 buildings of Type IV HT construction.** The height and story limitations for buildings of Type IV HT construction in Groups R-1 and R-2 shall be increased to nine stories and 100 feet (30 480 mm) provided all of the following are met:

1. The ~~heavy timber~~load bearing construction shall be of solid heavy timber elements not less than 2 hour fire resistance rated and protected with a minimum of one layer of 5/8 inch type X gypsum board on all interior wall surfaces and a minimum of two layers of 5/8 inch type X gypsum board on the ceiling side of all horizontal assemblies.
2. The building has a fire separation distance of not less than 50 feet (15 240 mm).
3. The exits are segregated in an area enclosed by a cross laminated timber 2 hour fire-resistance-rated walls protected with two layers of 5/8 inch type X gypsum board or equivalent on the room side of all walls adjacent to the enclosure.
4. Wall and ceiling assemblies with multiple layers of gypsum board shall be permitted to be furred with noncombustible or fire retardant treated wood furring provided the cavity is filled with securely attached mineral wool insulation and at least one layer of gypsum board is directly attached to the heavy timber structure. Only the layers of gypsum board applied directly to the heavy timber in accordance with the applicable E119 or UL 263 test report shall be utilized to meet the 2 hour required fire resistance rating. Multiple layers of gypsum board shall be permitted to be secured to furring as required in Section 722.5.1.2.1 or Figure 722.5.1(3) for columns and in Section 722.3.2.5 for walls. Attachment of multi layer gypsum wallboard to ceilings shall be permitted to be as required for single assemblies attached to resilient channels in Table 721.1(3) and the base layer or layers shall be permitted to be attached directly to the Type IV structure as required by item 21 of Table 721.1(3). Other attachment shall be permitted to be used if specified by the manufacturer

and approved.

5. Buildings of Type IV construction shall be permitted to be located over a building with multiple occupancy groups meeting the provisions of Section 510.2.

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : Stephen DiGiovanni, representing myself (sdigiovanni@clarkcountynv.gov) requests Approve as Modified by this Public Comment.**

#### **Modify as Follows:**

### **2015 International Building Code**

#### **510.12 Group R-1 and R-2 buildings of Type IV HT construction.**

The height and story limitations for buildings of Type IV HT construction in Groups R-1 and R-2 shall be increased to nine stories and 100 feet (30 480 mm) provided all of the following are met:

1. The heavy timber construction shall be not less than 2 hour fire resistance rated, as tested without any gypsum board attached, and further protected with a minimum of one layer of 5/8 inch type X gypsum board on all interior wall surfaces and a minimum of two layers of 5/8 inch type X gypsum board on the ceiling side of all horizontal assemblies.
2. The building has a fire separation distance of not less than 50 feet (15 240 mm).
3. The exits are segregated in an area enclosed by a cross laminated timber 2 hour fire-resistance-rated walls protected with two layers of 5/8 inch type X gypsum board or equivalent on the room side of all walls adjacent to the enclosure.
4. Wall and ceiling assemblies with multiple layers of gypsum board shall be permitted to be furred with noncombustible or fire retardant treated wood furring provided the cavity is filled with securely attached mineral wool insulation and at least one layer of gypsum board is directly attached to the heavy timber structure. Multiple layers of gypsum board shall be permitted to be secured to furring as required in Section 722.5.1.2.1 or Figure 722.5.1(3) for columns and in Section 722.3.2.5 for walls. Attachment of multi layer gypsum wallboard to ceilings shall be permitted to be as required for single assemblies attached to resilient channels in Table 721.1(3) and the base layer or layers shall be permitted to be attached directly to the Type IV structure as required by item 21 of Table 721.1(3). Other attachment shall be permitted to be used if specified by the manufacturer and approved.
5. Buildings of Type IV construction shall be permitted to be located

over a building with multiple occupancy groups meeting the provisions of Section 510.2.

**Commenter's Reason:** It is not clear from the original language whether the heavy timber achieves the two-hour rating test result with or without the gypsum attached. This comment seeks to clarify that the heavy timber assembly must achieve a two hour rating without the benefit of the gypsum during the test, resulting in added protection when the gypsum is added for construction.

## *Public Comment 2:*

**Proponent : Dennis Richardson, American Wood Council, representing American Wood Council (drichardson@awc.org) requests Approve as Modified by this Public Comment.**

**Replace Proposal as Follows:**

### **2015 International Building Code**

#### **510.12 Group R-1 and R-2 buildings of two-hour Type IV**

**construction** The height limitation for buildings of Type IV construction containing Groups R-1 and R-2 occupancies shall be increased to nine stories and 100 feet (30 480 mm) where the building is separated by not less than 50 feet (15 240 mm) from any other building on the lot and from adjacent lot lines or lot lines on the opposite sides of public ways, provided all of the following are met:

1. All load bearing structural elements shall be heavy timber complying with Sections 602.4 and 2304.11; and have a fire resistance rating of not less than 2 hours in accordance with Section 703.2.
2. The interior surfaces of all heavy timber walls and ceilings shall be covered by two layers of 5/8" Type X gypsum board, with all edges of the face layer offset 18 inches from those of the base layer. The base layer shall be attached with 1.75 inch #6 Type S drywall screws at 12 inches on center in both directions and the face layer shall be attached with 2.25 inch #6 Type S drywall screws at 12 inches on center in both directions offset from the screws in the base layer by 6 inches in both directions. One layer of 5/8 inch Type X gypsum sheathing shall be attached to the outside of the exterior heavy timber walls with minimum 1 3/4 inch galvanized roofing nails 12 inches on center each way and 6 inches on center at all joints or ends. All panel edges shall be attached with drywall screws or roofing nails located at least 1.5 inches but not more than 2 inches from the panel edge.

**Commenter's Reason:** This code change proposal would create a special provision option for 2-hour Fire Resistance-rated heavy timber construction that is similar to section 510.6 for Group R-1 and R-2 buildings of Type IIA construction. Due to the positive environmental characteristics, including low embodied energy and carbon sequestration, there is a strong desire to utilize mass timber, including Cross Laminated Timber (CLT), for multistory residential construction. The American Wood Council (AWC) is committed to finding technical solutions to make the desired use of mass timber a realistic option, for taller and larger buildings, that is both safe and environmentally-friendly.

This proposal requires all load bearing elements to have a 2-hr fire resistance rating which is more conservative than Section 510.6 which permits light frame steel

construction with a 1-hr fire resistance rating at the same height and number of stories. This proposal adds two layers of 5/8" type X gypsum board on the inside surfaces of heavy timber ceiling and wall elements and one layer of 5/8" type X gypsum sheathing on outside surfaces of exterior heavy timber walls.

Both existing Section 510.6 and proposed Section 510.12 require NFPA 13 sprinklers throughout (by virtue of being Group R occupancies over 4 stories) and all of the applicable high-rise provisions come into play when a floor is located 75 feet above fire department access.

In order to place 9 stories in 100 feet, both existing Section 510.6 and proposed Section 510.12 rely on a level of compartmentalization formed by the rated walls and floors between units to provide a high level of safety. In this proposal compartmentalization is provided by 2-hr fire resistance rated floors/ceiling assemblies and all bearing walls.

The following Q and A addresses specific questions that came up on the initial proposal that have been addressed in this public comment proposal:

Q1 Why is this proposed in special provisions instead of coming up with a new type of construction?

A By the 2021 code cycle, at least one or two new types of construction that deal with heavy timber elements having a specific fire resistance rating in addition to meeting the required prescriptive size and detailing requirements will be proposed. In the mean time, it is entirely consistent with many of the special provisions found in Section 510 to take an existing type of construction and then add additional fire resistance or detailing. Even Section 510.6, which this change is modeled after, has a first floor construction with a 90 minute rating instead of the one hour rating required for Type IIA.

Q2 There were concerns the 50 foot yard requirement in the original proposal applied only on one side.

A This was never the intent but we can see how some people arrived at that interpretation of the language. The language in this public comment proposal is expanded to make sure it is clear 50 feet minimum is required between the building and other structures, property lines and even the other buildings across the street.

Q3 There were concerns that 2-hr light frame walls using fire retardant-treated wood (FRTW) could be used for exterior bearing walls in the original proposal.

A This public comment proposal has been changed to be clear the bearing elements are required to be 2 hour fire resistance rated heavy timber.

Q4 There were concerns that fire could spread from floor to floor because exterior walls were not required to have gypsum board or sheathing.

A This public comment specifies a minimum 5/8" Type X layer of gypsum sheathing on the outside of exterior walls that are built out of heavy timber. Nonbearing walls could be FRTW lumber or noncombustible in addition to heavy timber.

Q5 There were concerns about non-standard time and temperature curves from residential furnishings that could be a problem for the CLT because of the early onset of high temperatures at the time of flashover.

A Research by Carleton University has looked at various combinations of CLT walls covered with gypsum board. Links to the AWC webpage with links to test results is at the end of this reason statement. The American Wood Council is preparing full scale tests to be completed prior to the Long Beach hearings. Use the following link to view this and other information on our website: <http://www.awc.org/Code-Officials/2015-IBC-Code-Changes/>

The two hour construction in this public comment proposal is much more robust from a fire standpoint than the one hour rated steel in Section 510.6.

Q6 Do 2 hour stair and shaft enclosures have to be constructed out of CLT?

A No, 2 hour assemblies constructed of other materials may be used. When stairs enclosures are constructed of CLT this proposal calls for a minimum of two layers of 5/8" type X gypsum on both sides. This is highly conservative.

Q7 How are ratings established?

A Like any other structural fire resistance rating found in table 601, the fire resistance rating is established through the various options found in Section 703.2.

Q8 Why is there a minimum amount of gypsum board or gypsum sheathing specified?

A Exposed timber can be calculated up to two hours structural fire resistance without any gypsum board. With the thickness of panels required for a multistory building it is likely many of the walls and floor/ceilings may be able to meet 2 hour fire resistance on their own. The fire service has expressed concerns about the potential contribution of the building structural elements to the fire fuel load. While the maximum height is only 15 feet taller than would be allowed with regular Type IV heavy timber construction, to be conservative a minimum amount of gypsum is specified on all heavy timber interior and exterior walls, and for ceilings. The attachment of this gypsum wall and sheathing board must be per the listing if it is part of a tested assembly, but is also specified in the code text for the minimum layers of gypsum that are required in the case when they are not part of the listing (in the case where the listing for 2-hours does not contain the minimum gypsum specified by this code text).

Q9 How are penetrations handled?

A Penetrations are required to pass the same requirements and tests as all walls of any material in any building when walls serve as a fire walls, fire barriers, fire partitions, or other separations required by the code.

Q10 Is there loading during fire tests?

A There have been a number of fire tests of heavy timber sized elements designed for the required fire resistance rating. Recent tests of SCL beams and CLT walls have also been conducted under various load ratios to validate fire models permitted in the IBC 722.1 through reference to the National Design Specification (NDS). In 2013, AWC funded the test of a 10' CLT wall that was loaded with 87,000 pounds. This is comparable to the typical design load for these walls. With the exceptional structural capacity of these immense panels, in most cases, it is impossible in most cases to load tests to maximum capacity, just like large walls constructed of other heavy materials. More important is verifying that the test load is within the range of design (actual) load to be experienced by the building element.

Q How can I find out more about CLT and this code change?

A Paste this web address in your browser to reach a page on the American Wood Council website listing the latest information on testing and references for this and other AWC code change proposals:

<http://www.awc.org/Code-Officials/2015-IBC-Code-Changes/>

Information pertaining to this code change G 165-15 includes the following web links or information:

1. 1. AWC CLT Test Report: WP-1950
2. Other CLT tests
3. ARUP report on Fire Safety of Tall Wood Buildings
4. NIST draft white paper: Fire Resistance of Timber Structures, March 31, 2014
5. Carleton University CLT research papers

---

**G165-15**

# G166-15

## 511.1 (New), 511.2 (New), 511.3 (New), 511.4 (New), Proposed Change as Submitted

**Proponent :** Carl Wren, City of Austin, Texas, representing City of Austin, Texas; Planning and Development Review Department and the Austin Fire Department (carl.wren@austintexas.gov)

### 2015 International Building Code

**Add new text as follows:**

#### **SECTION 511—OCCUPIED ROOFS**

**511.1 General.** Buildings with occupied roofs shall comply with this section and with Sections 903.2.1.6 and 1006.3, as applicable.

**511.2 Enclosure of occupied roof.** Occupied roofs, rooftops, and rooftop decks that are provided with walls or overhead weather protection, whether permanent or temporary, shall be considered a story for the purpose of determining the required construction type for the structure or building, for applying the requirements of Section 403, for applying Chapter 10, and for applying the thresholds for fire safety features required by Sections 903, 905, and 907.

#### **Exceptions:**

1. A parapet complying with Section 705.11 and less than 59 inches in height shall not be considered a wall for the purposes of this section.
2. Occupied roofs with temporary weather protection need not be considered a story when compliant with the fire code and approved by the fire code official for specific events conducted for less than 30 days each and the aggregate duration of such events is less than 90 days per 12 month period.

**511.3 Fall protection.** Occupied roofs and rooftops shall be provided with guards in accordance with Section 1015.

**511.4 Interstitial spaces.** Where decks or other walking surfaces are constructed above a roof to facilitate rooftop occupancy, the space between the roof/ceiling assembly and the deck or surface shall be constructed in a manner that precludes the accumulation of materials between the roof/ceiling assembly and the deck or walking surface and that prevents the introduction of ignition sources to the space.

**Reason:** Rooftop occupancies are becoming more and more common and the installation of weather protection is creating new or expanded building areas and occupancies. Some of the issues have been addressed in the 2015 code in section 903.2.1.6 and in section 1006.3, but the issue of increased building heights and added occupancies is more prevalent and more varied than the current code can adequately address.

The exceptions to proposed section 511.2 would allow for flexibility in dealing with unplanned and unexpected circumstances that might cause a truly short term need for weather protection of a roof while still requiring appropriate protection of occupancies that will be ongoing and create internal spaces on rooftops.

**Cost Impact:** Will increase the cost of construction

The proponent wished to say that the code change would not increase construction costs, but the change really addresses measures and practices being used that actually create additional building area. One cannot necessarily build code compliant walls and ceilings for the same price as setting up tents or membrane structures on the tops of multi-story buildings that would not normally be allowed to include combustible construction. This code change simply acknowledges that these areas need to be treated as enclosed spaces and this will of necessity increase some construction costs.

G166-15 : 511 (New)-  
WREN5657

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** This proposal was the last of a group of proposals trying to address occupied roofs. The committee felt that the introduction of temporary use into this added to the confusion. What the proposal addressed could meet the definition of story and really is no longer an 'occupied roof'. There is no minimum size of the cover which would trigger the requirements. This one, compared to the others did attempt to address fire code issues. There was concern that if this is temporary, that 180 days allowed for temporary uses/structures would be too long a time period. The committee expressed encouragement to the proponents of all the occupied roof proposals to attempt to work together to create a solution for consideration at the public comment hearings.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : Carl Wren, City of Austin, Texas, representing Self (carl.wren@austintexas.gov) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

**511.1 General** ~~Buildings~~ Occupied roofs, rooftops, and rooftop decks that are provided with occupied roofs walls or overhead weather protection shall ~~comply~~ be considered a story. The total number of stories including the enclosed occupied roof shall be applied when:

1. Determining the required construction type for the building,
2. Applying the requirements of section 403,
3. Applying the requirements of Chapter 10, and
4. Applying the thresholds for fire safety features required by Chapter 9.

#### **Exceptions:**

1. Where walls, elements, or structures enclosing the occupied roof areas, other than penthouses constructed in accordance with this section Section 1510.2 and towers, domes, spires, or

cupolas constructed in accordance with Sections 903.2.1.6 Section 1510.5, do not extend more than 48 inches above the surface of the occupied roof.

2. Penthouses constructed in accordance with Section 1510.2 and 1006.3 towers, as applicable, domes, spires, or cupolas constructed in accordance with Section 1510.5.

**511.2 Enclosure of occupied roof** Occupied roofs, rooftops, and rooftop decks that are provided with walls or overhead weather protection, whether permanent or temporary, shall be considered a story for the purpose of determining the required construction type for the structure or building, for applying the requirements of Section 403, for applying Chapter 10, and for applying the thresholds for fire safety features required by Sections 903, 905, and 907.

**Exceptions:**

1. A parapet complying with Section 705.11 and less than 59 5 foot 9 inches in height shall not be considered a wall for the purposes of this section.
2. Occupied roofs with temporary weather protection need not be considered a story where compliant with the fire code and approved by the fire code official for specific events conducted for less than 30 days each and the aggregate duration of such events is less than 90 days per 12 month period.

~~511.4~~ **511.3 Interstitial spaces** *No change to text.*

~~511.3 Fall protection~~

~~Occupied roofs and rooftops shall be provided with guards in accordance with Section 1015.~~

**Commenter's Reason:** The proponent has agreed to joint public comment G24 and will withdraw this public comment if G24 is successful. The number and complexity of requested rooftop occupancies is increasing and there is a need for the code to be more proactive in addressing just what occupancies are acceptable and where they are acceptable. The committee felt that it was unnecessary to introduce temporary uses and this public comment removes the reference to temporary uses as well as the reference to an acceptable time frame for temporary uses.

---

G166-15

# G167-15

## TABLE 601

### Proposed Change as Submitted

**Proponent :** Jonathan Humble, American Iron and Steel Institute, representing American Iron and Steel Institute (jhumble@steel.org)

## 2015 International Building Code

Revise as follows:

**TABLE 601  
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS  
(HOURS)**

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A	B	A	B	HT	A	B
Primary structural frame <sup>f</sup> (see Section 202)	3 <sup>a, <u>b</u></sup>	2 <sup>a, <u>b</u></sup>	1 <sup><u>b</u></sup>	0	1 <sup><u>b</u></sup>	0	HT	1 <sup><u>b</u></sup>	0
Bearing walls									
Exterior <sup>e, f</sup>	3	2	1	0	2	2	2	1	0
Interior	3 <sup>a</sup>	2 <sup>a</sup>	1	0	1	0	1/HT	1	0
Nonbearing walls and partitions	See Table 602								
Exterior									
Nonbearing walls and partitions									
Interior <sup>d</sup>	0	0	0	0	0	0	See Section 602.4.6	0	0
Floor construction and associated									
	2	2	1	0	1	0	HT	1	0

secondary members (see Section 202)									
Roof construction and associated secondary members (see Section 202)	1 <sup>1</sup> / <sub>2</sub> <sup>b</sup>	1 <sup>b,c</sup>	1 <sup>b,c</sup>	0 <sup>c</sup>	1 <sup>b,c</sup>	0	HT	1 <sup>b,c</sup>	0

For SI: 1 foot = 304.8 mm.

- a. Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.
- b. Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members in roof construction shall not be required, including protection of primary structural frame members, roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.
- c. In all occupancies, heavy timber shall be allowed where a 1-hour or less fire-resistance rating is required.
- d. Not less than the fire-resistance rating required by other sections of this code.
- e. Not less than the fire-resistance rating based on fire separation distance (see Table 602).
- f. Not less than the fire-resistance rating as referenced in Section 704.10.

**Reason:** This proposal has been submitted to address multiple interpretations of Table 601 Footnote "b." We have found that although the code membership has supported the exemption for fire protection of structural members 20 feet or more above any floor immediately below that framing, we have found that other entities are interpreting that the primary structural frame is not included in this exemption. This proposal is designed to address that impact by modifying two aspects of Table 601. The first; to add the reference to footnote "b" to the primary structural frame row of fire resistance requirements, and two; to modify Footnote "b" by adding the phases "in roof construction" and "primary structural frame members" to the current list of items now shown.

Multiple attempts have been made in the past to restrict the original intent, however they have all been disapproved. The most recent was code change G139-12. The code development committee's response stated: "The proposal was disapproved as it is the intent of the footnote to allow all structural members to be unprotected. This proposal would only exempt the secondary members." The committee's disapproval of G139-12 was further upheld by the ICC membership during the Final Action Hearings in Portland, OR, October 2012. The public comment to G139-12 challenging the committee's decision was also disapproved by ICC membership.

Further, the reference of structural members applying to all structural members is further reinforced by the definition of "Primary Structural Frame" in Section 202, where it states in the charging sentence the following: "Primary structural frame.

The primary structural frame shall include all of the following structural members...."

These responses to the proposals, along with reasons by the code development committees, and upheld by the ICC membership, are part of the ICC formal public record and constitute the formal position of the ICC on the issue.

**Cost Impact:** Will not increase the cost of construction  
This proposal clarifies the intent of footnote "b" of the Table.

G167-15 : T601-  
HUMBLE4725

---

### **Public Hearing Results**

**Committee Action:** **Approved as Submitted**

**Committee Reason:** There has been confusion and controversy through the years whether the primary frame was included in the exemption from fire protection as specified in footnote b to Table 601. Interpretations have varied. the committee approved this change because they concluded that it reflects the very original intent of the table and this footnote.

**Assembly Action :** **None**

---

### **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : William Hall, Portland Cement Association,  
representing Portland Cement Association (jhall@cement.org)  
requests Disapprove.**

**Commenter's Reason:** This proposal adds confusion rather the remove. Where moment frames extend up to a roof assembly over 20 ft high, at what point does the structural element stop being a vertical element and become a structural component of roof?

G167-15

---

# G170-15

**602.1, TABLE 601, 602.2, 602.3, TABLE 602.4, 602.4, 602.4.1, 602.4.2, 602.4.3, 602.4.4, 602.4.5, 602.4.6, 602.4.6.1, 602.4.6.2, 602.4.7, 602.4.8, 602.4.8.1, 602.4.8.2, 602.4.9, 602.5, 602.2 (New), 603, 603.1, 603.1.1, 603.1.2, 603.1.3**

## **Proposed Change as Submitted**

**Proponent :** Edward Kulik, representing Building Code Action Committee (bcac@iccsafe.org)

## **2015 International Building Code**

### **Revise as follows:**

**602.1 General.** Buildings and structures erected or to be erected, altered or extended in height or area shall be classified ~~in one of the five~~ as Type I, II, III, IV, or V construction types defined in Sections 602.2 through 602.5. The building elements shall be constructed of materials as required for the type of construction in accordance with Sections 602.1.1 through 602.1.5 and shall have a *fire-resistance rating* not less than that specified in Table 601 and exterior walls shall have a *fire-resistance rating* not less than that specified in Table 602. Where required to have a *fire-resistance rating* by Table 601, building elements shall comply with the applicable provisions of Section 703.2. The protection of openings, ducts and air transfer openings in building elements shall not be required unless required by other provisions of this code.

**TABLE 601  
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS  
(HOURS)**

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A	B	A	B	HT	A	B
Primary structural frame <sup>f</sup> (see Section 202)	3 <sup>a</sup>	2 <sup>a</sup>	1	0	1	0	HT	1	0
Bearing walls	3 3 <sup>a</sup>	2 2 <sup>a</sup>	1	0	2	2	2 1/HT	1	0
Exterior <sup>e, f</sup>									
Interior									
Nonbearing									

walls and partitions Exterior	See Table 602								
Nonbearing walls and partitions Interior <sup>d</sup>	0	0	0	0	0	0	See Section <del>602.4.6</del> <u>602.4.1.6</u>	0	0
Floor construction and associated secondary members (see Section 202)	2	2	1	0	1	0	HT	1	0
Roof construction and associated secondary members (see Section 202)	1 <sup>1</sup> /2 <sup>b</sup>	1 <sup>b,c</sup>	1 <sup>b,c</sup>	0 <sup>c</sup>	1 <sup>b,c</sup>	0	HT	1 <sup>b,c</sup>	0

For SI: 1 foot = 304.8 mm.

- a. Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.
- b. Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.
- c. In all occupancies, heavy timber shall be allowed where a 1-hour or less fire-resistance rating is required.
- d. Not less than the fire-resistance rating required by other sections of this code.
- e. Not less than the fire-resistance rating based on fire separation distance (see Table 602).
- f. Not less than the fire-resistance rating as referenced in Section 704.10.

**~~602.2~~ 602.1.2 Types I and II.** Types I and II construction are those types of construction in which the building elements listed in Table 601 are shall be

constructed of noncombustible materials, ~~except as~~ Combustible materials are permitted in accordance with Section ~~603~~ 602.2 and elsewhere in this code.

~~602.3~~ **602.1.3 Type III.** Type III construction is that type of construction in which the exterior walls ~~are~~ shall be constructed of noncombustible materials and the interior building elements are of any material permitted by this code. ~~Fire-retardant-treated wood framing complying~~ Combustible materials within exterior walls are permitted in accordance with Section ~~2303.2 shall be permitted within exterior wall assemblies of a 2-hour rating or less.~~ 602.2 and elsewhere in this code.

**TABLE 602.4 602.1.3  
WOOD MEMBER SIZE EQUIVALENCIES**

MINIMUM NOMINAL SOLID SAWN SIZE		MINIMUM GLUED-LAMINATED NET SIZE		MINIMUM STRUCTURAL COMPOSITE LUMBER NET SIZE	
Width, inch	Depth, inch	Width, inch	Depth, inch	Width, inch	Depth, inch
8	8	6 <sup>3</sup> / 4	8 <sup>1</sup> / 4	7	7 <sup>1</sup> / 2
6	10	5	10 <sup>1</sup> / 2	5 <sup>1</sup> / 4	9 <sup>1</sup> / 2
6	8	5	8 <sup>1</sup> / 4	5 <sup>1</sup> / 4	7 <sup>1</sup> / 2
6	6	5	6	5 <sup>1</sup> / 4	5 <sup>1</sup> / 2
4	6	3	6 <sup>7</sup> / 8	3 <sup>1</sup> / 2	5 <sup>1</sup> / 2

For SI: 1 inch = 25.4 mm.

~~602.4~~ **602.1.4 Type IV.** Type IV construction (Heavy Timber, HT) is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of solid or laminated wood without concealed spaces. The details of Type IV construction shall comply with the provisions of this section and Section ~~2304.11. Exterior walls complying with~~ Section ~~602.4.1 or 602.4.2 shall be permitted~~ 2304.10. Minimum solid sawn nominal dimensions are required for structures built using Type IV construction (HT) in accordance with this section. For gluedlaminated members and structural composite lumber (SCL) members, the equivalent net finished width and depths corresponding to the minimum nominal width and depths of solid sawn lumber are required as specified in Table ~~602.4.603.1.3~~. Cross-laminated timber (CLT) dimensions used in this section are actual dimensions. Combustible materials in exterior walls are permitted in accordance with Section 602.2 and elsewhere in this code.

~~**602.4.1 Fire-retardant-treated wood in exterior walls.** Fire-retardant treated wood framing complying with Section 2303.2 shall be permitted within exterior wall assemblies with a 2-hour rating or less.~~

~~**602.4.2 Cross-laminated timber in exterior walls.** Cross-laminated timber complying with Section 2303.1.4 shall be permitted within exterior wall assemblies with a 2-hour rating or less, provided the exterior surface of the cross-laminated timber is protected by one the following:~~

- ~~1. Fire-retardant treated wood sheathing complying with Section 2303.2 and not less than <sup>15</sup>/<sub>32</sub>-inch (12 mm) thick;~~
- ~~2. Gypsum board not less than <sup>1</sup>/<sub>2</sub>-inch (12.7 mm) thick; or~~
- ~~3. A noncombustible material.~~

~~**602.4.3 602.1.4.1 Columns.** Wood columns shall be sawn or glued laminated and shall be not less than 8 inches (203 mm), nominal, in any dimension where supporting floor loads and not less than 6 inches (152 mm) nominal in width and not less than 8 inches (203 mm) nominal in depth where supporting roof and ceiling loads only. Columns shall be continuous or superimposed and connected in an *approved* manner. Protection in accordance with Section 704.2 is not required.~~

~~**602.4.4 602.1.4.2 Floor framing.** No change to text.~~

~~**602.4.5 602.1.4.3 Roof framing.** Wood-frame or glued-laminated arches for roof construction, which spring from the floor line or from grade and do not support floor loads, shall have members not less than 6 inches (152 mm) nominal in width and have not less than 8 inches (203 mm) nominal in depth for the lower half of the height and not less than 6 inches (152 mm) nominal in depth for the upper half. Framed or glued-laminated arches for roof construction that spring from the top of walls or wall abutments, framed timber trusses and other roof framing, which do not support floor loads, shall have members not less than 4 inches (102 mm) nominal in width and not less than 6 inches (152 mm) nominal in depth. Spaced members shall be permitted to be composed of two or more pieces not less than 3 inches (76 mm) nominal in thickness where blocked solidly throughout their intervening spaces or where spaces are tightly closed by a continuous wood cover plate of not less than 2 inches (51 mm) nominal in thickness secured to the underside of the members. Splice plates shall be not less than 3 inches (76 mm) nominal in thickness. Where protected by *approved* automatic sprinklers under the roof deck, framing members shall be not less than 3 inches (76 mm) nominal in width.~~

~~**602.4.6 602.1.4.4 Floors.** No change to text.~~

~~**602.4.6.1 602.1.4.4.1 Sawn or glued-laminated plank floors.** Sawn or glued-laminated plank floors shall be one of the following:~~

- ~~1. Sawn or glued-laminated planks, splined or tongue-and-groove, of not less than 3 inches (76 mm) nominal in thickness covered with 1-inch (25 mm) nominal dimension tongue-and-groove flooring, laid crosswise or diagonally, <sup>15</sup>/<sub>32</sub>-inch (12 mm) wood structural panel or <sup>1</sup>/<sub>2</sub>-inch (12.7 mm) particleboard.~~
- ~~2. Planks not less than 4 inches (102 mm) nominal in width set on~~

edge close together and well spiked and covered with 1-inch (25 mm) nominal dimension flooring or <sup>15</sup> /<sub>32</sub>-inch (12 mm) wood structural panel or <sup>1</sup> /<sub>2</sub>-inch (12.7 mm) particleboard.

The lumber shall be laid so that no continuous line of joints will occur except at points of support. Floors shall not extend closer than <sup>1</sup> /<sub>2</sub> inch (12.7 mm) to walls. Such <sup>1</sup> /<sub>2</sub>-inch (12.7 mm) space shall be covered by a molding fastened to the wall and so arranged that it will not obstruct the swelling or shrinkage movements of the floor. Corbelling of masonry walls under the floor shall be permitted to be used in place of molding.

**~~602.4.6.2~~ 602.1.4.4.2 Cross-laminated timber floors.** *Cross-laminated timber* shall be not less than 4 inches (102 mm) in thickness. *Cross-laminated timber* shall be continuous from support to support and mechanically fastened to one another. *Cross-laminated timber* shall be permitted to be connected to walls without a shrinkage gap providing swelling or shrinking is considered in the design. Corbelling of masonry walls under the floor shall be permitted to be used.

**~~602.4.7~~ 602.1.4.5 Roofs.** Roofs shall be without concealed spaces and wood roof decks shall be sawn or glued laminated, splined or tongue-and-groove plank, not less than 2 inches (51 mm) nominal in thickness; <sup>1</sup> /<sub>8</sub>-inch-thick (32 mm) wood structural panel (exterior glue); planks not less than 3 inches (76 mm) nominal in width, set on edge close together and laid as required for floors; or of cross-laminated timber. Other types of decking shall be permitted to be used if providing equivalent fire resistance and structural properties.

Cross-laminated timber roofs shall be not less than 3 inches (76 mm) nominal in thickness and shall be continuous from support to support and mechanically fastened to one another.

**~~602.4.8~~ Partitions and walls.** Partitions and walls shall comply with Section ~~602.4.8.1~~ or ~~602.4.8.2~~.

**~~602.4.8.1~~ 602.1.4.6 Interior walls and partitions.** *No change to text.*

**~~602.4.8.2~~ Exterior walls.** Exterior walls shall be of one of the following:

- ~~1. Noncombustible materials.~~
- ~~2. Not less than 6 inches (152 mm) in thickness and constructed of one of the following:~~
  - ~~2.1. Fire retardant treated wood in accordance with Section 2303.2 and complying with Section 602.4.1.~~
  - ~~2.2. Cross-laminated timber complying with Section 602.4.2.~~

**~~602.4.9~~ 602.1.4.7 Exterior structural members.** *No change to text.*

**~~602.5~~ 602.1.5 Type V.** Type V construction is that type of construction in which the structural elements, *exterior walls* and interior walls are of any materials permitted by this code.

**602.2 Allowable uses of combustible materials.** Building elements in Type I and II Construction and within exterior walls in Types III and IV Construction shall be permitted to be constructed of combustible materials

in accordance with the following applications:

1. Fire-retardant-treated wood framing complying with Section 2303.2 shall be permitted as follows:

1.1. Nonbearing partitions where the required fire-resistance rating is 2 hours or less in Types I and II construction.

1.2. Nonbearing exterior walls where fire-resistance rated construction is not required in Types I and II construction.

1.3. Roof construction, including girders, trusses, framing and decking in Types I and II construction.

**Exception:** In buildings of Type IA construction exceeding two stories above grade plane, fire-retardant-treated wood is not permitted in roof construction where the vertical distance from the upper floor to the roof is less than 20 feet (6096 mm).

1.4 Within exterior wall assemblies for Type III construction where the fire-resistance rating of the wall assemblies are 2 hours or less.

1.5 Within exterior wall assemblies for Type IV construction where the fire-resistance rating of the wall assemblies are 2 hours or less and the thickness is not less than 6 inches.

2. In Type IV Construction, Cross-laminated timber complying with Section 2303.1.4 shall be permitted within exterior wall assemblies with a 2-hour rating or less, provided the exterior surface of the cross-laminated timber is protected by one the following:

2.1. Fire retardant treated wood sheathing complying with 2303.2 and not less than 15/32 inch (12 mm) thick;

2.2. Gypsum board not less than ½ inch (12.7 mm) thick; or

2.3. A noncombustible material.

3. Millwork such as doors, door frames, window sashes and frames.

4. Where not installed greater than 15 feet (4572 mm) above grade, show windows, nailing or furring strips and wooden bulkheads below show windows, including their frames, aprons and show cases.

5. In Types I, II, and III construction partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a corridor serving an occupant load of 30 or more shall be permitted to be constructed of fire-retardant-treated wood, 1-hour fire-resistance-rated construction or of wood panels or similar light construction up to 6 feet (1829 mm) in height.

6. Stages and platforms constructed in accordance with Sections 410.3 and 410.4, respectively.

7. Blocking such as for handrails, millwork, cabinets and window and door frames.

8. Mastics and caulking materials applied to provide flexible seals between components of exterior wall construction.

9. Heavy timber as permitted by Note c to Table 601 and Sections 602.1.4.5 and 1406.3.

10. Aggregates, component materials and admixtures as permitted by Section 703.2.2.

11. Sprayed fire-resistant materials and intumescent and mastic fire-resistant coatings, determined on the basis of fire-resistance tests in accordance with Section 703.2 and installed in accordance with Sections 1705.13 and 1705.14, respectively.

12. Materials used to protect penetrations in fire-resistance-rated assemblies in accordance with Section 714.

13. Wall construction of freezers and coolers of less than 1000 square

feet (92.9 m<sup>2</sup>) in floor area, lined on both sides with noncombustible materials and the building is protected throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

**Delete without substitution:**

~~**SECTION 603**~~  
~~**COMBUSTIBLE MATERIAL IN TYPES I AND II CONSTRUCTION**~~

~~**603.1 Allowable materials. Combustible materials shall be permitted in buildings of Type I or II construction in the following applications and in accordance with Sections 603.1.1 through 603.1.3:**~~

1. ~~Fire-retardant treated wood shall be permitted in:~~
  - 1.1. ~~Nonbearing partitions where the required fire-resistance rating is 2 hours or less.~~
  - 1.2. ~~Nonbearing exterior walls where fire-resistance-rated construction is not required.~~
  - 1.3. ~~Roof construction, including girders, trusses, framing and decking.~~

~~**Exception:** In buildings of Type IA construction exceeding two stories above grade plane, fire-retardant treated wood is not permitted in roof construction where the vertical distance from the upper floor to the roof is less than 20 feet (6096 mm).~~
2. ~~Thermal and acoustical insulation, other than foam plastics, having a flame spread index of not more than 25.~~

~~**Exceptions:**~~

  1. ~~Insulation placed between two layers of noncombustible materials without an intervening airspace shall be allowed to have a flame spread index of not more than 100.~~
  2. ~~Insulation installed between a finished floor and solid decking without intervening airspace shall be allowed to have a flame spread index of not more than 200.~~
3. ~~Foam plastics in accordance with Chapter 26.~~
4. ~~Roof coverings that have an A, B or C classification.~~
5. ~~Interior floor finish and floor covering materials installed in accordance with Section 804.~~
6. ~~Millwork such as doors, door frames, window sashes and frames.~~
7. ~~Interior wall and ceiling finishes installed in accordance with Sections 801 and 803.~~
8. ~~Trim installed in accordance with Section 806.~~
9. ~~Where not installed greater than 15 feet (4572 mm) above grade, show windows, nailing or furring strips and wooden bulkheads below show windows, including their frames, aprons and show cases.~~
10. ~~Finish flooring installed in accordance with Section 805.~~
11. ~~Partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a corridor serving an occupant load of 30 or more shall be permitted to be constructed of fire-retardant treated wood, 1-hour fire-resistance-rated construction or of wood panels or similar light~~

- construction up to 6 feet (1829 mm) in height.
12. ~~Stages and platforms constructed in accordance with Sections 410.3 and 410.4, respectively.~~
  13. ~~Combustible exterior wall coverings, balconies and similar projections and bay or oriel windows in accordance with Chapter 14.~~
  14. ~~Blocking such as for handrails, millwork, cabinets and window and door frames.~~
  15. ~~Light transmitting plastics as permitted by Chapter 26.~~
  16. ~~Mastics and caulking materials applied to provide flexible seals between components of exterior wall construction.~~
  17. ~~Exterior plastic veneer installed in accordance with Section 2605.2.~~
  18. ~~Nailing or furring strips as permitted by Section 803.11.~~
  19. ~~Heavy timber as permitted by Note c to Table 601 and Sections 602.4.7 and 1406.3.~~
  20. ~~Aggregates, component materials and admixtures as permitted by Section 703.2.2.~~
  21. ~~Sprayed fire resistant materials and intumescent and mastic fire resistant coatings, determined on the basis of fire resistance tests in accordance with Section 703.2 and installed in accordance with Sections 1705.14 and 1705.15, respectively.~~
  22. ~~Materials used to protect penetrations in fire resistance rated assemblies in accordance with Section 714.~~
  23. ~~Materials used to protect joints in fire resistance rated assemblies in accordance with Section 715.~~
  24. ~~Materials allowed in the concealed spaces of buildings of Types I and II construction in accordance with Section 718.5.~~
  25. ~~Materials exposed within plenums complying with Section 602 of the *International Mechanical Code*.~~
  26. ~~Wall construction of freezers and coolers of less than 1,000 square feet (92.9 m<sup>2</sup>), in size, lined on both sides with noncombustible materials and the building is protected throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.~~

**603.1.1 Ducts.** ~~The use of nonmetallic ducts shall be permitted where installed in accordance with the limitations of the *International Mechanical Code*.~~

**603.1.2 Piping.** ~~The use of combustible piping materials shall be permitted where installed in accordance with the limitations of the *International Mechanical Code* and the *International Plumbing Code*.~~

**603.1.3 Electrical.** ~~The use of electrical wiring methods with combustible insulation, tubing, raceways and related components shall be permitted where installed in accordance with the limitations of this code.~~

**Reason:** The purpose of this code change proposal is to remove the extraneous, unnecessary information from Chapter 6 that only serves to confuse users of this Code. Section 603 provides an incomplete laundry list of combustible materials that are allowed in Types I and II construction. However, Section 602.2 states that the building elements of buildings of Type I and II construction are required to be noncombustible except as permitted in Section 603, and elsewhere in this code. Of the 29 items listed in Section 603, only 12 of them are materials that could be components of the building elements in Table 601. The remaining materials listed

are also discussed in detail in other parts of the code regarding the limitations of their use in various types of construction. For instance, roof coverings are listed in item no. 4, that have a Class A, B, or C classification. Section 1505 provides in detail where roof coverings of different classifications are required in various types of construction. Why then, is this provision contained in Section 603? Roof coverings are not part of a building element listed in Table 601. Item no. 4 in Section 603.1 tells the user of the code nothing. Are the items in Section 603 the only combustible materials allowed in Types I and II Construction? This is a frequently confused point. For instance, Photovoltaic Rooftop panels and modules are permitted, as stated in Section 1510. But they are not listed in Section 603. Are they therefore only allowed in Types III, IV, and V construction? With this in mind, Section 603 is proposed for deletion, and only the items in Section 603 that can be part of the structural elements in Table 601 are listed in Section 602.2. Cross laminated timber in Type IV Construction (existing Section 602.4.2) has been relocated to the new Section 602.2 as Item 2, with all the other allowable combustible materials for the construction of building elements.

Here are the items that are moved from Section 603 to Section 602.2 (both the existing Item number and the proposed new Item number are provided):

1. Fire-retardant-treated wood. (Item 1)
6. Millwork such as doors, door frames, window sashes and frames. (Item 3)
9. Where not installed greater than 15 feet (4572 mm) above grade, show windows, nailing or furring strips and wooden bulkheads below show windows, including their frames, aprons and show cases. (Item 4)
11. Partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a corridor serving an occupant load of 30 or more shall be permitted to be constructed of fire-retardant-treated wood, 1-hour fire-resistance-rated construction or of wood panels or similar light construction up to 6 feet (1829 mm) in height. (Item 5)
12. Stages and platforms constructed in accordance with Sections 410.3 and 410.4, respectively. (Item 6)
14. Blocking, such as for handrails, millwork, cabinets and window and door frames. (Item 7)
16. Mastics and caulking materials applied to provide flexible seals between components of exterior wall construction. (Item 8)
19. Heavy timber as permitted by Note c to Table 601 and Sections 602.4.7 and 1406.3. (Item 9)
20. Aggregates, component materials and admixtures as permitted by Section 703.2.2. (Item 10)
21. Sprayed fire-resistant materials and intumescent and mastic fire-resistant coatings, determined on the basis of fire-resistance tests in accordance with Section 703.2 and installed in accordance with Sections 1705.13 and 1705.14, respectively. (Item 11)
22. Materials used to protect penetrations in fire-resistance-rated assemblies in accordance with Section 714. (Item 12)
26. Wall construction of freezers and coolers of less than 1000 square feet (92.9 m<sup>2</sup>), in size, lined on both sides with noncombustible materials and the building is protected throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. (Item 13)

The remaining items are removed from this Chapter because they do not comprise parts of the elements listed in Table 601 and any limitations on their use in noncombustible construction are provided elsewhere in the code:

2. Thermal and acoustical insulation: See Section 720.
3. Foam plastics: See Section 2603.
4. Roof coverings: See Chapter 15.
5. Interior floor finish and floor coverings: See Section 804.
7. Interior wall and ceiling finishes: See Sections 801 and 803.
8. Trim: See Section 806.

- 10. Finish flooring: See Section 805.
- 13. Combustible exterior wall coverings, balconies, and similar projections: See Section 1406.
- 15. Light-transmitting plastics: See Sections 2606- 2611.
- 17. Exterior plastic veneer: See Section 2605.2.
- 18. Nailing or furring strips: See Section 803.11.
- 23. Materials used to protect joints in fire-resistance rated assemblies: See Section 715.
- 24. Material in concealed spaces: See Section 718.5
- 25. Materials exposed within plenums: See Section 602 of the IMC

**Cost Impact:** Will not increase the cost of construction  
 The proposal attempts to clarify the code, but does not make any technical changes to code requirements.

G170-15 : 602.4.1-  
 KULIK4886

### **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee appreciated the effort to reorganize these provisions, but there were concerns that the proposal was incomplete. Testimony indicated that some key provisions were missing. Specifically identified by the committee was the nailing of furring strips are not found in the section suggested by the proponents; and information provided elsewhere does not adequately address foam insulation. There were two proposed modifications that would have improved the text of the proposal. The committee was uncomfortable with the reduction of the list currently in Section 603.

**Assembly Action :**

**None**

### **Individual Consideration Agenda**

#### *Public Comment 1:*

**Proponent : Edward Kulik, representing ICC Building Code Action Committee (bcac@iccsafe.org) requests Approve as Submitted.**

**Commenter's Reason:** This code change proposal is not a simple re-organization of the code. Rather, this is an important re-focusing of the requirements of Chapter 6. Chapter 6 is intended to describe what the 5 types of construction are, in part by specifying whether structural elements that are listed in Table 601 are required to be noncombustible or otherwise allowed to be combustible. Therefore the issue in Section 603 is to state when those elements in Table 601 are also permitted to be constructed of or contain combustible elements. Section 603 was never intended to be a comprehensive list of combustible materials allowed anywhere in a building. In its reason statement, the committee stated that the proposal was incomplete; specifically that the reference to nailing or furring strips was not found in the Section suggested, and that foam plastic is not adequately addressed elsewhere. Regarding the nailing or furring strips, the section referenced is exactly the section referenced in the present code—Section 803.11. Regarding foam plastics, this material is comprehensively addressed in Chapter 26, and it is clear where it is allowed to be used. But foam plastic insulation or foam plastic exterior veneer are not part of the building elements addressed in this chapter; therefore the reference in new Section 602.2 is inappropriate.

The committee actually makes our case for us. In the committee reason statement, the committee states that our reason statement makes the wrong code reference for one item that was removed from the list: furring strips. First of all, the reference made comes directly from Section 603, and second, there are a total of 5 references to furring strips in the code. Was the code intended to say that only the furring strips used in the application stated in Section 803.11 be the only application for combustible furring strips in noncombustible construction? The answer, of course, is no.

Section 603 is an incomplete list of combustible materials permitted to be used in Types I and II Construction. As such, it begs the question, "Why are these materials listed here, and not all combustible materials that are permitted in Types I and II Construction?" Section 603 is unnecessary. The code never says that all materials in Type I and II Construction are required to be noncombustible. What the code does say is that the building elements listed in Table 601 are required to be noncombustible, except as permitted in Section 603 of the code and elsewhere. Therefore, we propose that Section 603 be deleted and that a new Section 602.2 that lists only the exceptions to the building elements and exterior walls that are otherwise required to be noncombustible in Section 602.1.

## Public Comment 2:

**Proponent : Gregory Keith, representing The Boeing Company (grkeith@mac.com) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

## 2015 International Building Code

### SECTION 602 CONSTRUCTION CLASSIFICATION

**602.1 General.** Buildings and structures erected or to be erected, altered or extended in height or area shall be classified as Type I, II, III, IV, or V construction. ~~The building Building elements shall be constructed of materials as required for the type of construction in accordance with Sections 602.1.1 through 602.1.5 and shall have a fire-resistance rating not less than that specified in Table 601 and shall be constructed of materials as required by Section 602.2 for the applicable type of construction.~~ exterior walls shall have a *fire-resistance rating* not less than that specified in Table 602. Where required to have a *fire-resistance rating* by Table 601, building elements shall comply with the applicable provisions of Section 703.2. The protection of openings, ducts and air transfer openings in building elements shall not be required unless required by other provisions of this code.

**602.2 Building element construction materials.** Building elements listed in Table 601 shall be constructed of materials in accordance with the provisions of this section.

~~602.1.2~~ **602.2.1 Types I and II construction.** Building elements in buildings of Types I and II construction are those types of construction in which the building elements listed in Table 601 shall be constructed of noncombustible materials. Combustible, except that combustible materials are permitted in accordance with Section 602.2 to be used as listed below and elsewhere in this code.

1. Fire-retardant-treated wood framing complying with Section 2303.2 shall be permitted as follows:

1.1. Nonbearing partitions where the required fire-resistance rating is 2 hours or less.

1.2. Nonbearing exterior walls where fire-resistance rated construction is not required.

1.3. Roof construction, including girders, trusses, framing and decking.

**Exception:** In buildings of Type IA construction exceeding two stories above grade plane, fire-retardant- treated wood is not permitted in roof construction where the vertical distance from the upper floor to the roof is less than 20 feet (6096 mm).

2. Partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a corridor serving an occupant load of 30 or more shall be permitted to be constructed of fire-retardant-treated wood, 1-hour fire-resistance-rated construction or of wood panels or similar light construction up to 6 feet (1829 mm) in height.

3. Stages and platforms constructed in accordance with Sections 410.3 and 410.4, respectively.

4. Wall construction of freezers and coolers of less than 1000 square feet (92.9 m<sup>2</sup>), in size, lined on both sides with noncombustible materials where the building is protected throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

Materials used on or within building elements in buildings of Type I or II construction shall comply with Section 602.3.

**602.1.3 602.2.2 Type III construction.** Exterior walls in buildings of Type III construction is that type of construction in which the exterior walls shall be constructed of noncombustible materials and the interior complying with Section 602.2.1. Materials used on or within exterior walls in buildings of Type III construction shall comply with Section 602.3.

Interior building elements are in buildings of Type III construction shall be of any material permitted by this code. Combustible materials within exterior walls are permitted in accordance with Section 602.2 and elsewhere in this code.

**602.1.4 602.2.3 Type IV (Heavy Timber, HT) construction.** Exterior walls in buildings of Type IV construction (Heavy Timber, HT) is that type shall be constructed of construction materials complying with Section 602.2.1. Materials used on or within exterior walls in which buildings of Type IV construction shall comply with Section 602.3.

**Exception:** Cross-laminated timber complying with Section 2303.1.4 shall be permitted within exterior wall assemblies with a 2-hour rating or less, provided the exterior walls are surface of noncombustible materials the cross-laminated timber is protected by one of the following:

1. Fire retardant treated wood sheathing complying with Section 2303.2 and the interior not less than 15/32-inch (12 mm) thick;

2. Gypsum board not less than 1/2-inch (12.7 mm) thick; or
3. A noncombustible material.

Interior building elements are in buildings of Type IV construction shall be of solid or laminated wood without concealed spaces.

The details of Type IV construction shall comply with the provisions of this section and Section 2304.10. Minimum solid sawn nominal dimensions are required for structures built using Type IV construction (HT) in accordance with this section. For gluedlaminated members and structural composite lumber (SCL) members, the equivalent net finished width and depths corresponding to the minimum nominal width and depths of solid sawn lumber are required as specified in Table 602.4. *Cross-laminated timber* (CLT) dimensions used in this section are actual dimensions. Combustible materials in exterior walls are permitted in accordance with Section 602.2 and elsewhere in this code.

~~602.1.4.1~~ **602.2.3.1 Columns.** *No change to text.*

~~602.1.4.2~~ **602.2.3.2 Floor framing.** *No change to text.*

~~602.1.4.3~~ **602.2.3.3 Roof framing.** *No change to text.*

~~602.1.4.4~~ **602.2.3.4 Floors.** *No change to text.*

~~602.1.4.4.1~~ **602.2.3.4.1 Sawn or glued-laminated plank floors.** *No change to text.*

~~602.1.4.4.2~~ **602.2.3.4.2 Cross-laminated timber floors.** *No change to text.*

~~602.1.4.5~~ **602.2.3.5 Roofs.** *No change to text.*

~~602.1.4.6~~ **602.2.3.6 Interior walls and partitions.** *No change to text.*

~~602.1.4.7~~ **602.2.3.7 Exterior structural members.** *No change to text.*

~~602.1.5~~ **602.2.4 Type V construction.** *All building elements in buildings of Type V construction is that type of construction in which the structural elements, exterior walls and interior walls are shall be constructed of any materials permitted by this code.*

**602.3 Materials used on or within building elements** *All construction materials used on or within building elements listed in Table 601 for buildings of Type I or II construction and exterior walls in Type III or IV (HT) construction shall be noncombustible, except that combustible materials are permitted to be used as listed below and elsewhere in this code.*

1. Blocking such as for handrails, millwork, cabinets and window and door frames.

2. Millwork such as doors, door frames, window sashes and frames.

3. Trim installed in accordance with Section 806.

4. Nailing or furring strips in accordance with Section 803.13.

5. Where not installed greater than 15 feet (4572 mm) above grade, show windows, nailing or furring strips and wooden bulkheads below show windows, including their frames, aprons and show cases.

6. Combustible exterior wall coverings, balconies and similar projections and bay or oriel windows in accordance with Chapter 14.

7. Exterior plastic veneer installed in accordance with Section 2605.2.

8. Interior wall and ceiling finishes installed in accordance with Sections 801 and 803.

9. Interior floor finish and floor covering materials installed in accordance with Section 804.

10. Finish flooring installed in accordance with Section 805.

11. Roof coverings that have an A, B or C classification.

12. Heavy timber as permitted by Note c to Table 601 and Sections 602.4.7 and 1406.3.

13. Thermal and acoustical insulation, other than foam plastics, having a flame spread index of not more than 25.

**Exceptions:**

1. Insulation placed between two layers of noncombustible materials without an intervening airspace shall be allowed to have a flame spread index of not more than 100.

2. Insulation installed between a finished floor and solid decking without intervening airspace shall be allowed to have a flame spread index of not more than 200.

14. Foam plastics in accordance with Chapter 26.

15. Light-transmitting plastics as permitted by Chapter 26.

16. Mastics and caulking materials applied to provide flexible seals between components of exterior wall construction.

17. Aggregates, component materials and admixtures as permitted by Section 703.2.2.

18. Sprayed fire-resistant materials and intumescent and mastic fire-resistant coatings, determined on the basis of fire-resistance tests in accordance with Section 703.2 and installed in accordance with Sections 1705.13 and 1705.14.

19. Materials used to protect penetrations in fire-resistance-rated assemblies in accordance with Section 714.

20. Materials used to protect joints in fire-resistance-rated assemblies in accordance with Section 715.

21. Materials allowed in the concealed spaces of buildings of Types I and II construction in accordance with Section 718.5.

22. Materials exposed within plenums complying with Section 602 of the International Mechanical Code.

~~**602.2 Allowable uses of combustible materials.** Building elements in Type I and II Construction and within exterior walls in Types III and IV Construction shall be permitted to be constructed of combustible materials in accordance with the following applications:~~

~~1. *Fire retardant treated wood* framing complying with Section 2303.2 shall be permitted as follows:~~

~~1.1. Nonbearing partitions where the required *fire resistance rating* is 2 hours or less in Types I and II construction.~~

~~1.2. Nonbearing *exterior walls* where fire resistance-rated construction is not required in Types I and II construction.~~

~~1.3. Roof construction, including girders, trusses, framing and decking in Types I and II construction.~~

~~**Exception:** In buildings of Type IA construction exceeding two stories above grade plane, *fire retardant treated wood* is not permitted in roof construction where the vertical distance from the upper floor to the roof is less than 20 feet (6096 mm).~~

~~1.4 Within exterior wall assemblies for Type III construction where the fire resistance rating of the wall assemblies are 2 hours or less.~~

~~1.5 Within exterior wall assemblies for Type IV construction where the fire resistance rating of the wall assemblies are 2 hours or less and the thickness is not less than 6 inches.~~

~~2. In Type IV Construction, *Cross laminated timber* complying with Section 2303.1.4 shall be permitted within exterior wall assemblies with a 2-hour rating or less, provided the exterior surface of the cross-laminated timber is protected by one the following:~~

~~2.1. *Fire retardant treated wood* sheathing complying with 2303.2 and not less than 15/32 inch (12 mm) thick;~~

~~2.2. *Gypsum board* not less than ½ inch (12.7 mm) thick; or~~

~~2.3. A noncombustible material.~~

~~3. Millwork such as doors, door frames, window sashes and frames.~~

~~4. Where not installed greater than 15 feet (4572 mm) above grade, show windows, nailing or furring strips and wooden bulkheads below show windows, including their frames, aprons and show cases.~~

~~5. In Types I, II, and III construction partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a *corridor* serving an *occupant load* of 30 or more shall be permitted to be constructed of *fire retardant treated wood*, 1-hour fire-resistance-rated construction or of wood panels or similar light construction up to 6 feet (1829 mm) in height.~~

~~6. Stages and platforms constructed in accordance with Sections 410.3 and 410.4, respectively.~~

~~7. Blocking such as for handrails, millwork, cabinets and window and door frames.~~

- ~~8. Mastics and caulking materials applied to provide flexible seals between components of exterior wall construction.~~
- ~~9. Heavy timber as permitted by Note c to Table 601 and Sections 602.1.4.5 and 1406.3.~~
- ~~10. Aggregates, component materials and admixtures as permitted by Section 703.2.2.~~
- ~~11. Sprayed fire-resistant materials and intumescent and mastic fire-resistant coatings, determined on the basis of fire resistance tests in accordance with Section 703.2 and installed in accordance with Sections 1705.13 and 1705.14, respectively.~~
- ~~12. Materials used to protect penetrations in fire resistance-rated assemblies in accordance with Section 714.~~
- ~~13. Wall construction of freezers and coolers of less than 1000 square feet (92.9 m<sup>2</sup>) in floor area, lined on both sides with noncombustible materials and the building is protected throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.~~

**Commenter's Reason:** In the General Code Committee's reason statement for disapproval of Item G 170-15, they acknowledged the value of reorganizing Chapter 6 materials requirements. The published statement follows:

"The committee appreciated the effort to reorganize these provisions, but there were concerns that the proposal was incomplete. Testimony indicated that some key provisions were missing. Specifically identified by the committee was the nailing of furring strips are not found in the section suggested by the proponents; and information provided elsewhere does not adequately address foam insulation. There were two proposed modifications that would have improved the text of the proposal. The committee was uncomfortable with the reduction of the list currently in Section 603."

G 170-15 was intended to accomplish two ends. First, it was intended to clarify the materials charging language for the various types of construction. Secondly, it attempted to reduce the current Section 603 exceptions to noncombustible construction to those items directly related to the construction of a given building element as opposed to those materials being on or within such building element. As to the first point, the proposal was relatively successful.

Unfortunately, the current Section 603 conditions were treated somewhat arbitrarily. Many code practitioners do not prefer so-called "laundry lists." That said, the exercise is to provide information for code users of all experience levels. To selectively reduce the references to acceptable combustible materials and distribute some to locations "elsewhere in the code," is a disservice. As cumbersome as some may find it, the current 603 list of materials does provide a "one-stop shop" that is familiar to building designers and code enforcement officials alike.

This public comment achieves a middle ground by separating those instances where combustible materials are permitted in the construction of given building elements from those cases where combustible materials may be used on or within building elements. Nevertheless, all former provisions are retained in context. Those instances where combustible materials are permitted in the construction of a given building element are found in context with the construction requirements for the individual types of construction. Within those sections there is a new crossreference to Section 602.3 for a list of permissible materials used on or within building elements. So effectively, the former Section 603 has been subdivided into several smaller lists in technical context.

The reorganization provided in this public comment is consistent with the spirit of G 170-15 as submitted; however, it will provide a much higher degree of functionality and user friendliness. The committee reason statement noted that some original provisions had been lost. The following provides for the accountability of former

provisions. It should be noted that the provisions have been reorganized based on their frequency of applicability.

Former Section 603	Public Comment Location
1.)	602.1, Item 1
2.)	602.3, Item 13
3.)	602.3, Item 14
4.)	602.3, Item 11
5.)	602.3, Item 9
6.)	602.3, Item 2
7.)	602.3, Item 8
8.)	602.3, Item 3
9.)	602.3, Item 5
10.)	602.3, Item 10
11.)	602.1, Item 2
12.)	602.1, Item 3
13.)	602.3, Item 6
14.)	602.3, Item 1
15.)	602.3, Item 15
16.)	602.3, Item 16
17.)	602.3, Item 7
18.)	602.3, Item 4
19.)	602.3, Item 12
20.)	602.3, Item 17
21.)	602.3, Item 18
22.)	602.3, Item 19
23.)	602.3, Item 20
24.)	602.3, Item 21
25.)	602.3, Item 22
26.)	602.1, Item 4

Approval of this public comment will greatly assist users in the determination of building element construction requirements based on the applicable type of construction. It retains much of the editorial improvements of G 170-15--especially for Type IV construction--while improving the functionality of the provision based on General Code Committee comments.

### *Public Comment 3:*

**Proponent : Stephen Skalko, Stephen V. Skalko, P.E. & Associates, LLC, representing Masonry Alliance for Codes and Standards requests Approve as Modified by this Public Comment.**

#### **Modify as Follows:**

### **2015 International Building Code**

**602.1.3 Type III.** Type III construction is that type of construction in which the exterior walls shall be constructed of noncombustible materials and the interior building elements are of any material permitted by this code. Combustible materials within nonbearing exterior wall assemblies with a 2-hour fire resistance rating or less are permitted in accordance with Section 602.2 and elsewhere in this code.

**602.1.4 Type IV.** Type IV construction (Heavy Timber, HT) is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of solid or laminated wood without concealed spaces. The details of Type IV construction shall comply with the provisions of this section and Section 2304.10. Minimum solid sawn nominal dimensions are required for structures built using Type IV construction (HT) in accordance with this section. For gluedlaminated members and structural composite lumber (SCL) members, the equivalent net finished width and depths corresponding to the minimum nominal width and depths of solid sawn lumber are required as specified in Table 602.4. *Cross-laminated timber* (CLT) dimensions used in this section are actual dimensions. Combustible materials in nonbearing exterior walls- wall assemblies with a 2-hour fire resistance rating or less are permitted in accordance with Section 602.2 and elsewhere in this code.

**602.2 Allowable uses of combustible materials.** Building elements in Type I and II Construction and within nonbearing exterior walls in Types III and IV Construction shall be permitted to be constructed of combustible materials in accordance with the following applications:

1. *Fire-retardant-treated wood* framing complying with Section 2303.2 shall be permitted as follows:
  - 1.1. Nonbearing partitions where the required *fire-resistance rating* is 2 hours or less in Types I and II construction.
  - 1.2. Nonbearing *exterior walls* where fire-resistance rated construction is not required in Types I and II construction.
  - 1.3. Roof construction, including girders, trusses, framing and decking in Types I and II construction.

**Exception:** In buildings of Type IA construction exceeding two stories above grade plane, *fire-retardant-treated wood* is not permitted in roof construction where the vertical distance from the upper floor to the roof is less than 20 feet (6096 mm).

- 1.4 Within nonbearing exterior wall assemblies for Type III construction where the fireresistance rating of the wall assemblies are 2 hours or less.
- 1.5 Within nonbearing exterior wall assemblies for Type IV construction where the fireresistance rating of the wall assemblies are 2 hours or less and the thickness is not less than 6 inches.
2. In Type IV Construction, *Cross-laminated timber* complying with Section 2303.1.4 shall be permitted within nonbearing exterior wall assemblies with a 2-hour rating or less, provided the exterior surface of the cross-laminated timber is protected by one the following:
  - 2.1. *Fire retardant treated wood* sheathing complying with 2303.2 and not less than 15/32 inch (12 mm) thick;
  - 2.2. *Gypsum board* not less than ½ inch (12.7 mm) thick; or
  - 2.3. A noncombustible material.
3. Millwork such as doors, door frames, window sashes and frames.
4. Where not installed greater than 15 feet (4572 mm) above grade, show windows, nailing or furring strips and wooden bulkheads below show windows, including their frames, aprons and show cases.
5. In Types I, II, and III construction partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a *corridor* serving an *occupant load* of 30 or more shall be permitted to be constructed of *fire-retardant-treated wood*, 1-hour fire-

- resistance-rated construction or of wood panels or similar light construction up to 6 feet (1829 mm) in height.
6. Stages and platforms constructed in accordance with Sections 410.3 and 410.4, respectively.
  7. Blocking such as for handrails, millwork, cabinets and window and door frames.
  8. Mastics and caulking materials applied to provide flexible seals between components of *exterior wall* construction.
  9. Heavy timber as permitted by Note c to Table 601 and Sections 602.1.4.5 and 1406.3.
  10. Aggregates, component materials and admixtures as permitted by Section 703.2.2.
  11. Sprayed fire-resistant materials and intumescent and mastic fire-resistant coatings, determined on the basis of *fire-resistance* tests in accordance with Section 703.2 and installed in accordance with Sections 1705.13 and 1705.14, respectively.
  12. Materials used to protect penetrations in fire-resistance-rated assemblies in accordance with Section 714.
  13. Wall construction of freezers and coolers of less than 1000 square feet (92.9 m<sup>2</sup>) in floor area, lined on both sides with noncombustible materials and the building is protected throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

**Commenter's Reason:** Overall the proposed changes to Chapter 6 by the Building Code Action Committee do offer clarification on application of the Types of construction and the use of combustible materials. However, the proposal needs additional revisions to further clarify the intent of the code for the use of combustible materials in exterior walls of Types III and IV construction. Both new Section 602.1.3 for Type III construction (former 602.3) and new Section 602.1.4 for Type IV construction (former 602.4) specify that exterior walls shall be of noncombustible materials. Though not explicit it is implied by the language for Type III construction and Type IV construction that fire retardant treated wood and cross-laminated lumber, which are combustible materials, are permitted to be used "within" the exterior wall assembly provided the wall assembly has a fire resistance of 2-hours or less. This term "within" indicates the combustible materials are permitted for use as a component in the exterior wall but the structural exterior wall (i.e. load-bearing wall) is still required to be noncombustible.

Historically building construction types in older building codes and the previous legacy codes were described based on noncombustible and/or combustible materials utilized in the building structural elements. The construction types ranged from buildings with no combustible structural framing, to those with noncombustible exterior walls and some combustible structural framing on the interior of the building, to buildings where the majority of the structural framing was combustible. This concept of describing the building construction type based on these combinations of noncombustible and/or combustible materials is reflected in the types of construction found in the International Building Code as follows:

- Types I and II use mostly noncombustible materials.
- Types III and IV construction have exterior walls are of noncombustible materials but allow interior framing wholly or partly of combustible materials. Type III construction has interior framing of nominal light frame wood members. Type IV construction has interior wood members of a size to be classified as heavy timber.
- Type V construction permits structural elements, including bearing exterior walls, to be of any material permitted by the code such as nominal light frame wood members.

This change will make clear that the fire retardant treated wood and cross-laminated lumber are permitted within the exterior walls in Types III and IV construction but the loadbearing portions of the exterior wall must be noncombustible. Further, this modification coordinates with Section 603.1, Item 1.2 where FRTW for Types I and II construction is permitted in non-bearing exterior walls.

**Recommend APPROVAL AS MODIFIED for G170-15.**

---

**G170-15**

# G171-15

602.1, 602.1.1, 602.1.1.1 (New)

## Proposed Change as Submitted

**Proponent :** Vickie Lovell, InterCode Incorporated, representing Fire Safe North America (vickie@intercodeinc.com)

### 2015 International Building Code

**Revise as follows:**

**602.1 General.** Buildings and structures erected or to be erected, altered or extended in height or area shall be classified in one of the five construction types defined in Sections 602.2 through 602.5. ~~The building elements shall have a *fire-resistance rating* not less than that specified in Table 601 and exterior walls shall have a *fire-resistance rating* not less than that specified in Table 602. Where required to have a *fire-resistance rating* by Table 601, building elements shall comply with the applicable provisions of Section 703.2. The protection of openings, ducts and air transfer openings in building elements shall not be required unless required by other provisions of this code.~~ \_

**602.1.1 Minimum requirements. Fire-resistance ratings A** ~~The building or portion thereof elements shall have a *fire-resistance rating* not less than that specified in Table 601 and exterior walls shall have a *fire-resistance rating* not less than that specified in Table 602. Where required to have a fire resistance rating by Table 601, building elements shall comply with the applicable provisions of Section 703.2. The protection of openings, ducts and air transfer openings in building elements shall not be required to conform to the details unless required by other provisions of a type of construction higher than that type which meets the minimum requirements based on occupancy even though certain features of such a building actually conform to a higher type of construction. this code.~~

**Add new text as follows:**

**602.1.1.1 Buildings in high risk areas.** In Table 601 the building elements in multi-story buildings of construction Types IIB, IIIB and VB in Risk Categories III and IV identified in Table 1604.5 shall have a *fire-resistance rating* of not less than 1 hour where such buildings are any of the following:

1. Assigned to Seismic Design Category C or D in Table 1613.3.5(1).
2. Located in a flood hazard area established in accordance with Section 1612.3.
3. Located in a hurricane-prone region.

**Reason:** As hazard events, both naturally-occurring and man-made, are increasing in number and severity in the United States and around the world, the resilience of communities and the individual buildings within those communities is becoming of vital importance.

A National Institute of Building Sciences Publication (May, 2014) entitled "Moving Forward: Findings and Recommendations", states that "while a long history of building codes has laid the foundation for addressing the impacts of natural and man-made hazards, changes in the frequency and severity of events have brought new challenges — challenges requiring the engagement and support of

policymakers. While building codes serve as the minimum requirements for life-safety in the building stock, basic life-safety protections do not fully address building performance requirements to achieve resilience."

Mitigation includes, among other things, fortifying buildings so that they are less likely to be severely damaged or completely destroyed during or immediately after a disaster. It is the key to recovery after a disaster. Mitigation allows individuals and communities to lessen post-disaster disruption and rebuild more quickly. States and cities have started implementing more stringent requirements in specific geographic areas they have designated as higher-risk. The purpose of this series of code changes proposed by Fire Safe North America is to encourage the debate in the code development process to identify what constitutes resilient buildings, and begin to identify issues that will become the basis for "new minimum requirements" for increased building resiliency.

Responding to the challenge of mitigating damage and resilient buildings is an admittedly complex topic. Fire Safe North America proposals are intended to reduce the total reliance of a community and its firefighters on automatic sprinkler systems in disaster-prone areas of the country where the water supply and/or power are likely to be interrupted, or are likely to have water supply system operational issues. The proposals, if approved, will fortify the building code requirements for the most vulnerable buildings to fire - Type IIB, IIIB, and VB construction, which are also classified as Risk Category III and IV in Table 1604.5, and in high-risk, disaster prone regions. The proposals modify the following code requirements in such buildings:

1. Reduce allowable area limits
2. Protect the path of egress by limiting travel distances
3. Protect the path of egress by protecting corridors
4. Require higher fire resistance ratings for occupancy separations
5. Require higher fire resistance ratings for building elements

These proposals are intended to be conservative so as to promote community resiliency and disaster mitigation by protecting essential buildings with both sprinkler protection AND fire resistance rated compartmentation. These proposals may be fairly considered to be the proverbial "belt-and suspenders" approach, requiring both sprinkler protection and increased fire resistance rated compartmentation in specific buildings in high risk areas for disasters.

Historically, the code has been written using the general assumption that automatic sprinklers will operate satisfactorily and there will be suitable power for such building operations. Code users design and build assuming that firefighters will be able to respond at their normal efficiencies. In some parts of the country, buildings impacted by disasters may remain without reliable water and/or power for a considerable period of time, well after the occurrence of the disaster. History has shown that increased incidents of fires after a disaster can be more destructive to life and property than the disaster itself. Total reliance on an uninterrupted power and water supply may not be an acceptable risk. It may also be an unacceptable risk to assume that firefighters will be able to respond at their normal efficiencies.

For example, more than 15% of the U.S. population lives in potential major earthquake areas. 41 states and territories have moderate to high risk. There is a real likelihood of power and water supplies being interrupted following a major seismic event, along with the potential for multiple simultaneous structure fires and also building-to-building fire spread. In October 17, 1989, a 7.1 earthquake in Santa Cruz Mountains was responsible for 26 fires in San Francisco, 60 miles from epicenter. There were 67 documented breaks in water mains which effectively eliminated water pressure in the area. On January 19, 1994, a 6.8 earthquake centered in Northridge, CA. There were approximately 100 fire ignitions, 30 to 50 of those were considered significant. The water supply systems in the area were damaged causing low pressure in water distribution. On January 17, 1995, a 6.8 (approx.) earthquake near Kobe, Japan caused 90 fires to start within minutes. 85 spread to adjacent buildings and 10 approached or reached conflagration status. 1,700 water line breaks occurred within a couple of hours. There were 7,000 buildings destroyed by fire alone.

In 1997, the Red River flooded Grand Forks, North Dakota, causing \$3.7 billion in

flood losses, and displaced thousands of families and businesses. Similar data of increased fire incidents are available in other flood and hurricane-prone areas.

Undoubtedly, this will increase the cost of construction in these specific buildings. However, a recent FEMA's 2010 report "Mitigation's Value to Society" statement described how mitigation is an investment that needs to be made. A recent study by the NIBS Multihazard Mitigation Council (MMC) identified that each dollar spent on mitigation saves an average of \$4.00 in disaster recovery.

**Links:**

<http://www.dhSES.ny.gov/oem/mitigation/documents/mitigations-value-to-society.pdf>

The two-volume NIBS MMC study report is available for free download at:

<http://www.nibs.org/index.php/mmc/projects/nhms>

**Cost Impact:** Will increase the cost of construction

This change increases the fire ratings of structural elements of essential buildings to the fire ratings specified for non-sprinklered buildings, and the increased cost will be consistent with the costs for non-sprinklered buildings. The increased costs are only proposed for limited geographic areas.

G171-15 : 602.1-  
LOVELL5283

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** Items G140-15, G152-15 and G171-15 were considered together. The committee disapproved all three. They were unconvinced by the proponents reason statement that these changes are the way to address buildings in higher risk areas. The committee felt that the impact of this proposal would be to essential ban non-rated construction.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : Vickie Lovell, InterCode Incorporated, representing Fire Safe North America (vickie@intercodeinc.com) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

**602.1 General.** Buildings and structures erected or to be erected, altered or extended in height or area shall be classified in one of the five construction types defined in Sections 602.2 through 602.5.- The building elements shall have a fire-resistance rating of not less than that specified in Table 601 and exterior walls shall have a fire-resistance rating of not less than that specified in Table 602, except where limited by Section 602.1.2. Where required to have a fire-resistance rating by Table 601, building elements shall comply with the applicable provisions of Section 703.2. The protection of openings, ducts and air transfer openings in building elements shall not be required unless required by other provisions of this code.

**602.1.1 Fire-resistance ratings** The building elements shall have a *fire-resistance rating* not less than that specified in Table 601 and exterior walls shall have a *fire-resistance rating of* not less than that specified in Table 602. Where required to have a fire resistance rating by Table 601, building elements shall comply with the applicable provisions of Section 703.2. The protection of openings, ducts and air transfer openings in building elements shall not be required unless required by other provisions of this code.

**602.1.2 Building elements in disaster-prone areas.** The building elements in multi-story, sprinklered buildings of construction Types IIB, IIIB and VB assigned to Risk Category IV identified in Table 1604.5 shall have a fire-resistance rating of not less than 1 hour where such buildings are any of the following:

1. Assigned to Seismic Design Category D or F in accordance with Section 1613.3.5.
2. Located in a special flood hazard area established in accordance with Section 1612.3.
3. Located in the windborne-debris region based on Figure 1609.3(2).

**Exception:** Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1, that are provided with a secondary water supply in accordance with Section 403.3.3, and where fire pumps are protected against interruption of service in accordance with Section 913.

**Commenter's Reason:** The increased fire resistivity required by this proposal is intended to apply ONLY to buildings that are ALL of the following:

- Classified in the highest risk category.
- Located in the highest risk, disaster-prone regions for floods, hurricanes and seismic activity.
- Type IIB, IIIB or VB construction.

It excludes sprinklered buildings that have emergency backup systems for water and power in those regions.

Although the cause is debated, naturally-occurring and man-made disasters are increasing in number and severity in the United States and around the world. That fact is undisputed. The resilience of communities and the individual buildings within those communities is becoming of vital importance.

A National Institute of Building Sciences Publication (May, 2014) entitled "Moving Forward: Findings and Recommendations", states that "while a long history of building codes has laid the foundation for addressing the impacts of natural and man-made hazards, changes in the frequency and severity of events have brought new challenges — challenges requiring the engagement and support of policymakers. While building codes serve as the minimum requirements for life-safety in the building stock, basic life-safety protections do not fully address building performance requirements to achieve resilience."

Mitigation includes, among other things, fortifying buildings so that they are less likely to be severely damaged or completely destroyed during or immediately after a disaster. It is the key to recovery after a disaster. Mitigation allows individuals and communities to lessen post-disaster disruption and rebuild more quickly. States and cities have started implementing more stringent requirements in specific geographic areas they have designated as higher-risk.

The purpose of this series of code changes proposed by Fire Safe North America is to encourage the debate in the code development process to identify what constitutes resilient buildings, and begin to identify issues that will become the basis

for "new minimum requirements" for increased building resiliency.

Responding to the challenge of mitigating damage and resilient buildings is an admittedly complex topic. Fire Safe North America proposals are intended to reduce the total reliance of a community and its firefighters on automatic sprinkler systems in disaster-prone areas of the country where the water supply and/or power are likely to be interrupted, or are likely to have water supply system operational issues. The proposals, if approved, will fortify the building code requirements for the most vulnerable buildings to fire - Type IIB, IIIB, and VB construction, which are also classified as Risk Category IV in Table 1604.5, and in high-risk, disaster prone regions. The proposals modify the following code requirements in such buildings:

1. Reduce allowable area limits.
2. Protect the path of egress by limiting travel distances.
3. Protect the path of egress by protecting corridors.
4. Require higher fire resistance ratings for occupancy separations.
5. Require higher fire resistance ratings for building elements.

These proposals are intended to be conservative so as to promote community resiliency and disaster mitigation by protecting essential buildings with both sprinkler protection AND fire resistance rated compartmentation. These proposals may be fairly considered to be the proverbial "belt and suspenders" approach, requiring both sprinkler protection and increased fire resistance rated compartmentation in specific buildings in high risk areas for disasters.

Historically, the code has been written using the general assumption that automatic sprinklers will operate satisfactorily and there will be suitable power for such building operations. Code users design and build assuming that firefighters will be able to respond at their normal efficiencies. In some parts of the country, buildings impacted by disasters may remain without reliable water and/or power for a considerable period of time, well after the occurrence of the disaster. History has shown that increased incidents of fires after a disaster can be more destructive to life and property than the disaster itself. Total reliance on an uninterrupted power and water supply may not be an acceptable risk. It may also be an unacceptable risk to assume that firefighters will be able to respond at their normal efficiencies.

For example, more than 15% of the U.S. population lives in potential major earthquake areas. 41 states and territories have moderate to high risk. There is a real likelihood of power and water supplies being interrupted following a major seismic event, along with the potential for multiple simultaneous structure fires and also building-to-building fire spread. On October 17, 1989, a 7.1 earthquake in Santa Cruz Mountains was responsible for 26 fires in San Francisco, 60 miles from epicenter. There were 67 documented breaks in water mains which effectively eliminated water pressure in the area. On January 19, 1994, a 6.8 earthquake centered in Northridge, CA. There were approximately 100 fire ignitions, 30 to 50 of those were considered significant. The water supply systems in the area were damaged causing low pressure in water distribution. On January 17, 1995, a 6.8 (approx.) earthquake near Kobe, Japan caused 90 fires to start within minutes. 85 spread to adjacent buildings and 10 approached or reached conflagration status. 1,700 water line breaks occurred within a couple of hours. There were 7,000 buildings destroyed by fire alone.

In 1997, the Red River flooded Grand Forks, North Dakota, causing \$3.7 billion in flood losses, and displaced thousands of families and businesses. Similar data of increased fire incidents are available in other flood and hurricane-prone areas.

Undoubtedly, this will increase the cost of construction in these specific buildings. However, a recent FEMA's 2010 report "Mitigation's Value to Society" statement described how mitigation is an investment that needs to be made. A recent study by the NIBS Multihazard Mitigation Council (MMC) identified that each dollar spent on mitigation saves an average of \$4.00 in disaster recovery.

Links:

<http://www.dhSES.ny.gov/oem/mitigation/documents/mitigations-value-to-society.pdf>

The two-volume NIBS MMC study report is available for free download at:

<http://www.nibs.org/index.php/mmc/projects/nhms>

Cost Impact: Will increase the cost of construction

This code change proposal will increase the cost of construction of some building types.

---

**G171-15**

# G172-15

## 602.3

### **Proposed Change as Submitted**

**Proponent :** David Tyree, representing American Wood Council (dtyree@awc.org)

## **2015 International Building Code**

### **Revise as follows:**

**602.3 Type III.** Type III construction is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of any material permitted by this code. *Fire-retardant-treated wood* framing complying with Section 2303.2 shall be permitted within exterior wall assemblies of a 2-hour rating or less. Exterior walls complying with Section 602.4.2 or 602.4.8.2 shall be permitted.

**Reason:** Prior to the 2015 IBC, the requirements for exterior walls in Types III and IV construction were identical. They both permitted exterior walls to be of noncombustible material or to be of FRTW. The 2015 IBC now allows Cross-laminated timber, CLT, to also be used in those walls. The CLT is considered heavy timber in the 2015 IBC. So now, the Type III wall does not permit the three options of the Type IV wall. The 2015 code change created a difference that never existed and has no technical reason to continue to exist.

The exterior wall requirement for Type IV CLT walls are at least equivalent to what is currently required for FRTW exterior walls in Type III. This proposal will provide the same protection in Type III as is provided by exterior walls in Type IV construction. For a complete list of AWC code change proposals and additional information please go to <http://www.awc.org/Code-Officials/2015-IBC-Code-Changes>. For more information concerning CLT lumber and construction, please go to <http://www.rethinkwood.com/tall-wood-survey>.

**Cost Impact:** Will not increase the cost of construction  
There is no increase in cost with this proposal as it just revises the protection requirements for Type II and Type IV construction identical.

G172-15 : 602.3-  
TYREE4675

---

### **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee was uncomfortable that the research does show equivalency between walls of non-combustible materials and the wood products and engineered wood products that would be allowed by this change. These are not non-combustible materials.

**Assembly Action :**

**None**

---

### **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : David Tyree, American Wood Council, representing American Wood Council requests Approve as Submitted.**

**Commenter's Reason:** This proposal is intended to make the exterior wall requirements for Type III and IV construction consistent as they have been since the publication of the 2000 IBC. With the inclusion of CLT in the 2015 IBC for exterior walls in Type IV construction, this created a difference. The allowance of CLT in the exterior walls will not only assure that the wall has a 2 hour rating, but also will require the exterior surface of the wall to be provided with a layer of 15/32" FRTW, 1/2" gypsum board or a noncombustible material. Exterior walls in Type III construction are required to have a two hour rating and whether or not the wall is non-combustible the wall itself still has the same two hour rating and serves the same purpose. Fire resistance is typically associated with an assembly construction, and therefore considers the performance of the combination of materials which can be combustible or non-combustible. A non-combustible 2 hour wall assembly provides the same fire resistance as a two hour combustible wall assembly. While non-combustible walls may not ignite and support combustion they do react to heat in a manner that could affect the structural stability. When steel is subjected to heat it expands significantly which can either push the wall in or out, or if it is confined it can twist and turn, with the possibility of structural member failure. When steel reaches a temperature of 1000 degrees F, steel loses about fifty percent of its load carrying capacity which is completely contrary to the behavior of mass timber construction in a fire situation. When concrete is subjected to heat there is an issue with possible spalling which is the explosive ejection of chunks of concrete from the surface which is due to the breakdown in the surface tensile strength. The point here is all materials have their own separate issues when subjected to fire. The exterior wall performance should be based on "performance" not whether the wall is combustible or non-combustible.

---

**G172-15**

# G173-15

602.3

## Proposed Change as Submitted

**Proponent :** Joseph Holland, representing Hoover Treated Wood Products (jholland@frtw.com)

### 2015 International Building Code

**Revise as follows:**

**602.3 Type III.** Type III construction is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of any material permitted by this code. *Fire-retardant-treated wood-framing* complying with Section 2303.2 shall be permitted within exterior wall assemblies of a 2-hour rating or less.

**Reason:** The term "framing" is not needed to understand the FRTW is permitted "within the exterior wall assemblies."

**Cost Impact:** Will not increase the cost of construction  
There is no change in the requirements. It is only for clarification.

G173-15 : 602.3-  
HOLLAND4215

---

## Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** The proposal creates confusion because it would allow fire retardant treated wood in the exterior wall regardless of how it is used and not limited to specified structural elements. The committee preferred the solution provided by G175-15.

**Assembly Action :**

**None**

---

## Individual Consideration Agenda

*Public Comment 1:*

**Proponent :** Joseph Holland, Holland Treated Wood Products, representing Hoover Treated Wood Products (jholland@frtw.com) requests Approve as Submitted.

**Commenter's Reason:** The purpose of the change to correct the impression that only studs can be FRTW in the exterior walls of Type III construction. Fire-retardant-treated wood has been recognized for use in Type III structures for more than 50 years. During that time it has been used in the interior of the exterior walls. Recently, interpretations have resulted in the FRTW being allowed only for the studs because of the use of the term "framing". The meaning of the section is contained in the phrase "within exterior wall assemblies". Material within the wall

whether framing, backing, blocking or sheathing is permitted.  
Approval will clarify what has been done for many years.

**G173-15**

---

# G174-15

## 602.4.1

### Proposed Change as Submitted

**Proponent :** Joseph Holland, representing Hoover Treated Wood products (jholland@frtw.com)

## 2015 International Building Code

**Revise as follows:**

**602.4.1 Fire-retardant-treated wood in exterior walls.** *Fire-retardant-treated wood framing* complying with Section 2303.2 shall be permitted within exterior wall assemblies with a 2-hour rating or less.

**Reason:** The term "framing" is not needed to understand the FRTW is permitted "within the exterior wall assemblies."

**Cost Impact:** Will not increase the cost of construction  
This is a clarification no change in construction costs.

G174-15 : 602.4.1-  
HOLLAND4444

---

### Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee disapproved this item consistent with its disapproval of G173-15. G175-15 was the preferred solution to the issue.

**Assembly Action :**

**None**

---

### Individual Consideration Agenda

#### *Public Comment 1:*

**Proponent : Joseph Holland, Hoover Treated Wood Products, representing Hoover Treated Wood Products (jholland@frtw.com) requests Approve as Submitted.**

**Commenter's Reason:** The purpose of the change to correct the impression that only studs can be FRTW in the exterior walls of Type IV construction. Fire-retardant-treated wood has been recognized for use in Type IV structures for more than 50 years. During that time it has been used in the interior of the exterior walls. Recently, interpretations have resulted in the FRTW being allowed only for the studs because of the use of the term "framing". The meaning of the section is contained in the phrase "within exterior wall assemblies". Material within the wall whether framing, backing, blocking or sheathing is permitted.

Approval will clarify what has been done for many years.

G174-15

# G175-15

602.3, 602.4.1

## Proposed Change as Submitted

**Proponent :** Homer Maiel, PE, CBO, representing ICC Tri-Chapter (Peninsula, East Bay, Monterey Bay) (hmaiel@gmail.com)

### 2015 International Building Code

**Revise as follows:**

**602.3 Type III.** Type III construction is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of any material permitted by this code. *Fire-retardant-treated wood framing and sheathing* complying with Section 2303.2 shall be permitted within *exterior wall* assemblies of a 2-hour rating or less.

**602.4.1 Fire-retardant-treated wood in exterior walls.** *Fire-retardant-treated wood framing and sheathing* complying with Section 2303.2 shall be permitted within exterior wall assemblies with a 2-hour rating or less.

**Reason:** The word framing creates some confusion. some have interpreted that framing does not include the sheathing utilized for lateral resistance to be framing. This has resulted in at least one interpretation that the walls cannot have FRT structural wood panel framing and yet another interpretation that the structural wood panel is permitted to be installed but unlike the studs does not need to be FRT. ASCE considers sheathing to be part of the framing system. The ICC ES has AQ for a product equivalent to FRT plywood for use on Type III construction.

The addition of sheathing clarifies wood framing and sheathing is permitted to be within the assembly if FRT.

**Cost Impact:** Will not increase the cost of construction  
This code change does not create a new requirement. It clarifies existing code language to prevent misinterpretation of the code.

G175-15 : 602.3-  
MAIEL4965

---

## Public Hearing Results

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This solution was preferred over that proposed in G173 and G174-15. The revised text is very clear and avoids the potential confusion that FRTW could be installed in these walls for other purposes.

**Assembly Action :**

**None**

---

## Individual Consideration Agenda

*Public Comment 1:*

**Proponent : Stephen Skalko, Stephen V. Skalko, P.E. &**

**Associates, LLC, representing Masonry Alliance for Codes and Standards requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

**2015 International Building Code**

**602.3 Type III.** Type III construction is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of any material permitted by this code. *Fire-retardant-treated wood* framing and sheathing complying with Section 2303.2 shall be permitted within nonbearing exterior wall assemblies of a 2-hour rating or less.

**602.4.1 Fire-retardant-treated wood in exterior walls.** *Fire-retardant-treated wood* framing and sheathing complying with Section 2303.2 shall be permitted within nonbearing exterior wall assemblies with a 2-hour rating or less.

**Commenter's Reason:** The intent of this modification is to clarify that when FRTW framing and sheathing are used "within" an exterior wall assembly with a fire resistance rating of 2-hours or less that the portion of the wall where they are used shall be non-loadbearing. Historically building construction types in older building codes and the previous legacy codes were described based on noncombustible and/or combustible materials utilized in the building structural elements such as bearing walls, columns, beams, and floor and roofs. The construction types ranged from buildings with no combustible structural framing, to those with noncombustible exterior walls and some combustible structural framing on the interior of the building, to buildings where the majority of the structural framing was combustible. This concept of describing the building construction type based on these combinations of noncombustible and/or combustible materials is reflected in the types of construction found in Section 602 of the International Building Code and can be summarized as follows:

- Types I and II construction use mostly noncombustible materials.
- Types III and IV construction have exterior walls are of noncombustible materials but allow interior framing wholly or partly of combustible materials. Type III construction has interior framing of nominal light frame wood members. Type IV construction has interior wood members of a size to be classified as heavy timber.
- Type V construction permits structural elements, including bearing exterior walls, to be of any material permitted by the code such as nominal light frame wood members.

Both Section 602.3 for Type III construction and Section 602.4 for Type IV construction specify that exterior walls shall be of noncombustible materials. Though not explicit it is implied by the language for Type III construction and Type IV construction that fire retardant treated wood and cross-laminated lumber, which are combustible materials, are permitted to be used "within" the exterior wall assembly provided the wall assembly has a fire resistance of 2-hours or less. This term "within" indicates the combustible materials are permitted for use as a component in the exterior wall but the structural exterior wall (i.e. load-bearing wall) is still required to be noncombustible. This is further evident by Section 603.1, Item 1.2 which permits nonbearing portions of exterior walls in Type I and II construction to have where FRTW. Types I and II construction, like Types III and IV construction, also require bearing exterior walls to be noncombustible.

This modification clarifies the code and makes the code consistent with the use of FRTW in Types I, II, III and IV construction for the nonload-bearing portions of exterior walls.

Recommend Approval as Modified for G175-15.



# G176-15

602.3, 602.4, 602.4.8

## Proposed Change as Submitted

**Proponent :** Stephen Skalko, representing Masonry Alliance for Codes and Standards (svskalko@cox.net)

### 2015 International Building Code

**Revise as follows:**

**602.3 Type III.** Type III construction is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of any material permitted by this code. ~~Non-bearing Fire-retardant-treated~~ fire-retardant-treated wood framing complying with Section 2303.2 shall be permitted within *exterior wall* assemblies of a 2-hour rating or less.

**602.4 Type IV.** Type IV construction (Heavy Timber, HT) is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of solid or laminated wood without concealed spaces. The details of Type IV construction shall comply with the provisions of this section and Section ~~2304.11.~~ 2304.11.Non-bearing portions of Exterior walls complying with Section 602.4.1 or 602.4.2 shall be permitted. Minimum solid sawn nominal dimensions are required for structures built using Type IV construction (HT). For gluedlaminated members and structural composite lumber (SCL) members, the equivalent net finished width and depths corresponding to the minimum nominal width and depths of solid sawn lumber are required as specified in Table 602.4. *Cross-laminated timber* (CLT) dimensions used in this section are actual dimensions.

**602.4.8 Partitions Nonbearing partitions and walls.** ~~Partitions-~~ Nonbearing partitions and walls shall comply with Section 602.4.8.1 or 602.4.8.2.

**Reason:** Changes to the building code that allow the use of fire retardant treated wood for Types III and IV construction and cross-laminated lumber for Type IV construction have reduced the clarity in the code that these two types of construction are required to have the exterior load-bearing portions of the structure to be noncombustible materials. This is evident by the requirements in the first sentence to both 602.3 Type III and 602.4 Type IV specifying exterior walls to be noncombustible materials. It is implied, but not as clear, by the language in the last sentence of 602.3 for Type III construction and in 602.4.1 and 602.4.2 of Type IV construction, where fire retardant treated wood and cross-laminated lumber are permitted to be used "within" the exterior wall. This term "within" indicates the combustible materials are permitted for use as a component in the exterior wall but the structural exterior wall is still required to be noncombustible.

Historically building construction types in older building codes and the previous legacy codes were described based on noncombustible and/or combustible materials utilized in the building structural elements. The construction types ranged from buildings with no combustible structural framing, to those with noncombustible exterior walls and some combustible structural framing on the interior of the building, to buildings where the majority of the structural farming was combustible. This concept of describing the building construction type based on these

combinations of noncombustible and/or combustible materials is reflected in the types of construction found in the International Building Code.

Types I and II reflect the construction type where noncombustible materials are utilized. Types III and IV construction comprise construction types where the exterior walls are of noncombustible materials and the interior framing is wholly or partly of combustible materials. In the case of Type III construction the interior framing members may be nominal light frame wood members. For Type IV construction the interior wood members are expected to be of such size to be classified as heavy timber. Finally Type V construction in the code would be a building where structural elements, including bearing exterior walls are of combustible members such as nominal light frame wood members.

Further, this proposal coordinates with Section 603.1 where it currently outlines the limitations on the use of FRTW for Types I and II construction which are also based on exterior load-bearing portions of the structure being noncombustible materials. In subpart #1 of 603.1 it states the following:

- "1. Fire-retardant-treated wood shall be permitted in:
- 1.1 Nonbearing partitions where the required fire-resistance rating is 2 hours or less.
  - 1.2 Nonbearing exterior walls where fire-resistance-rated construction is not required...."

This change will make clear that the bearing portion of the exterior walls in Types III and IV construction must be noncombustible to qualify for that type of construction.

**Cost Impact:** Will not increase the cost of construction  
There is no cost impact from this change. It only clarifies the intent of the existing code.

G176-15 : 602.3-  
SKALKO5513

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The intent when FRTW was brought into the code was to allow both exterior wall and interior applications. If there was a problem with FRTW in these locations, the fire services would be raising the red flags. The committee was not presented with any data that indicates that the use of FRTW in these locations was causing problems.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : William Hall, Portland Cement Association, representing Portland Cement Association (jhall@cement.org) requests Approve as Submitted.**

**Commenter's Reason:** There appears to be a misinterpretation in the commentary to the IBC, that permits FRTW to be considered non-combustible. FRTW is not non-combustible but only fire retardant. Jurisdictions like the State of New Jersey have addressed this type of misinterpretation by appropriately amending the code. The proposal as submitted corrects that misinterpretation in the commentary. "Non-combustible" is clearly intended to mean non-combustible regardless of the construction type. There has been no documentation that fire retardant wood provides comparable performance to non-combustible construction, thus as with type I and II construction FRTW framing should remain limited to non-structural elements of exterior walls in Type III construction. Deviating from this is the same as increasing heights and areas in Type V construction.

## *Public Comment 2:*

**Proponent : Stephen Skalko, Stephen V. Skalko, P.E. & Associates, LLC, representing Masonry Alliance for Codes and Standards requests Approve as Submitted.**

**Commenter's Reason:** The General Code Committee missed the point of this proposed code change. Our intent is not to prohibit the use of FRTW in exterior or interior wall applications in Types III or IV construction. The intent of the code change is to clarify that when used "within" an exterior wall assembly with a fire resistance rating of 2-hours or less that the FRTW is used only for non-loadbearing purposes.

As pointed out previously in the reasoning statement, historically building construction types in older building codes and the previous legacy codes were described based on noncombustible and/or combustible materials utilized in the building structural elements. The construction types ranged from buildings with no combustible structural framing, to those with noncombustible exterior walls and some combustible structural framing on the interior of the building, to buildings where the majority of the structural framing was combustible. This concept of describing the building construction type based on these combinations of noncombustible and/or combustible materials is reflected in the types of construction found in the International Building Code as follows:

- Types I and II use structural elements mostly of noncombustible materials.
- Types III and IV construction have exterior walls are of noncombustible materials but allow interior framing wholly or partly of combustible materials. Type III construction has interior framing of nominal light frame wood members. Type IV construction has interior wood members of a size to be classified as heavy timber.
- Type V construction permits structural elements, including bearing exterior walls, to be of any material permitted by the code such as nominal light frame wood members.

FRTW does not qualify for a noncombustible material. However, though the code requires exterior walls of Types III and IV construction to be noncombustible, it permits FRTW "within" the noncombustible exterior walls for nonbearing purposes. This modification is consistent with Section 603.1, Item 1.2 of the code, where FRTW for Types I and II construction is permitted in nonbearing exterior walls. If FRTW framing is used as a structural element for loadbearing purposes then the building construction type becomes Type V construction per IBC Section 602.5.

**Recommend APPROVAL AS SUBMITTED for G176-15.**



# G177-15

## 602.3

### **Proposed Change as Submitted**

**Proponent :** Carl Wren, City of Austin, Texas, representing City of Austin, Texas; Planning and Development Review Department and the Austin Fire Department (carl.wren@austintexas.gov)

## **2015 International Building Code**

### **Revise as follows:**

**602.3 Type III.** Type III construction is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of any material permitted by this code. *Fire-retardant-treated wood* framing complying with Section 2303.2 shall be permitted where enclosed within exterior wall assemblies of a 2-hour rating or less. The required fire resistance shall be maintained and the exposed inner and outer faces of such exterior walls shall be noncombustible.

**Reason:** This jurisdiction has become aware of a lot of confusion as to what is required for the construction of a Type III exterior wall when the framing is fire retardant treated wood (FRTW). Some applicants have believed that the exterior wall could have FRTW plywood or OSB sheathing as the "noncombustible" exterior of the wall or that field applied ignition resistant coatings made wood sheathing noncombustible. Construction has been proposed where the FRTW plywood/OSB was to be applied directly to the FRTW framing and combustible siding installed on the exterior. These design approaches would potentially result in buildings up to 6 stories tall above the grade plane and as tall as 75-85 feet above the grade plane, without noncombustible and required fire resistive protection of the load bearing wall framing. These conditions are clearly contrary to the historical context of Type III wall construction and are at odds with the UBC source provision in section 503.4.3 of the 1997 UBC.

**Bibliography:** Uniform Building Code, International Conference of Building Officials/International Code Council, 1997 Edition, Section 503.4.3, Page 1-51

**Cost Impact:** Will not increase the cost of construction  
The proponent is proposing that the code change is a clarification and not a new requirement and therefore should not result in increased costs for code compliant construction.

G177-15 : 602.3-  
WREN5049

---

### **Public Hearing Results**

#### **Committee Action:**

**Disapproved**

**Committee Reason:** The committee understood that one of the legacy codes included text which accomplished the intent of this change. Building materials have evolved and the regulations have evolved, the committee didn't see the need to resurrect a 20 year old provision. The exterior 'noncombustible' material isn't specified. If a wall has been tested 2-hour assembly with FRTW, why isn't that assembly acceptable.

#### **Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### **Public Comment 1:**

**Proponent : Carl Wren, representing City of Austin, Texas (carl.wren@austintexas.gov) requests Approve as Submitted.**

**Commenter's Reason:** The committee noted that building materials have evolved and the proponent certainly agrees that there are many improvements. However, this proponent has seen numerous projects for which the designer submitted FRTW sheathing as the "noncombustible" exterior for the wall. While this material is good at resisting ignition, it is not noncombustible. The committee also noted the following: "If a wall has been tested 2-hour assembly with FRTW, why isn't that assembly acceptable." The proponent has seen numerous submittals from design professionals that are tested from only the inside and are not listed for exterior exposure. Given that there have been numerous fires around the country that originated outside the building but on the same property as the Type III building, not in an adjoining property, it seems wise to clearly identify that noncombustible exterior surfaces are required and that fire resistance is required to be maintained. This is particularly important given that we are evaluating our first Type III building that can be classified as a high rise. The fire service should be able to be confident of the integrity of the fire resistance of high rise and tall mid-rises (such as podium structures) as they set up fire ground operations and approach the very large mixed use buildings being constructed today.

### **Public Comment 2:**

**Proponent : Sam Francis, representing American Wood Council (sfrancis@awc.org) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

**602.3 Type III.** Type III construction is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of any material permitted by this code. *Fire-retardant-treated wood framing and sheathing* complying with Section 2303.2 shall be permitted ~~where enclosed~~ within *exterior wall* assemblies of a 2-hour rating or less. The required fire resistance shall be maintained and the exposed inner and outer ~~faces~~ surfaces of such ~~exterior walls~~ framing and sheathing shall be covered with gypsum board or other noncombustible material.

**Commenter's Reason:** The proponent stated that he was concerned with misinterpretation of this section and submitted a bibliography which included the UBC from whence this section was drawn. We agree that there is potential for misinterpretation but the original language failed to capture the subtle differences between the IBC and the UBC. The IBC drafting committee intentionally left out part of the language in the UBC which exacerbates the misinterpretation. Moreover, Chapter 6 is not the only chapter regulating the materials and cladding. Chapter 14 further regulates these issues and needs to be part of the discussion. We believe this language accomplishes the proponents intent in a manner that recognizes the various parts of the code and their impact on these walls.

**G177-15**

---

## G179-15

602.4, TABLE 602.4, 602.4.1, 602.4.2, 602.4.3, 602.4.4, 602.4.5, 602.4.9, 2304.11, 2304.11.1, TABLE 2304.11.1.1, 2304.11.2, 2304.11.3, 602.4.8, 602.4.8.2, 602.4.8.1, 602.4.6, 602.4.6.2, 602.4.6.1, 2304.11.4, 2304.11.5, 602.4.7, 2304.11.4.2 (New)

### Proposed Change as Submitted

Proponent : Dennis Richardson, representing American Wood Council

## 2015 International Building Code

Revise as follows:

**602.4 Type IV.** Type IV construction (~~Heavy Timber, HT~~) is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of solid or laminated wood heavy timber (HT), without concealed spaces. The minimum dimensions for permitted materials including solid timber, glued-laminated timber, structural composite lumber (SCL), and cross laminated timber (CLT) and details of Type IV construction shall comply with the provisions of this section and Section 2304.11. Exterior walls complying with Section 602.4.1 or 602.4.2 shall be permitted. ~~Minimum solid-sawn nominal dimensions are required for structures built using Type IV construction (HT). For glued-laminated members~~ Interior walls and structural composite lumber (SCL) members, the equivalent net finished width and depths corresponding to the minimum nominal width and depths ~~partitions of solid-sawn lumber are required as specified in Table 602.4. not less than one hour~~ Gross fire-resistance rating-laminated or heavy timber (CLT) dimensions used in this section are actual dimensions. conforming with Section 2304.11.2.2 shall be permitted.

**602.4.1 Fire-retardant-treated wood in exterior walls.** *Fire-retardant-treated wood* framing complying with Section 2303.2 shall be permitted within exterior wall assemblies not less than 6 inches (152 mm) in thickness with a 2-hour rating or less.

**602.4.2 Cross-laminated timber in exterior walls.** *Cross-laminated timber* complying with Section 2303.1.4 shall be permitted within exterior wall assemblies not less than 6 inches (152 mm) in thickness with a 2-hour rating or less, provided the exterior surface of the cross-laminated timber is protected by one the following:

1. *Fire-retardant-treated wood* sheathing complying with Section 2303.2 and not less than  $1\frac{5}{32}$  inch (12 mm) thick;
2. *Gypsum board* not less than  $\frac{1}{2}$  inch (12.7 mm) thick; or
3. A noncombustible material.

Delete without substitution:

**602.4.3 Columns.** Wood columns shall be sawn or glued-laminated and shall be not less than 8 inches (203 mm), nominal, in any dimension where supporting floor loads and not less than 6 inches (152 mm) nominal in width and not less than 8 inches (203 mm) nominal in depth where supporting roof and ceiling loads only. Columns shall be continuous or superimposed and connected in an *approved* manner. Protection in accordance with Section 704.2 is not required.

**602.4.4 Floor framing.** Wood beams and girders shall be of sawn or glued-laminated timber and shall be not less than 6 inches (152 mm) nominal in width and not less than 10 inches (254 mm) nominal in depth. Framed sawn or glued-laminated timber arches, which spring from the floor line and support floor loads, shall be not less than 8 inches (203 mm) nominal in any dimension. Framed timber trusses supporting floor loads shall have members of not less than 8 inches (203 mm) nominal in any dimension.

**602.4.5 Roof framing.** Wood frame or glued-laminated arches for roof construction, which spring from the floor line or from grade and do not support floor loads, shall have members not less than 6 inches (152 mm) nominal in width and have not less than 8 inches (203 mm) nominal in depth for the lower half of the height and not less than 6 inches (152 mm) nominal in depth for the upper half. Framed or glued-laminated arches for roof construction that spring from the top of walls or wall abutments, framed timber trusses and other roof framing, which do not support floor loads, shall have members not less than 4 inches (102 mm) nominal in width and not less than 6 inches (152 mm) nominal in depth. Spaced members shall be permitted to be composed of two or

more pieces not less than 3 inches (76 mm) nominal in thickness where blocked solidly throughout their intervening spaces or where spaces are tightly closed by a continuous wood cover plate of not less than 2 inches (51 mm) nominal in thickness secured to the underside of the members. Splice plates shall be not less than 3 inches (76 mm) nominal in thickness. Where protected by *approved* automatic sprinklers under the roof deck, framing members shall be not less than 3 inches (76 mm) nominal in width.

Revise as follows:

**602.4.9 602.4.3 Exterior structural members.** Where a horizontal separation of 20 feet (6096 mm) or more is provided, wood columns and arches conforming to heavy timber sizes complying with 2304.11 shall be permitted to be used externally.

**2304.11 Heavy timber construction.** Where a structure or a portion thereof is, or individual structural elements are required to be of ~~Type IV construction~~ heavy timber by other provisions of this code, the building elements therein shall comply with the applicable provisions of Sections 2304.11.1 through 2304.11.5 2304.11.4. Minimum dimensions of heavy timber shall comply as applicable in Table 2304.11 based on roofs or floors supported and the configuration of each structural element, or as applicable in Sections 2304.11.2 through 2304.11.4.

**2304.11.1 Columns Details of heavy timber structural members.** Columns Heavy timber structural members shall be continuous or superimposed throughout all stories by means of reinforced concrete or metal caps detailed and constructed in accordance with brackets, or shall be connected by properly designed steel or iron caps, with pintles and base plates, or by timber splice plates affixed to the columns by metal connectors housed within the contact faces, or by other *approved* methods. Sections 2304.11.1.1 through 2304.11.1.3.

**2304.11.1.1 Column connections Columns.** Minimum dimensions of columns shall be in accordance with Table 2304.11. Columns shall be continuous or superimposed throughout all stories and connected in an *approved* manner. Girders and beams at column connections shall be closely fitted around columns and adjoining ends shall be cross tied to each other, or intertied by caps or ties, to transfer horizontal loads across joints. Wood bolsters shall not be placed on tops of columns unless the columns support roof loads only. Where traditional heavy timber detailing is used, connections shall be permitted to be by means of reinforced concrete or metal caps with brackets, or shall be connected by properly designed steel or iron caps, with pintles and base plates, or by timber splice plates affixed to the columns by metal connectors housed within the contact faces, or by other *approved* methods.

**2304.11.2 2304.11.1.2 Floor framing.** Minimum dimensions of floor framing shall be in accordance with Table 2304.11. *Approved* wall plate boxes or hangers shall be provided where wood beams, girders or trusses rest on masonry or concrete walls. Where intermediate beams are used to support a floor, they shall rest on top of girders, or shall be supported by ledgers or blocks securely fastened to the sides of the girders, or they shall be supported by an *approved* metal hanger into which the ends of the beams shall be closely fitted. Where traditional heavy timber detailing is used, these connections shall be permitted to be supported by ledgers or blocks securely fastened to the sides of the girders.

**2304.11.3 2304.11.1.3 Roof framing.** Minimum dimensions of roof framing shall be in accordance with Table 2304.11. Every roof girder and at least every alternate roof beam shall be anchored to its supporting member; and every monitor and every sawtooth construction shall be anchored to the main roof construction. Such anchors shall consist of steel or iron bolts of sufficient strength to resist vertical uplift of the roof. forces as required in Chapter 16.

**602.4.8 2304.11.2 Partitions and walls.** Partitions and walls shall comply with Section 602.4.8.4 2304.11.2.1 or 602.4.8.2 2304.11.2.2.

**602.4.8.2 2304.11.2.1 Exterior walls.** Exterior walls shall permitted to be of one of the following:

4. Noncombustible materials.
1. Not less than 6 inches (152 mm) in thickness and constructed of one of the following:
  - 1.1. ~~Fire-retardant-treated wood in accordance with Section 2303.2 and complying with Section 602.4.1.~~
  - 1.1. Cross-laminated timber complying with meeting the requirements of Section 602.4.2 2303.1.4.

**602.4.8.1 2304.11.2.2 Interior walls and partitions.** *No change to text.*

**602.4.6 2304.11.3 Floors.** Floors shall be without concealed spaces. Wood floors shall be constructed in accordance with Section 602.4.6.4 2304.11.3.1 or 602.4.6.2 2304.11.3.2.

**602.4.6.2 2304.11.3.1 Cross-laminated timber floors.** *Cross-laminated timber* shall be not less than 4 inches (102 mm) in actual thickness. *Cross-laminated timber* shall be continuous from support to support and mechanically fastened to one another. *Cross-laminated timber* shall be permitted to be connected to walls without a shrinkage gap providing swelling or shrinking is considered in the design. Corbelling of masonry walls under the floor shall be permitted to be used.

**602.4.6.4 2304.11.3.2 Sawn or glued-laminated plank floors.** *No change to text.*

**Delete without substitution:**

**2304.11.4 Floor decks.** Floor decks and covering shall not extend closer than  $\frac{1}{2}$ -inch (12.7 mm) to walls. Such  $\frac{1}{2}$ -inch (12.7 mm) spaces shall be covered by a molding fastened to the wall either above or below the floor and arranged such that the molding will not obstruct the expansion or contraction movements of the floor. Corbelling of masonry walls under floors is permitted in place of such molding.

**Revise as follows:**

**2304.11.5 2304.11.4 Roof decks.** Roofs shall be without concealed spaces and roof decks shall be constructed in accordance with Section 2304.11.4.1 or 2304.11.4.2. Other types of decking shall be permitted to be used where equivalent fire resistance and structural properties are being provided. Where supported by a wall, roof decks shall be anchored to walls to resist uplift forces determined in accordance with Chapter 16. Such anchors shall consist of steel bolts, lags, screws or iron-belts approved hardware of sufficient strength to resist vertical uplift of the roof. prescribed forces.

**602.4.7 2304.11.4.1 Roofs Cross-laminated timber roofs.** ~~Roofs shall be without concealed spaces and wood roof decks shall be sawn or glued laminated, splined or tongue-and-groove plank, not less than 2 inches (51 mm) nominal in thickness;  $\frac{1}{8}$ -inch-thick (32 mm) wood structural panel (exterior glue); planks not less than 3 inches (76 mm) nominal in width, set on edge close together and laid as required for floors; or of cross-laminated timber. Other types of decking shall be permitted to be used if providing equivalent fire resistance and structural properties.~~

Cross-laminated timber roofs shall be not less than 3 inches (76 mm) nominal in in actual thickness and shall be continuous from support to support and mechanically fastened to one another.

**Add new text as follows:**

**2304.11.4.2 Sawn, wood structural panel, or glued-laminated plank roofs.**

Sawn, wood structural panel, or glued-laminated plank roofs shall be one of the following:

1. Sawn or glued laminated, splined or tongue-and-groove plank, not less than 2 inches (51 mm) nominal in thickness;
2.  $\frac{1}{8}$ -inch-thick (32 mm) wood structural panel (exterior glue);
3. Planks not less than 3 inches (76 mm) nominal in width, set on edge close together and laid as required for floors.

**Revise as follows:**

**TABLE 602.4 2304.11  
WOOD-MEMBER SIZE EQUIVALENCIES MINIMUM DIMENSIONS OF HEAVY TIMBER STRUCTURAL MEMBERS**

		MINIMUM NOMINAL SOLID SAWN SIZE	MINIMUM GLUED- LAMINATED NET SIZE	MINIMUM STRUCTURAL COMPOSITE LUMBER NET SIZE

<u>Supporting</u>	<u>Heavy Timber Structural Element</u>	<u>Width, inch</u>	<u>Depth, inch</u>	<u>Width, inch</u>	<u>Depth, inch</u>	<u>Width, inch</u>	<u>Depth, inch</u>
<u>Floor loads only or combined floor and roof loads</u>	<u>Columns; Framed sawn or glued-laminated timber arches which spring from the floor line; Framed timber trusses</u>	8	8	6 <sup>3</sup> / <sub>4</sub>	8 <sup>1</sup> / <sub>4</sub>	7	7 <sup>1</sup> / <sub>2</sub>
	<u>Wood beams and girders</u>	6	10	5	10 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>4</sub>	9 <sup>1</sup> / <sub>2</sub>
<u>Roof loads only</u>	<u>Columns (roof and ceiling loads); Lower half of: Wood-frame or glued-laminated arches which spring from the floor line or from grade</u>	6	8	5	8 <sup>1</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>4</sub>	7 <sup>1</sup> / <sub>2</sub>
	<u>Upper half of: Wood-frame or glued-laminated arches which spring from the floor line or from grade</u>	6	6	5	6	5 <sup>1</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>2</sub>
	<u>Framed timber trusses and other roof framing; <sup>a</sup></u>	4 <sub>b</sub>	6	3 <sub>b</sub>	6 <sup>7</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub> <sub>b</sub>	5 <sup>1</sup> / <sub>2</sub>

	<u>Framed or glued- laminated arches that spring from the top of walls or wall abutments</u>					
--	--	--	--	--	--	--

For SI: 1 inch = 25.4 mm.

<sup>a</sup> Spaced members shall be permitted to be composed of two or more pieces not less than 3 inches (76 mm) nominal in thickness where blocked solidly throughout their intervening spaces or where spaces are tightly closed by a continuous wood cover plate of not less than 2 inches (51 mm) nominal in thickness secured to the underside of the members. Splice lates shall be not less than 3 inches (76 mm) nominal in thickness.

<sup>b</sup> Where protected by approved automatic sprinklers under the roof deck, framing members shall be not less than 3 inches (76 mm) nominal in width.

**Reason:** The cross laminated timber product standard was approved in the 2015 IBC in addition to a code change allowing this material to be utilized for the construction of 2 hour exterior walls in type IV-HT construction.

Cross Laminated Timber has been manufactured for over 30 years in Europe and has just recently caught hold on the American Continent where some major structures are under way in Canada and smaller buildings are being built in the US. In Europe buildings of 8 to 10 stories and above are regularly constructed. The following link gives examples of CLT buildings throughout the world. <http://www.rethinkwood.com/tall-wood-survey>

Because of the high level of carbon sequestration and low embodied energy, it is anticipated there will be a renewed interest in the use of type IV heavy timber as a type of construction. One bit of feedback American Wood Council received after CLT was approved in the 2015 IBC was the observation from one building department that the heavy timber and type IV provisions are confusing, sometimes redundant and spread across different sections of the building code.

This code change is an attempt to address that concern without making any change in the substance of the requirements. Currently type IV construction and heavy timber requirements are found in Sections 602.4 and 2304.11 of the IBC. The clean up and reorganization of those sections is part one of this effort. Part two is the identification and update of many references to type IV construction and heavy timber found throughout the code.

In order to pare down Section 602.4, only the provisions specific to type IV construction remain along with a list of the types of materials found in heavy timber and the reference to the requirements for those materials in Section 2304.11. Requirements specific to type IV remain in 602.4.

Section 2304.11 can best be described as "all things heavy timber". Heavy timber structural elements have long been referenced throughout other parts of the code where a specific heavy timber structural element is detailed for use incorporated in another type of construction. The most general example of this is table 601 footnote c allowing the use of heavy timber roof construction in place of one hour fire resistance rated roof construction in types IB, II, IIIA, and VA construction. The design professional may detail heavy timber as the roof structure and assembly for these different types of construction and they are treated as building elements but the type of construction for the overall structure does not change from the type IB, II, IIIA, or VA.

Heavy timber requirements removed from Section 602.4 are combined and organized with the existing content of Section 2304. Table 602.4 is moved and renamed Table 2304.11. It is updated with information placing a description of the elements that are applicable for a given size timber element based on whether the element supports roof loads and floor loads or only roof loads. Specific footnotes about the size and protection of spaced truss elements and the reduction of roof beam width for sprinklers are noted where applicable.

The non-size related detailing provisions for framing members and connections (columns, floor framing and roof framing) are coalesced into Sections 2304.11.1.1, 2304.11.1.2 and 2304.11.1.3. All of the information in table 2304.11 and the following sections are organized so that the most pertinent information for most designs is found first.

Finally, some of the detailing provisions for traditional heavy timber are identified as such and relocated later in each section while some other information that is archaic and better replaced by reference is removed. A good example of this is the removal of the requirement for the anchorage of "every monitor and every sawtooth construction" to the main roof construction in Section 2304.11.3. New Section 2304.11.1.3 requires roof girders and alternate roof beams to be anchored to their supports as required by Chapter 16.

Finally, Sections 2304.11.2 through 2304.11.4 contain pertinent thickness and detailing requirements for walls, roof and floor deck construction.

The following table gives a more detailed description of where specific requirements are moved.

Since this change is intended not to create any new requirements or delete pertinent content, there are other code changes which contain specific code changes to this information. It is intended this code change will serve as a template for the relocation of those other specific changes through the correlation process should other specific changes be approved.

Part 2 of this effort follows with the change to specific code references to: Section 602.4, type IV construction, heavy timber and Section 2304.11.

The following link provides access to additional information regarding this or other code changes proposed by American Wood Council. <http://www.awc.org/Code-Officials/2015-IBC-Code-Changes/>

Section in 2015 IBC	Location in proposed change	Comments
602.4 Type IV	602.4 (same location)	modified to direct users to new section on heavy timber details; retains essentials for Type IV construction
Table 602.4	Table 2304.11	additional content is added describing the thickness of structural elements based on loading and configuration from 602.4.3 through 602.4.5
602.4.1 Fire-retardant treated wood in exterior walls, and 602.4.2 Cross-laminated timber in exterior walls	602.4.1 and 602.4.2 (same location)	thickness of wall assembly added from 602.4.8.2 item 2.
602.4.3 Columns	2304.11, Table 2304.11, and Section 2304.11.1.1	requirements combined with existing 2304.11.1 Columns; dimensions in new Table 2304.11.1
602.4.4 Floor framing	2304.11, Table 2304.11	
602.4.5 Roof framing	2304.11, Table 2304.11	
602.4.6 Floors	2304.11.3	
602.4.6.1 Sawn or glued-laminated plank floors	2304.11.3.2	the end of proposed Section 2304.11.3.2 comes from current 2304.11.2
602.4.6.2 Cross-laminated timber floors	2304.11.3.1	
602.4.7 Roofs	2304.11.4 and subsections 2304.11.4.1 and 2304.11.4.2	the current provisions of current section 2304.11.5 are folded into these sections
602.4.8 Partitions and walls and subsections 602.4.8.1 Interior walls and partitions and 602.4.8.2 Exterior walls	602.4 for exterior wall thickness in type IV; heavy timber in 2304.11.2 2304.11.2.1 and 2304.11.2.2	kept essentials for a Type IV building in 602.4; essentials for heavy timber in proposed section 2304.11.2
602.4.9 Exterior structural members	602.4.3	Unchanged but references proposed heavy timber section
2304.11 Heavy timber construction	2304.11 (same location)	Modified to become charging language for all heavy timber, not just Type IV construction; adds

		charging language for proposed Table 2304.11
2304.11.1 Columns	2304.11.1.1	new section 2304.11.1.1 combines current sections 2304.11.1 and 2304.11.1.1; updates text to be more design focused; retains traditional details
2304.11.1.1 Column connections	2304.11.1.1	incorporated in 2304.11.1
2304.11.2 Floor framing	2304.11.1.2	modifies text to make lesser-used methods a permitted option
2304.11.3 Roof framing	2304.11.1.3	modifies text to refer to design for all forces, not just uplift, archaic language deleted
2304.11.4 Floor decks	2304.11.3.2	current text appears at the end of the proposed section with hardware choices updated; this section incorporates requirements for floors moved from Chapter 6
2304.11.5 Roof decks	2304.11.4	current text appears at end of proposed section, and updates language to reflect current methods and to include consideration of all forces

**Cost Impact:** Will not increase the cost of construction

Since this is a reorganization of existing requirements, not the creation of new requirements, this code change will not increase the cost of construction.

G179-15 : 602.4-RICHARDSON5194

### **Public Hearing Results**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The proposal provides necessary consolidation and eliminates duplicative text between Chapters 6 and 23. The revised table is sorely needed to make help the users of the code. Moving the table to Chapter 23 is totally appropriate. The was comfort that with a detailed comparison this is a good clean up with no technical changes. As with any major revision, there remained concerns that all pieces have been maintained and there might be some unintended consequences. The new organization provides better logic for the requirements.

Assembly Action :

None

### **Individual Consideration Agenda**

**Public Comment 1:**

Proponent : **Stephen Skalko, Stephen V. Skalko, P.E. & Associates, LLC, representing self requests Disapprove.**

**Commenter's Reason:** While the General Committee is correct that G179-15 "provides the necessary consolidation and eliminates the duplicative text between Chapter 6 and 23", the proposal should have deleted the duplication of any requirements for Type IV construction from Chapter 23 and placed them in Chapter 6 where they belong. Chapter 6 is titled Types of Construction and as the scope states in Section 601.1 "the provisions of this chapter shall control the classification of buildings as to type of construction". It is the logical place where the code user would be expected to go in order to determine the requirements for the various types of construction. If the code user wants to establish what is needed to be classified as Type IV construction they would look specifically in Section 602.4. Though heavy timber is a wood material, which Chapter 23 certainly covers, the specific requirements for heavy timber types and sizes are specified in the code to meet the inherent fire resistances expected of Type IV construction, which is covered by Chapter 6. When it comes to actual materials, design, construction and quality of wood materials the user refers to Chapter 23, Wood (See scope in Section 2301.1). The proposal should have consolidated heavy timber elements critical to classifying the type of construction into Section 602.4 where these requirements belong.

**Recommend DISAPPROVAL of G179-15**

**G179-15**

# G181-15

602.4, 602.4.6, 602.4.7, 602.4.10 (New)

## Proposed Change as Submitted

**Proponent :** Paul Coats, PE CBO, American Wood Council, representing American Wood Council (pcoats@awc.org)

### 2015 International Building Code

#### Revise as follows:

**602.4 Type IV.** Type IV construction (Heavy Timber, HT) is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of solid or laminated wood without concealed spaces or with concealed spaces meeting the requirements of Section 602.4.10. The details of Type IV construction shall comply with the provisions of this section and Section 2304.11. Exterior walls complying with Section 602.4.1 or 602.4.2 shall be permitted. Minimum solid sawn nominal dimensions are required for structures built using Type IV construction (HT). For gluedlaminated members and structural composite lumber (SCL) members, the equivalent net finished width and depths corresponding to the minimum nominal width and depths of solid sawn lumber are required as specified in Table 602.4. *Cross-laminated timber* (CLT) dimensions used in this section are actual dimensions.

**602.4.6 Floors.** Floors shall be without concealed spaces or with concealed spaces meeting the requirements of Section 602.4.10. Wood floors shall be constructed in accordance with Section 602.4.6.1 or 602.4.6.2.

**602.4.7 Roofs.** Roofs shall be without concealed spaces ~~and wood~~ or with concealed spaces meeting the requirements of Section 602.4.10. ~~Wood~~ roof decks shall be sawn or glued laminated, splined or tongue-and-groove plank, not less than 2 inches (51 mm) nominal in thickness; 1<sup>1</sup>/<sub>8</sub>-inch-thick (32 mm) wood structural panel (exterior glue); planks not less than 3 inches (76 mm) nominal in width, set on edge close together and laid as required for floors; or of cross-laminated timber. Other types of decking shall be permitted to be used if providing equivalent fire resistance and structural properties.

Cross-laminated timber roofs shall be not less than 3 inches (76 mm) nominal in thickness and shall be continuous from support to support and mechanically fastened to one another.

#### Add new text as follows:

**602.4.10 Concealed spaces** Concealed spaces shall not contain combustibles other than building elements and electrical, mechanical, fire protection, or plumbing materials and equipment, shall comply with all applicable provisions of Section 718, and in addition shall be protected in accordance with at least one, or any combination, of the following:

1. The building is sprinklered throughout and automatic sprinklers are also provided in the concealed space.

2. The concealed space shall be filled completely with noncombustible insulation.

3. The concealed space shall be lined continuously with a noncombustible material, not less than 1/2-inch gypsum board, or equivalent.

**Exception:** Concealed spaces within 1-hour fire resistance rated interior walls and partitions in accordance with Section 602.4.8.1 shall not require additional protection.

**Reason:** The option of having protected concealed spaces in Type IV buildings is important to encourage the adaptive re-use of existing heavy timber buildings as well as to provide for the installation of mechanicals in Type IV cross laminated timber (CLT) construction. In addition to the current requirements for all concealed spaces in combustible construction, this change would require additional protection of the concealed spaces with sprinkler coverage, or eliminating all air space with noncombustible insulation, or covering all combustible surfaces with noncombustible materials or gypsum. If sprinkler protection is chosen, the entire building must be protected by sprinklers.

Additional information related to the proposal may be posted at:  
<http://www.awc.org/Code-Officials/2015-IBC-Code-Changes/>

**Cost Impact:** Will not increase the cost of construction

The code change provides the option of having protected concealed spaces in Type IV buildings, therefore does not increase the cost of construction.

G181-15 : 602.4-  
COATS4032

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The proposal was found to be confusing as to what was the real intent regarding the concealed spaces and what is allowed with sprinklers in these spaces. Further in the confusion is what is the intent if these spaces includes FRTW versus untreated wood. The committee was uncomfortable with third option for the treatment of concealed spaces.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : Paul Coats, PE CBO, representing American Wood Council (pcoats@awc.org) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

**602.4 Type IV.** Type IV construction (Heavy Timber, HT) is that type of construction in which the exterior walls are of noncombustible materials and

the interior building elements are of solid or laminated wood without concealed spaces or with concealed spaces meeting the requirements of Section 602.4.10. The details of Type IV construction shall comply with the provisions of this section and Section 2304.11. Exterior walls complying with Section 602.4.1 or 602.4.2 shall be permitted. Minimum solid sawn nominal dimensions are required for structures built using Type IV construction (HT). For ~~glued laminated~~ glued laminated members and structural composite lumber (SCL) members, the equivalent net finished width and depths corresponding to the minimum nominal width and depths of solid sawn lumber are required as specified in Table 602.4. *Cross-laminated timber* (CLT) dimensions used in this section are actual dimensions.

**602.4.6 Floors.** Floors shall be without concealed spaces or with concealed spaces meeting the requirements of Section 602.4.10. Wood floors shall be constructed in accordance with Section 602.4.6.1 or 602.4.6.2.

**602.4.7 Roofs.** Roofs shall be without concealed spaces or with concealed spaces meeting the requirements of Section 602.4.10. Wood roof decks shall be sawn or glued laminated, splined or tongue-and-groove plank, not less than 2 inches (51 mm) nominal in thickness; 1<sup>1</sup>/<sub>8</sub>-inch-thick (32 mm) wood structural panel (exterior glue); planks not less than 3 inches (76 mm) nominal in width, set on edge close together and laid as required for floors; or of cross-laminated timber. Other types of decking shall be permitted to be used if providing equivalent fire resistance and structural properties.

Cross-laminated timber roofs shall be not less than 3 inches (76 mm) nominal in thickness and shall be continuous from support to support and mechanically fastened to one another.

**602.4.10 Concealed spaces** Concealed spaces shall not contain combustibles other than building elements and electrical, mechanical, fire protection, or plumbing materials and equipment, shall comply with all applicable provisions of Section 718, and in addition shall be protected in accordance with at least one, or any combination, of the following:

1. The building is sprinklered throughout and automatic sprinklers are also provided in the concealed space.
2. The concealed space shall be filled completely with noncombustible insulation.
3. The concealed space shall be lined continuously with ~~a noncombustible material, not less than 1/2-inch gypsum board, or equivalent~~ noncombustible materials.

**Exception:** Concealed spaces within 1-hour fire resistance rated interior walls and partitions in accordance with Section 602.4.8.1 shall not require additional protection.

**Commenter's Reason:** The modification simplifies the third option, making protection with gypsum or noncombustible materials the only alternatives for the lining of concealed spaces in Type IV construction, if option 1 or 2 are not chosen.

These conservative criteria supersede and do not conflict with the criteria for concealed spaces in NFPA 13. If sprinklers are provided in the concealed space, they must comply with all the requirements of NFPA 13 for their design and installation. The two other alternatives prescriptively parallel provisions in NFPA 13 for protecting

concealed spaces--filling the space with noncombustible insulation (8.15.1.2.7) or covering all combustible surfaces (8.15.1.2.10). In addition, allowance for limited combustibles such as cabling or pipes also parallels the NFPA 13 provisions (8.15.1.2.1). This is a conservative approach that will allow for the practical adaptive reuse and new construction of Type IV buildings without reduction of fire safety. AWC has a web page with further information about our proposed changes and public comments: <http://www.awc.org/Code-Officials/2015-IBC-Code-Changes/>

---

**G181-15**

# G182-15

## 602.4.2, 602.4.8.2

### Proposed Change as Submitted

**Proponent :** David Tyree, American Wood Council, representing American Wood Council (dtyree@awc.org)

## 2015 International Building Code

Revise as follows:

**602.4.2 Cross-laminated timber in exterior walls.** *Cross-laminated timber* complying with Section 2303.1.4, and associated glued laminated timber and structural composite lumber elements that are rated as required for the wall, shall be permitted within exterior wall assemblies with a 2-hour rating or less, provided the exterior surface of the cross-laminated timber ~~is~~ and associated elements are protected by one the following:

1. *Fire-retardant-treated wood* sheathing complying with Section 2303.2 and not less than  $1\frac{5}{32}$  inch (12 mm) thick;
2. *Gypsum board* not less than  $1\frac{1}{2}$  inch (12.7 mm) thick; or
3. A noncombustible material.

**602.4.8.2 Exterior walls.** Exterior walls shall be of one of the following:

1. Noncombustible materials.
2. Not less than 6 inches (152 mm) in thickness and constructed of one of the following:
  - 2.1. *Fire-retardant-treated wood* in accordance with Section 2303.2 and complying with Section 602.4.1.
  - 2.2. *Cross-laminated timber and associated elements* complying with Section 602.4.2.

**Reason:** Reason: The code currently does not recognize that no member of glued laminated or SCL wood of heavy timber dimensions may be used as a beam, header, column or other member within a wall of CLT which is, itself, considered to be heavy timber. It seems rather obvious that a heavy timber element may be used within the construction of a wall of heavy timber construction. This change is intended to place into the code that which may seem obvious.

For a complete list of AWC code change proposals and additional information please go to <http://www.awc.org/Code-Officials/2015-IBC-Code-Changes>. For more information concerning CLT lumber and construction, please go to <http://www.rethinkwood.com/tall-wood-survey>.

**Cost Impact:** Will not increase the cost of construction  
No increase in construction costs as proposal only clarifies the intent of the code.

G182-15 : 602.4.2-  
TYREE4642

---

## Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee found the proposed text very confusing. They felt that the term 'associated element' was undefined. They weren't sure what the phrasing 'rated as required for the wall' was going to accomplish.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : David Tyree, representing American Wood Council requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

**602.4.2 Cross-laminated timber in exterior walls.** *Cross-laminated timber* complying with Section 2303.1.4, ~~and associated~~ including glued laminated timber and structural composite lumber ~~elements~~, that are rated as required for the wall, shall be permitted within exterior wall assemblies with a 2-hour rating or less, provided the exterior ~~surface of the cross-laminated timber and associated elements~~ surfaces are protected by one the following:

1. *Fire-retardant-treated wood* sheathing complying with Section 2303.2 and not less than  $1\frac{5}{32}$  inch (12 mm) thick;
2. *Gypsum board* not less than  $\frac{1}{2}$  inch (12.7 mm) thick; or
3. A noncombustible material.

**602.4.8.2 Exterior walls.** Exterior walls shall be of one of the following:

1. Noncombustible materials.
2. Not less than 6 inches (152 mm) in thickness and constructed of one of the following:
  - 2.1. *Fire-retardant-treated wood* in accordance with Section 2303.2 and complying with Section 602.4.1.
  - 2.2. *Cross-laminated timber, glued laminated timber or structural composite lumber* ~~and associated elements~~ complying with Section 602.4.2.

**Commenter's Reason:** The original proposal made reference to "associated elements" which caused confusion among the committee members as to what an "associated element" included. This public comment revises the proposal to specifically reference the materials which would be allowed within the 2-hour exterior wall assembly. In CLT construction, other wood structural products such as glued laminated timber and structural composite lumber are required to carry the vertical and horizontal loads which may not be able to be supported by the CLT panels alone. This proposal clarifies the intent and describes the characteristics of CLT construction.

---

**G182-15**

# G183-15

## 602.4.8.2

### **Proposed Change as Submitted**

**Proponent :** Joseph Holland, representing Hoover Treated Wood Products (jholland@frtw.com)

## **2015 International Building Code**

**Revise as follows:**

**602.4.8.2 Exterior walls.** Exterior walls shall be of one of the following:

1. Noncombustible materials.
- ~~2. Not less than 6 inches (152 mm) in thickness and constructed of one of the following:~~
- ~~2.1. 2. Fire-retardant-treated wood~~ in accordance with Section 2303.2 and complying with Section 602.4.1.
- ~~2.2. 3.. Cross-laminated timber~~ complying with Section 602.4.2 not less than 6 inches (152mm) in thickness.

**Reason:** Prior to the 2015 code there was no mandate to erect a wall constructed with FRTW to be at least 6 inches thick. This provision was added when the membership included cross laminated timber (CLT) to type four construction. No justification was submitted to explain the rationale behind the 6-inch requirement for FRTW. FRTW has been allowed in Type IV building under the UBC since the late 1960's and the IBC since its inception. We are not aware of any problems. The change to the 2015 code will make any wall constructed before the 2015 code with 2X4 studs nonconforming.

The wall load and fire resistance requirements in the code will dictate how the wall is to be constructed. A minimum thickness is not needed.

**Cost Impact:** Will not increase the cost of construction. FRTW can be used in bearing and nonbearing exterior walls in Type IV construction. For a nonbearing wall, the required fire rating could be the only factor dictating the thickness. Where no fire rating is required by Table 602 the FRTW stud could be 2X4 or less with only an exterior finish. Total thickness could be 4 inches. Using the mandatory minimum thickness the wall would have to be 2X6 with an exterior finish membrane of 1/2 or more. Assuming everything else is equal; 2X4's cost less than 2X6's.

There are two important aspects for consideration of frame construction in determining how thick a bearing wall must be: required fire rating and the load. In this case the wall needs a 2 hr rating. Depending on several factors: load, height, unsupported length, etc., a 2X4 could be used. Example: 2X4=3.5 inches. 2-5/8 inch gypsum=1.25 inches, if more than 10 feet fire separation distance the exterior finish could be a material only 1/2 inch thick or less as shown in UL V314. See link:

[http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=BXUV.V314&ccnshorttitle=Fire-resistance+Ratings+-+ANSI/UL+263&objid=1084396657&cfgid=1073741824&version=versionless&parent\\_id=10](http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=BXUV.V314&ccnshorttitle=Fire-resistance+Ratings+-+ANSI/UL+263&objid=1084396657&cfgid=1073741824&version=versionless&parent_id=10)

Total thickness=5.25 inches. Again, assuming everything else is equal: 2X4's cost less than 2X6's.

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The committee preferred the solution provided by G184-15. This proposal would result in the wood versus the wall having the minimum dimension, and therefore is grammatically confused.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : Joseph Holland, Hoover Treated Wood Products, representing Hoover Treated Wood Products (jholland@frtw.com) requests Approve as Submitted.**

**Commenter's Reason:** Prior to the 2015 code there was no mandate to erect a wall constructed with FRTW to be at least 6 inches thick. This provision was added when the membership included cross laminated timber (CLT) to type four construction. No justification was submitted to explain the rationale behind the 6-inch requirement for FRTW. FRTW has been allowed in Type IV building under the UBC since the late 1960's and the IBC since its inception. We are not aware of any problems. The change to the 2015 code will make any wall constructed before the 2015 code with 2X4 studs nonconforming.

The wall load and fire resistance requirements in the code will dictate how the wall is to be constructed. A minimum thickness is not needed for fire-retardant-treated wood.

CIT on the other hand is dependent on the thickness of the wood as the fire resistance is a function of the char rate of the wood. The wood remaining after the required fire rating must be of sufficient thickness to be able to support the load, hence the minimum thickness of the CLT.

---

**G183-15**

# G184-15

## 602.4.8.2

### **Proposed Change as Submitted**

**Proponent :** Sam Francis, American Wood Council, representing American Wood Council (sfrancis@awc.org)

## **2015 International Building Code**

**602.4.8.2 Exterior walls.** Exterior walls shall be of one of the following:

1. Noncombustible materials.
- ~~2. Not less than 6 inches (152 mm) in thickness and constructed of one of the following:~~
  - ~~2-1~~ 2. *Fire-retardant-treated wood* in accordance with Section 2303.2 and complying with Section 602.4.1.
  - ~~2-2~~ 3. *Cross-laminated timber* not less than 4 inches in thickness and complying with Section 602.4.2.

**Reason:** When these provisions were introduced into the code in the last cycle, an overall wall thickness was deemed to be desirable. However, FRTW has performed suitably without an overall wall thickness requirement and the thickness of CLT will be driven by the required fire resistance rating and structural requirements. Citing an overall wall thickness is confusing and unnecessary, but the actual minimum thickness of the CLT is perhaps useful. Therefore we are proposing to delete the overall thickness of the wall in favor of citing an associated minimum CLT thickness, which requires a re-organization of the section.

When the original code section was developed, an overall thickness of 6 inches was proposed. It included the interior gypsum board (5/8 in.), the exterior gypsum board (5/8 in.) the exterior insulation (?? in.), the exterior cladding (3/4 in.). Thus, the overall thickness included at least 2 inches of non-CLT materials not even counting the insulation which would be required by the energy code. Subtracting the 2 inches of non-CLT material leaves 4 inches of CLT as a minimum dimension. This is completely consistent with the 6 inch requirement from the 2015 IBC. Of course, for a structure of more than 2 stories or which requires a 2 hr. FRR wall, the net dimension will still need to be greater than 6 inches, overall, to achieve the fire resistance rating and the structural capacity. Generally, the structural requirements will exceed this minimum number. But having such a number is necessary to insure the integrity of such a building.

**Cost Impact:** Will not increase the cost of construction  
this change is not a substantive change and thus will not impact costs.

G184-15 : 602.4.8.2-  
FRANCIS5409

---

## **Public Hearing Results**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The proposal clarifies the intent of the requirements for minimum thickness of CLT. It will coordinate with G179-15 the committee approved earlier. There was concern that the change results in there being no minimum thickness required for FRTW used in these locations.

**Individual Consideration Agenda*****Public Comment 1:***

**Proponent : William Hall, Portland Cement Association, representing Portland Cement Association (jhall@cement.org) requests Disapprove.**

**Commenter's Reason:** Approval of this proposal does not make sense. FRTW within Type IV walls is required to be 6 inches while CLT is permitted to be 4 inches based on testimony that FRTW has performed suitably. This is a major change to allow CLT to reduce in size by 2 inches without any other data to justify. In addition, after reading carefully and putting all the parts together, it seems this proposal also reduces the required size of normal heavy timber material.

---

**G184-15**

# G185-15

## 603.1

### **Proposed Change as Submitted**

**Proponent :** Homer Maiel, PE, CBO, representing ICC Tri-Chapter (Peninsula, East Bay, Monterey Bay) (hmaiel@gmail.com)

## **2015 International Building Code**

**Revise as follows:**

### **603.1 Allowable materials.**

Combustible materials shall be permitted in buildings of Type I or II construction in the following applications and in accordance with Sections 603.1.1 through 603.1.3:

1. *Fire-retardant-treated wood* shall be permitted in:
  - 1.1. Nonbearing partitions where the required *fire-resistance rating* is 2 hours or less.
  - 1.2. Nonbearing *exterior walls* where fire-resistance-rated construction is not required.
  - 1.3. Roof construction, including girders, trusses, framing and decking.

**Exception:** In buildings of Type IA construction exceeding two *stories abovegrade plane*, *fire-retardant-treated wood* is not permitted in roof construction where the vertical distance from the upper floor to the roof is less than 20 feet (6096 mm).
  - 1.4. Balconies, porches, decks and exterior stairways not used as required exits on buildings three stories or less above grade plane.
2. Thermal and acoustical insulation, other than foam plastics, having a *flame spread index* of not more than 25.

**Exceptions:**

  1. Insulation placed between two layers of noncombustible materials without an intervening airspace shall be allowed to have a *flame spread index* of not more than 100.
  2. Insulation installed between a finished floor and solid decking without intervening airspace shall be allowed to have a *flame spread index* of not more than 200.
3. Foam plastics in accordance with Chapter 26.
4. Roof coverings that have an A, B or C classification.
5. *Interior floor finish* and floor covering materials installed in accordance with Section 804.
6. Millwork such as doors, door frames, window sashes and frames.
7. *Interior wall and ceiling finishes* installed in accordance with Sections 801 and 803.
8. *Trim* installed in accordance with Section 806.
9. Where not installed greater than 15 feet (4572 mm) above grade, show windows, nailing or furring strips and wooden bulkheads

below show windows, including their frames, aprons and show cases.

10. Finish flooring installed in accordance with Section 805.
11. Partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a *corridor* serving an *occupant load* of 30 or more shall be permitted to be constructed of *fire-retardant-treated wood* , 1-hour fire-resistance-rated construction or of wood panels or similar light construction up to 6 feet (1829 mm) in height.
12. Stages and platforms constructed in accordance with Sections 410.3 and 410.4, respectively.
13. Combustible *exterior wall coverings*, balconies and similar projections and bay or oriel windows in accordance with Chapter 14.
14. Blocking such as for handrails, millwork, cabinets and window and door frames.
15. Light-transmitting plastics as permitted by Chapter 26.
16. Mastics and caulking materials applied to provide flexible seals between components of *exterior wall* construction.
17. Exterior plastic veneer installed in accordance with Section 2605.2.
18. Nailing or furring strips as permitted by Section 803.11.
19. Heavy timber as permitted by Note c to Table 601 and Sections 602.4.7 and 1406.3.
20. Aggregates, component materials and admixtures as permitted by Section 703.2.2.
21. Sprayed fire-resistant materials and intumescent and mastic fire-resistant coatings, determined on the basis of *fire resistance* tests in accordance with Section 703.2 and installed in accordance with Sections 1705.14 and 1705.15, respectively.
22. Materials used to protect penetrations in fire-resistance-rated assemblies in accordance with Section 714.
23. Materials used to protect joints in fire-resistance-rated assemblies in accordance with Section 715.
24. Materials allowed in the concealed spaces of buildings of Types I and II construction in accordance with Section 718.5.
25. Materials exposed within plenums complying with Section 602 of the *International Mechanical Code* .
26. Wall construction of freezers and coolers of less than 1,000 square feet (92.9 m<sup>2</sup>), in size, lined on both sides with noncombustible materials and the building is protected throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

**Reason:** The addition of Sub Section 1.4 is warranted to include the requirements of Section 1406.3, Exception 1 in here.

**Cost Impact:** Will not increase the cost of construction  
The proposal is a clarification of existing requirements. It only creates cross references from one section to another. There is no technical changes to the code.

G185-15 : 603.1-  
MAIEL3437

---

## **Public Hearing Results**

**Committee Action:****Approved as Submitted**

**Committee Reason:** The committee found this to be a good additional reference to another allowance for combustible materials allowed for Types I and II construction. It is consistent in intent with many of the other items listed in this section.

**Assembly Action :****None****Individual Consideration Agenda****Public Comment 1:**

**Proponent : Lee Kranz, City of Bellevue, WA, representing Washington Association of Building Officials Technical Code Development Committee (lkranz@bellevuewa.gov); Jonathan Siu, representing Washington Association of Building Officials Technical Code Development Committee (jon.siu@seattle.gov) requests Approve as Modified by this Public Comment.**

**Modify as Follows:****2015 International Building Code**

**603.1 Allowable materials.** Combustible materials shall be permitted in buildings of Type I or II construction in the following applications and in accordance with Sections 603.1.1 through 603.1.3:

1. *Fire-retardant-treated wood* shall be permitted in:
  - 1.1. Nonbearing partitions where the required *fire-resistance rating* is 2 hours or less.
  - 1.2. Nonbearing *exterior walls* where fire-resistance-rated construction is not required.
  - 1.3. Roof construction, including girders, trusses, framing and decking.
 

**Exception:** In buildings of Type IA construction exceeding two *stories abovegrade plane*, *fire-retardant-treated wood* is not permitted in roof construction where the vertical distance from the upper floor to the roof is less than 20 feet (6096 mm).
  - 1.4. Balconies, porches, decks and exterior stairways ~~not used as required exits on buildings three stories or less above grade plane~~ constructed in accordance with Exception 1 of Section 705.2.3.1.
2. Thermal and acoustical insulation, other than foam plastics, having a *flame spread index* of not more than 25.
 

**Exceptions:**

  1. Insulation placed between two layers of noncombustible materials without an intervening airspace shall be allowed to have a *flame spread index* of not more than 100.
  2. Insulation installed between a finished floor and solid decking without intervening airspace shall be allowed to have a *flame spread index* of not

- more than 200.
3. Foam plastics in accordance with Chapter 26.
  4. Roof coverings that have an A, B or C classification.
  5. *Interior floor finish* and floor covering materials installed in accordance with Section 804.
  6. Millwork such as doors, door frames, window sashes and frames.
  7. *Interior wall and ceiling finishes* installed in accordance with Sections 801 and 803.
  8. *Trim* installed in accordance with Section 806.
  9. Where not installed greater than 15 feet (4572 mm) above grade, show windows, nailing or furring strips and wooden bulkheads below show windows, including their frames, aprons and show cases.
  10. Finish flooring installed in accordance with Section 805.
  11. Partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a *corridor* serving an *occupant load* of 30 or more shall be permitted to be constructed of *fire-retardant-treated wood*, 1-hour fire-resistance-rated construction or of wood panels or similar light construction up to 6 feet (1829 mm) in height.
  12. Stages and platforms constructed in accordance with Sections 410.3 and 410.4, respectively.
  13. Combustible *exterior wallcoverings*, balconies and similar projections and bay or oriel windows in accordance with Chapter 14.
  14. Blocking such as for handrails, millwork, cabinets and window and door frames.
  15. Light-transmitting plastics as permitted by Chapter 26.
  16. Mastics and caulking materials applied to provide flexible seals between components of *exterior wall* construction.
  17. Exterior plastic veneer installed in accordance with Section 2605.2.
  18. Nailing or furring strips as permitted by Section 803.11.
  19. Heavy timber as permitted by Note c to Table 601 and Sections 602.4.7 and 1406.3.
  20. Aggregates, component materials and admixtures as permitted by Section 703.2.2.
  21. Sprayed fire-resistant materials and intumescent and mastic fire-resistant coatings, determined on the basis of *fire resistance* tests in accordance with Section 703.2 and installed in accordance with Sections 1705.14 and 1705.15, respectively.
  22. Materials used to protect penetrations in fire-resistance-rated assemblies in accordance with

- Section 714.
23. Materials used to protect joints in fire-resistance-rated assemblies in accordance with Section 715.
  24. Materials allowed in the concealed spaces of buildings of Types I and II construction in accordance with Section 718.5.
  25. Materials exposed within plenums complying with Section 602 of the *International Mechanical Code*.
  26. Wall construction of freezers and coolers of less than 1,000 square feet (92.9 m<sup>2</sup>), in size, lined on both sides with noncombustible materials and the building is protected throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

**Commenter's Reason:** This public comment correlates this code change with FS 15-15, which was approved by the Fire Safety Committee.

The original proposal correlated with Section 1406.3, exception 1. FS 15-15 moved Section 1406.3 to a new Section 705.2.3.1. In order to avoid duplicative language in the code (with the attendant issues of maintaining both sections), this public comment turns the Committee-approved text in 603.1 into a pointer to the new 705.2.3.1.

## *Public Comment 2:*

**Proponent : Jonathan Siu, representing City of Seattle Dept of Planning & Development (jon.siu@seattle.gov) requests Disapprove.**

**Commenter's Reason:** The issues raised in this proposal are adequately covered in FS 15-15, which was approved as modified by the Fire Safety Committee. FS 15 moved the construction requirements from Chapter 14 to new Sections 705.2.3 and 705.2.4. The modification approved by the Committee added cross references in Section 603.1 to the new 705.3.1, and clarified the scope of Section 705.2.4. The text contained in this proposal is already contained in the new Section 705.2.3, so adding it in Section 603.1 would be redundant, and could lead to coordination issues between the two sections in the future.

---

G185-15

# G188-15

## TABLE 1203.3

### Proposed Change as Submitted

**Proponent :** Joseph Lstiburek (joe@buildingscience.com)

## 2015 International Building Code

Revise as follows:

**TABLE 1203.3  
INSULATION FOR CONDENSATION CONTROL**

<b>CLIMATE ZONE</b>	<b>MINIMUM R-VALUE OF AIR-IMPERMEABLE INSULATION<sup>a</sup></b>
<del>2B and 3B tile roof only</del>	<del>0 (none required)</del>
1, 2A, 2B, 3A, 3B <sup>b</sup> , 3C	<u>R-5 (none required)</u>
4C	R-10
4A, 4B	R-15
5	R-20
6	R-25
7	R-30
8	R-35

a. Contributes to, but does not supersede, thermal resistance requirements for attic and roof assemblies in Section C402.2.1 of the *International Energy Conservation Code*.

b. In climate zones 3A, 3B and 3C where air-permeable insulation is provided and applied in direct contact with the underside of the structural sheathing, it shall be a Class II vapor retarder, or shall have a Class II vapor retarder coating or covering in direct contact with the underside of the insulation.

**Reason:** This significantly reduces the cost of constructing unvented attics. It allows the use of cellulose and fiberglass insulation.

**Cost Impact:** Will not increase the cost of construction  
This will significantly reduce the cost of construction

G188-15 : T1203.3-  
LSTIBUREK5443

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The proposal didn't include data to support this technical change. The footnote was confusing because its placement in the table appears to limit its applicaiton to Climate Zone 3B, but the footnote itself addresses 3A, 3B and 3C; therefore the application is unclear. The cost impact statement is questionable because this change would add a construction requirement, but the proponent says there would be no impact on cost of construction.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : Craig Conner, representing self (craig.conner@mac.com); Joseph Lstiburek, representing self (joe@buildingscience.com) requests Approve as Modified by this Public Comment.**

**Replace Proposal as Follows:**

### **2015 International Building Code**

#### **1203.3 Unvented attic and unvented enclosed rafter assemblies.**

Unvented *attics* and unvented enclosed roof framing assemblies created by ceilings applied directly to the underside of the roof framing members/rafters and the structural roof sheathing at the top of the roof framing members shall be permitted where all the following conditions are met:

1. The unvented *attic* space is completely within the *building thermal envelope*.
2. No interior Class I vapor retarders are installed on the ceiling side (*attic* floor) of the unvented *attic* assembly or on the ceiling side of the unvented enclosed roof framing assembly.
3. Where wood shingles or shakes are used, a minimum <sup>1</sup> /4-inch (6.4 mm) vented airspace separates the shingles or shakes and the roofing underlayment above the structural sheathing.
4. In *climate zones* 5, 6, 7 and 8, any air-impermeable insulation shall be a Class II vapor retarder or shall have a Class II vapor retarder coating or covering in direct contact with the underside of the insulation.
5. Insulation shall be located in accordance with the following:
  - 5.1. Item 5.1.1, 5.1.2, 5.1.3 or 5.1.4 shall be met, depending on the air permeability of the insulation directly under the structural roof sheathing.
    - 5.1.1. Where only air-impermeable insulation is

provided, it shall be applied in direct contact with the underside of the structural roof sheathing.

5.1.2. ~~Where air-permeable insulation is provided inside the building thermal envelope, it shall be installed in accordance with Item 5.1. In addition to the air-permeable insulation installed directly below the structural sheathing, rigid board or sheet insulation shall be installed directly above the structural roof sheathing in accordance with the R values in Table 1203.3~~ 1203.3(1) for condensation control. Alternatively, in climate zones 1, 2 and 3, air permeable insulation shall comply with Table 1203.3 (2).

5.1.3. Where both air-impermeable and air-permeable insulation are provided, the *air-impermeable insulation* shall be applied in direct contact with the underside of the structural roof sheathing in accordance with Item 5.1.1 and shall be in accordance with ~~the R values in Table 1203.3(1) or Table 1203.3 for condensation control~~ 1203.3(2). The *air-permeable insulation* shall be installed directly under the *air-impermeable insulation*.

5.1.4. Alternatively, sufficient rigid board or sheet insulation shall be installed directly above the structural roof sheathing to maintain the monthly average temperature of the underside of the structural roof sheathing above 45°F (7°C). For calculation purposes, an interior air temperature of 68°F (20°C) is assumed and the exterior air temperature is assumed to be the monthly average outside air temperature of the three coldest months.

5.2. Where preformed insulation board is used as the *air-permeable insulation* layer, it shall be sealed at the perimeter of each individual sheet interior surface to form a continuous layer.

6. In climate zones 1, 2, and 3, the attic space shall be supplied with air from the occupiable space with a flow rate of not less than 50 CFM for each 1000 square feet of ceiling area.

**Exceptions:**

1. Section 1203.3 does not apply to special use structures or enclosures such as swimming pool enclosures, data processing centers, hospitals or art galleries.
2. Section 1203.3 does not apply to enclosures in *climate zones* 5 through 8 that are humidified beyond 35 percent during the three coldest months.

**TABLE 1203.3(1)  
ALTERNATIVE MOISTURE CONTROL**

<u>INSULATION TYPE</u>	<u>REQUIREMENTS</u>
<u>Air permeable insulation</u>	<u>Vapor diffusion vent at highest point of roof,</u> <u>vapor permeability <math>\geq 20</math> perms, and</u> <u>area <math>\geq 1:600</math> of ceiling area.</u>  <u>Roof slope <math>\geq 3:12</math> (25%, vertical/horizontal)</u>

**TABLE ~~1203.3~~ 1203.3(2)  
INSULATION FOR CONDENSATION CONTROL**

<b>CLIMATE ZONE</b>	<b>MINIMUM R-VALUE OF AIR-IMPERMEABLE INSULATION<sup>a</sup></b>
2B and 3B tile roof only	0 (none required)
1, 2A, 2B, 3A, 3B, 3C	R-5
4C	R-10
4A, 4B	R-15
5	R-20
6	R-25
7	R-30
8	R-35

a. Contributes to, but does not supersede, thermal resistance requirements for attic and roof assemblies in Section C402.2.1 of the *International Energy Conservation Code*.

**Commenter's Reason:** Unvented attic assemblies are most commonly constructed with spray polyurethane foam applied directly to the underside of the roof deck. This is a historically successful method of construction with over 20 years of experience. Another approach to unvented attic assemblies is to insulate over the top of the roof deck with rigid insulation boards. Again this is a historically successful method of construction with over a half century of experience. Both approaches are not low cost compared to traditional vented attic assemblies that are constructed with fiberglass batts, blown cellulose and blown fiberglass. The proposed code change allows the use of lower cost alternatives to spray polyurethane foam applied directly to the underside of the roof deck or to insulating over the top of the roof deck with rigid insulation boards to construct unvented attic

assemblies. Specifically, the proposed code change allows the use of fiberglass batts, blown cellulose and blown fiberglass. The approach is limited to Climate Zones 1, 2 and 3 based on research and historic experience over the past decade.

The proposed code change adds a vent as a moisture control measure that is needed for some types of insulation.

The proposed code change, by allowing alternatives to spray polyurethane foam, provides more material choices for designers, builders and consumers who have issues with the greenhouse gas potential of blowing agents, impacts of fire retardants and off-gassing of some spray polyurethane foam. Or just want to try a less expensive option.

The proposed code change also addresses issues with all methods of unvented attic assembly construction in Climate Zones 1, 2 and 3 that occur due to the lack of conditioning by requiring supply air to the unvented attic space.

For an explanation with figures and pictures, and support for the statement that the change can reduce costs, see "Venting Vapor":

<http://www.buildingscience.com/documents/insights/bsi-088-venting-vapor?topic=doctypes/insights>

For more history of conditioned attics, see "Cool Hand Luke Does Attics":

<http://www.buildingscience.com/documents/insights/bsi-077-cool-hand-luke-meets-attics/view>

For the recently completed technical data the committee referred to:

<http://www.buildingscience.com/documents/bareports/ba-1409-field-testing-unvented-roofs-asphalt-shingles-col-hot-humid-climates/view>

---

**G188-15**

# G190-15

1207.2, 1207.3

## Proposed Change as Submitted

**Proponent :** David Tyree, representing American Wood Council (dtyree@awc.org)

### 2015 International Building Code

**Revise as follows:**

**1207.2 Air-borne sound.** Walls, partitions and floor/ceiling assemblies separating *dwelling units* and *sleeping units* from each other or from public or service areas shall have a sound transmission class of not less than 50, or not less than 45 if field tested, for air-borne noise when tested in accordance with ASTM E 90. Alternatively, the sound transmission class of walls, partitions and floor/ceiling assemblies shall be established by engineering analysis based on a comparison of walls, partitions and floor/ceiling assemblies having sound transmission class ratings as determined by the test procedures set forth in ASTM E 90. Penetrations or openings in construction assemblies for piping; electrical devices; recessed cabinets; bathtubs; soffits; or heating, ventilating or exhaust ducts shall be sealed, lined, insulated or otherwise treated to maintain the required ratings. This requirement shall not apply to entrance doors; however, such doors shall be tight fitting to the frame and sill.

**1207.3 Structure-borne sound.** Floor/ceiling assemblies between *dwelling units* and *sleeping units* or between a *dwelling unit* or *sleeping unit* and a public or service area within the structure shall have an impact insulation class rating of not less than 50, or not less than 45 if field tested, when tested in accordance with ASTM E 492. Alternatively, the impact insulation class of floor/ceiling assemblies shall be established by engineering analysis based on a comparison of floor/ceiling assemblies having impact insulation class ratings as determined by the test procedures set forth in ASTM E492.

**Reason:** Reason: The proposed performance alternative recognizes the current practice of STC and IIC interpolation based on data from testing performed in accordance with ASTM E90 and ASTM E492. It mirrors provisions of Section 703.3, which provides a similar engineering analysis alternative for establishing fire resistance ratings, thereby providing flexibility for designers. For a complete list of AWC code change proposals and additional information please go to <http://www.awc.org/Code-Officials/2015-IBC-Code-Changes>.

**Cost Impact:** Will not increase the cost of construction  
This proposal does not increase the cost of construction as it only recognizes the use of ASTM E90 and E492.

G190-15 : 1207.2-  
TYREE4803

---

## Public Hearing Results

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** The proposal allows for a performance based option for complying with the requirements of this section..

**Assembly Action :**

**None**

---

### **Individual Consideration Agenda**

#### *Public Comment 1:*

**Proponent : Jonathan Humble, American Iron and Steel Institute, representing American Iron and Steel Institute (jhumble@steel.org) requests Disapprove.**

**Commenter's Reason:** This subject is much more complicated than it appears. Whether taking on the services of an acoustical design professional or a researcher from an acoustic laboratory, the process of engineering values to determine estimated STC and IIC values without testing are difficult. Developing an engineering analysis does not entail merely examining one or two acoustic test reports, and determine from similarities in those reports, to estimate a proposed design's acoustic rating(s). Such a task requires considerable experience, knowledge of the characteristics of individual materials, and available information (e.g. test reports), in order to estimate the STC or IIC value of an assembly.

The process becomes more difficult and complicated when the reference design contains a product or material which has not been tested, but which is intended to be incorporated into the proposed design for the building. The question then becomes "how to evaluate the non-tested product in this assembly without tested information?"

Further, the proposal contains several faults, as follows:

- Allows anyone to perform an engineering analysis,
- Does not allow the code official to approve the engineering analysis approach option,
- Assumes that a sufficient amount of tested design information is open to the public, when in fact the majority of laboratory tests are in private hands.

Also, contrary to the code development committee comments at the spring hearing, this proposal will not permit greater opportunities for estimating Impact Insulation Class (IIC) designs through the option of engineering analysis. Since the engineering analysis requires multiple tested designs from which to apply professional judgment, the less tested designs there are the less opportunity there is to reasonably estimate an IIC rating of a proposed assembly.

In view of the above we recommend that this proposal be disapproved.

#### *Public Comment 2:*

**Proponent : J. Michael Spencer, representing JMS Acoustics LLC (mspencer@JMSAcoustics.com) requests Disapprove.**

**Commenter's Reason:** I am concerned that some people may use the "engineering analysis" route to legally pass substandard assemblies and partitions. The way it is worded, the "engineering analysis" seems just as valid as a laboratory or field test, when it clearly is not. There is no standard for the "engineering analysis," and the variation in these analyses may be significant. As such, this should not be part of the code.

# G191-15

202 (New), 1208.3, 1208.4

## Proposed Change as Submitted

**Proponent :** Lee Kranz, representing Washington Association of Building Officials Technical Code Development Committee  
(lkranz@bellevuewa.gov)

## 2015 International Building Code

Add new definition as follows:

### SECTION 202 DEFINITIONS

**DWELLING UNIT, EFFICIENCY** A dwelling unit containing not more than one habitable room.

Revise as follows:

**1208.3 Room area.** Every *dwelling unit* shall have no fewer than one room that shall have not less than 120 square feet (13.9 m<sup>2</sup>) of *net floor area*. Other habitable rooms shall have a *net floor area* of not less than 70 square feet (6.5 m<sup>2</sup>). Efficiency dwelling units shall be in accordance with Section 1208.4.

**Exception:** Kitchens are not required to be of a minimum floor area.

**1208.4 Efficiency dwelling units.** An efficiency ~~living~~ dwelling unit shall conform to the requirements of the code except as modified herein:

1. The unit shall have a living room of not less than 220 square feet (20.4 m<sup>2</sup>) of floor area. An additional 100 square feet (9.3 m<sup>2</sup>) of floor area shall be provided for each occupant of such unit in excess of two.
2. The unit shall be provided with a separate closet.
3. The unit shall be provided with a kitchen sink, cooking appliance and refrigeration facilities, each having a clear working space of not less than 30 inches (762 mm) in front. Light and *ventilation* conforming to this code shall be provided.
4. The unit shall be provided with a separate bathroom containing a water closet, lavatory and bathtub or shower.

**Reason:** The current provisions of Section 1208.4 have no purpose in the building code because the scoping of these provisions depends on what is meant by "efficiency dwelling unit". Absent a clear definition of what an Efficiency Dwelling Unit (EDU) is in the building code there is no way to enforce the efficiency dwelling unit provisions found in IBC Section 1208.4. "Efficiency dwelling unit" is not a commonly used term, but our understanding is that it is what is more commonly called a studio apartment.

According to Section 1208.3, dwelling units may consist of a single room of 120 square feet. For example, this could be a single 10' X 12' room. This is not an acceptable amount of space for a dwelling unit. This code change will require that at least one room of not less than 220 square feet be provided in dwelling units containing only a single habitable room. It will also require a separate closet, bathroom, kitchen sink, a cooking appliance, & a refrigerator as well as the

application of light and ventilation regulations.

**Cost Impact:** Will not increase the cost of construction

This code change adds a definition to clarify what an efficiency dwelling unit is and does not change the cost to construction.

**G191-15 : 1208.3-  
KRANZ3736**

---

### **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The code already sufficiently addresses these issues. However, we may need to address smaller square footages in the code in the future.

**Assembly Action :**

**None**

---

### **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : Lee Kranz, City of Bellevue, WA, representing Washington Association of Building Officials Technical Code Development Committee (lkranz@bellevuewa.gov) requests Approve as Submitted.**

**Commenter's Reason:** What is an "Efficiency dwelling unit"? Ask 10 different people and you'll get 10 answers. We need a definition of efficiency dwelling unit in order to apply Section 1208.4. The definition doesn't change the requirements in Section 1208.4 at all, as one member of the Committee alluded, or any other requirements for room size. We are only stating under what circumstances the requirements in Section 1208.4 apply. Absent a definition, Section 1208.4 is meaningless--the requirements are not scoped anywhere else.

**G191-15**

---

# G193-15

2901, [P] 2901.1, 2902, [P] 2902.1, [P] TABLE 2902.1, [P] 2902.1.1, [P] 2902.1.2, [P] 2902.2, [P] 2902.2.1, [P] 2902.3, [P] 2902.3.1, [P] 2902.3.2, [P] 2902.3.3, [P] 2902.3.4, [P] 2902.3.5, [P] 2902.3.6, [P] 2902.4, [P] 2902.4.1, [P] 2902.5, [P] 2902.6

## Proposed Change as Submitted

**Proponent :** Janine Snyder, City of Thornton, Colorado, representing Colorado Association of Plumbing & Mechanical Officials (CAPMO) (Janine.Snyder@cityofthornton.net)

### 2015 International Building Code

Delete without substitution:

#### CHAPTER 29 PLUMBING SYSTEMS

#### SECTION 2901- GENERAL

**[P] 2901.1 Scope.** The provisions of this chapter and the *International Plumbing Code* shall govern the erection, installation, *alteration*, repairs, relocation, replacement, addition to, use or maintenance of plumbing equipment and systems. Toilet and bathing rooms shall be constructed in accordance with Section 1210. Plumbing systems and equipment shall be constructed, installed and maintained in accordance with the *International Plumbing Code*. Private sewage disposal systems shall conform to the *International Private Sewage Disposal Code*.

#### SECTION 2902- MINIMUM PLUMBING FACILITIES

TABLE 2902.1  
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES<sup>a</sup> (See Sections 2902.1.1 and 2902.2)

No.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (URINALS SEE SECTION 419.2 OF THE INTERNATIONAL PLUMBING CODE)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAINS (SEE SECTION 410 OF THE INTERNATIONAL PLUMBING CODE)	OTHER
				Male	Female	Male	Female			
4	Assembly (continued)	A-1 <sup>d</sup>	Theaters and other buildings for the performing arts and motion pictures	1 per 125	1 per 65	1 per 200		—	1 per 500	1 service sink
		A-2 <sup>d</sup>	Nightclubs, bars, taverns, dance halls and buildings for similar purposes	1 per 40	1 per 40	1 per 75		—	1 per 500	1 service sink
			Restaurants, banquet halls and food courts	1 per 75	1 per 75	1 per 200		—	1 per 500	1 service sink
		A-3 <sup>d</sup>	Auditoriums without	1 per 125	1 per 65	1 per 200		—	1 per 500	1 service

			permanent seating, art galleries, exhibition halls, museums, lecture halls, libraries, arcades and gymnasiums						sink
			Passenger terminals and transportation facilities	1-per 500	1-per 500	1-per 750	—	1-per 1,000	1 service sink
			Places of worship and other religious services	1-per 150	1-per 75	1-per 200	—	1-per 1,000	1 service sink

No.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER-CLOSETS (URINALS SEE SECTION 419.2 OF THE INTERNATIONAL PLUMBING CODE)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAINS (SEE SECTION 410 OF THE INTERNATIONAL PLUMBING CODE)	OTHER
				Male	Female	Male	Female			
4	Assembly	A-4	Coliseums, arenas, skating rinks, pools and tennis courts for indoor sporting events and activities	1-per 75 for the first 1,500 and 1-per 120 for the remainder exceeding 1,500	1-per 40 for the first 1,520 and 1-per 60 for the remainder exceeding 1,520	1 per 200	1-per 150	—	1-per 1,000	1 service sink
		A-5	Stadiums, amusement parks, bleachers and grandstands for outdoor sporting events and activities	1-per 75 for the first 1,500 and 1-per 120 for the remainder exceeding 1,500	1-per 40 for the first 1,520 and 1-per 60 for the remainder exceeding 1,520	1 per 200	1-per 150	—	1-per 1,000	1 service sink
2	Business	B	Buildings for the transaction of business, professional services, other services involving merchandise, office	1-per 25 for the first 50 and 1-per 50 for the remainder exceeding 50		1-per 40 for the first 80 and 1-per 80 for the remainder exceeding 80		—	1-per 100	1 service sink <sup>a</sup>

			buildings, banks, light industrial and similar uses					
3	Educational	E	Educational facilities	1 per 50	1 per 50	—	1 per 100	1 service sink
4	Factory and industrial	F-1 and F-2	Structures in which occupants are engaged in work fabricating, assembly or processing of products or materials	1 per 100	1 per 100	See Section 411 of the <i>International Plumbing Code</i>	1 per 400	1 service sink
5	Institutional	I-1	Residential care	1 per 10	1 per 10	1 per 8	1 per 100	1 service sink
		I-2	Hospitals, ambulatory nursing home care recipient <sup>b</sup>	1 per room <sup>c</sup>	1 per room <sup>c</sup>	1 per 15	1 per 100	1 service sink
		-	Employees, other than residential care <sup>b</sup>	1 per 25	1 per 35	—	1 per 100	—
		-	Visitors, other than residential care	1 per 75	1 per 100	—	1 per 500	—
		I-3	Prisons <sup>b</sup>	1 per cell	1 per cell	1 per 15	1 per 100	1 service sink
		I-3	Reformatories, detention centers and correctional centers <sup>b</sup>	1 per 15	1 per 15	1 per 15	1 per 100	1 service sink
		-	Employees <sup>b</sup>	1 per 25	1 per 35	—	1 per 100	—
		I-4	Adult day care and child day care	1 per 15	1 per 15	1	1 per 100	1 service sink

No.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (URINALS SEE SECTION 419.2)	LAVATORIES	BATHTUBS OR SHOWERS	DRINKING FOUNTAINS (SEE SECTION 410 OF THE	OTHER
-----	----------------	-----------	-------------	---	------------	---------------------	--	-------

				OF THE INTERNATIONAL PLUMBING CODE)					INTERNATIONAL PLUMBING CODE)	
				Male	Female	Male	Female			
6	Mercantile	M	Retail stores, service stations, shops, salesrooms, markets and shopping centers	1 per 500		1 per 750		—	1 per 1,000	1 service sink <sup>e</sup>
7	Residential	R-1	Hotels, motels, boarding houses (transient)	1 per sleeping unit		1 per sleeping unit		1 per sleeping unit	—	1 service sink
		R-2	Dormitories, fraternities, sororities and boarding houses (not transient)	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		R-2	Apartment house	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per 20 dwelling units
		R-3	One- and two-family dwellings and lodging houses with five or fewer guest rooms	1 per dwelling unit		1 per 10		1 per dwelling unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per dwelling unit
		R-3	Congregate living facilities with 16 or fewer persons	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		R-4	Congregate living facilities	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink

			with 16 or fewer persons					
8	Storage	S-1-S-2	Structures for the storage of goods, warehouses, storehouses and freight depots, low and moderate hazard	1 per 100	1 per 100	See Section 411 of the <i>International Plumbing Code</i>	1 per 1,000	1 service sink

a. The fixtures shown are based on one fixture being the minimum required for the number of persons indicated or any fraction of the number of persons indicated. The number of occupants shall be determined by this code.

b. Toilet facilities for employees shall be separate from facilities for inmates or care recipients.

c. A single-occupant toilet room with one water closet and one lavatory serving not more than two adjacent patient *sleeping units* shall be permitted, provided that each patient *sleeping unit* has direct access to the toilet room and provisions for privacy for the toilet room user are provided.

d. The occupant load for seasonal outdoor seating and entertainment areas shall be included when determining the minimum number of facilities required.

e. For business and mercantile occupancies with an occupant load of 15 or fewer, service sinks shall not be required.

**[P] 2902.1 Minimum number of fixtures.** Plumbing fixtures shall be provided in the minimum number as shown in Table 2902.1 based on the actual use of the building or space. Uses not shown in Table 2902.1 shall be considered individually by the code official. The number of occupants shall be determined by this code.

**[P] 2902.1.1 Fixture calculations.** To determine the *occupant load* of each sex, the total *occupant load* shall be divided in half. To determine the required number of fixtures, the fixture ratio or ratios for each fixture type shall be applied to the *occupant load* of each sex in accordance with Table 2902.1. Fractional numbers resulting from applying the fixture ratios of Table 2902.1 shall be rounded up to the next whole number. For calculations involving multiple occupancies, such fractional numbers for each occupancy shall first be summed and then rounded up to the next whole number.

**Exception:** The total *occupant load* shall not be required to be divided in half where *approved* statistical data indicate a distribution of the sexes of other than 50 percent of each sex.

**[P] 2902.1.2 Family or assisted-use toilet and bath fixtures.** Fixtures located within family or assisted-use toilet and bathing rooms required by Section 1109.2.1 are permitted to be included in the number of required fixtures for either the male or female occupants in assembly and mercantile occupancies.

**[P] 2902.2 Separate facilities.** Where plumbing fixtures are required, separate facilities shall be provided for each sex.

**Exceptions:**

1. Separate facilities shall not be required for *dwelling units* and *sleeping units*.
2. Separate facilities shall not be required in structures or tenant spaces with a total *occupant load*, including both employees and customers, of 15 or fewer.
3. Separate facilities shall not be required in mercantile occupancies in which the maximum occupant load is 100 or less.

**[P] 2902.2.1 Family or assisted-use toilet facilities serving as separate facilities.** Where a building or tenant space requires a separate toilet facility for each sex and each toilet facility is required to have only one water closet, two family or assisted-use toilet facilities shall be permitted to serve as the required separate facilities. Family or assisted-use toilet facilities shall not be required to be identified for exclusive use by either sex as required by Section 2902.4.

**[P] 2902.3 Employee and public toilet facilities.** Customers, patrons and visitors shall be provided with public toilet facilities in structures and tenant spaces intended for public utilization. The number of plumbing fixtures located within the required toilet facilities shall be provided in accordance with Section 2902.1 for all users. Employees shall be provided with toilet facilities in all occupancies. Employee toilet facilities shall be either separate or combined employee and public toilet facilities.

**Exception:** Public toilet facilities shall not be required in:

1. Open or enclosed parking garages where there are no parking attendants.
2. Structures and tenant spaces intended for quick transactions, including takeout, pickup and drop-off, having a public access area less than or equal to 300 square feet (28 m<sup>2</sup>).

**[P] 2902.3.1 Access.** The route to the public toilet facilities required by Section 2902.3 shall not pass through kitchens, storage rooms or closets. Access to the required facilities shall be from within the building or from the exterior of the building. Routes shall comply with the accessibility requirements of this code. The public shall have access to the required toilet facilities at all times that the building is occupied.

**[P] 2902.3.2 Location of toilet facilities in occupancies other than malls.** In occupancies other than covered and open mall buildings, the required public and employee toilet facilities shall be located not more than one story above or below the space required to be provided with toilet facilities, and the path of travel to such facilities shall not exceed a distance of 500 feet (152 m).

**Exception:** The location and maximum distances of travel to required employee facilities in factory and industrial occupancies are permitted to exceed that required by this section, provided that the location and maximum distance of travel are *approved*.

**[P] 2902.3.3 Location of toilet facilities in malls.** In covered and open mall buildings, the required public and employee toilet facilities shall be located not more than one story above or below the space required to be provided with toilet facilities, and the path of travel to such facilities shall not exceed a distance of 300 feet (91 m). In mall buildings, the required facilities shall be based on total square footage (m<sup>2</sup>) within a covered mall building or within the perimeter line of an open mall building, and facilities shall be installed in each individual store or in a central toilet area located in accordance with this section. The maximum distance of travel to central toilet facilities in mall buildings shall be measured from the main entrance of any store or tenant space. In mall buildings, where employees' toilet facilities are not provided in the individual store, the maximum distance of travel shall be measured from the employees' work area of the store or tenant space.

**[P] 2902.3.4 Pay facilities.** Where pay facilities are installed, such facilities shall be in excess of the required minimum facilities. Required facilities shall be free of charge.

**[P] 2902.3.5 Door locking.** Where a toilet room is provided for the use of multiple occupants, the egress door for the room shall not be lockable from the inside of the room. This section does not apply to family or assisted-use toilet rooms.

**[P] 2902.3.6 Prohibited toilet room location.** Toilet rooms shall not open directly into a room used for the preparation of food for service to the public.

**[P] 2902.4 Signage.** Required public facilities shall be provided with signs that designate the sex as required by Section 2902.2. Signs shall be readily visible and located near the entrance to each toilet facility. Signs for accessible toilet facilities shall comply with Section 1111.

**[P] 2902.4.1 Directional signage.** Directional signage indicating the route to the required public toilet facilities shall be posted in a lobby, corridor, aisle or similar space, such that the sign can be readily seen from the main entrance to the building or tenant space.

**[P] 2902.5 Drinking fountain location.** Drinking fountains shall not be required to be located in individual tenant spaces provided that public drinking fountains are located within a distance of travel of 500 feet (152 m) of the most remote location in the tenant space and not more than one story above or below the tenant space. Where the tenant space is in a covered or open mall, such distance shall not exceed 300 feet (91-440 mm). Drinking fountains shall be located on an accessible route.

**[P] 2902.6 Small occupancies.** Drinking fountains shall not be required for an occupant load of 15 or fewer.

**Reason:** Chapter 29 is merely a reprint of specific sections out of the International Plumbing Code. There is no justification for reprinting verbiage from another code into the Building Code unless the language is specifically a building code item such as masonry fireplaces as referenced in Chapter 28. Instead, allow the charging statement in 2901 to direct the code official to the proper code or codes as done in Chapter 28 for Mechanical Systems.

**Cost Impact:** Will not increase the cost of construction

This will not increase the cost of construction as it is not adding additional code requirements it is merely directing the proponent to the correct code.

**Analysis:** This code change proposal addresses the scope and application of the International Building Code, Chapter 29. The action taken by the IBC-General Committee on this proposal coupled with the final action taken at the 2015 Public Comment Hearings and subsequent online consensus vote will be limited to an advisory recommendation to the ICC Board of Directors who will determine the final disposition on this proposed change in accordance with Section 1.3 of CP 28 which stipulates that the Board determines the scope of the I-Codes.

G193-15 : 2902-SNYDER4424

---

### **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** Toilet room requirements and the required number of plumbing fixtures are building design issues and, as such, this information should remain in the building code. Furthermore, the required number of plumbing fixtures are based on occupant load and the occupant load is also addressed in the building code.

**Assembly Action :**

**None**

---

### **Individual Consideration Agenda**

**Public Comment 1:**

Proponent : **Janine Snyder, City of Thornton, Colorado, representing Colorado Association of Plumbing & Mechanical Officials, CAPMO (Janine.Snyder@cityofthornton.net) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

**2015 International Building Code**

#### **SECTION 2901 GENERAL**

**[P] 2901.1 Scope.** The provisions of this chapter and the *International Plumbing Code* shall govern the erection, installation, *alteration*, repairs, relocation, replacement, addition to, use or maintenance of plumbing equipment and systems. Toilet and bathing rooms shall be constructed in accordance with Section 1210. Plumbing systems and equipment shall be constructed, installed and maintained in accordance with the *International Plumbing Code*. Private sewage disposal systems shall conform to the *International Private Sewage*

Disposal Code

**Commenter's Reason:** Chapter 29 is merely a reprint of specific sections out of the International Plumbing Code. There is no justification for reprinting verbiage from another code into the Building Code unless the language is specifically a building code item such as masonry fireplaces as referenced in Chapter 28. Instead, allow the charging statement in 2901 to direct the code official to the proper code or codes as done in Chapter 28 for Mechanical Systems. The design provisions in the Mechanical Code for mechanical ventilation for example are also based on occupant load calculations like plumbing fixture counts however, those provisions are not reprinted in the International Building Code.

**Analysis:** As noted above, this code change proposal addresses the scope and application of the International Building Code, Chapter 29. The action taken by the IBC-General Committee on this proposal coupled with the final action taken at the 2015 Public Comment Hearings and subsequent online consensus vote will be limited to an advisory recommendation to the ICC Board of Directors who will determine the final disposition on this proposed change in accordance with Section 1.3 of CP 28 which stipulates that the Board determines the scope of the I-Codes.

G193-15

# G195-15

## 3001.2 (New)

### **Proposed Change as Submitted**

**Proponent:** Andrew Cid, representing Private Citizen for The Initiative for Emergency Elevator Communication Systems for the Deaf, Hard of Hearing and Speech Impaired (andycid99@gmail.com)

## 2015 International Building Code

**Add new text as follows:**

**3001.2 Emergency elevator communication systems for the deaf, hard of hearing and speech impaired** An emergency two-way communication system shall be provided that:

1. Is a visual text-based and a video-based live interactive system,
2. Is fully accessible by the deaf and hard of hearing and speech impaired, and
3. Is located between the elevator car and the local emergency authorities at a point outside of the hoistway.

**Reason:** Reason for Addition / Change to the Language of IBC 3001.2: The addition of the terms "visual, text-based and video-based live interactive communication systems" is strongly recommended to emphasize the need for totally accessible communication in elevators between local government emergency authorities and individuals who are: Deaf, Hard of Hearing, and Speech Impaired. This type of communication system is long overdue and strongly recommended for installation and retrofit into public elevators in existing buildings and for new construction. A similar proposal was considered by the A117.1 Standards Committee in 2014, but not approved. The IBC and IEBC should take the lead on this topic and establish this requirement that is needed by our communities..

**Cost Impact:** Will not increase the cost of construction  
Cost Impact - The cost impact, to a recommended 70% of the existing building inventory for public and commercial buildings that are three (3) stories or higher with elevators, is expected to be negligible or minimal to the building owner / operator. Any costs incurred is anticipated to be alleviated with the use of various incentives such as tax write offs for complying with new accessibility standards. In addition, for new construction, it is expected that there will be no significant additional costs involved because it will be built into the design / build. For existing buildings, the estimated cost for such a system is approximately \$2,500. For new construction, the system will cost approximately \$5,000.

G195-15 : 3001.2 (New)-  
CID3932

---

## **Public Hearing Results**

**Committee Action:**

**Approved as Modified**

**Modification:**

**3001.2 Emergency elevator communication systems for the deaf, hard of hearing and speech impaired.** An emergency two-way communication system shall be provided that:

1. Is a visual and text-based and a video-based 24/7 live interactive system~~7.~~
2. Is fully accessible by the: deaf and hard of hearing ~~and,~~ the speech impaired, ~~the visually impaired,~~ and shall include voice-only options for hearing individuals.
3. ~~Is located between the elevator car~~The ability to communicate with emergency personnel utilizing existing video conferencing technology, and the local emergency authorities at a point outside of the hoistway~~chat / text software, or other approved technology.~~

**Committee Reason:** This belongs in the code. A significant part of the population is serviced by this proposal where currently there is a void. Current technologies should be able to be readily adapted to meet the requirements of this proposal. The committee approved modifications are intended to provide more flexibility and options for manufacturers and for compliance.

**Assembly Motion:**

**Disapprove**

**Online Vote Results:**

**Successful**

Support: 69.77% (217) Oppose: 30.23% (94)

**Assembly Action :**

**Disapproved**

---

**Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : karen francis, representing self (karenfrancis99@gmail.com) requests Approve as Modified by Committee.**

**Commenter's Reason:** I fully support proposal # IBC-G-G195-15 as modified by the committee by CID 3 because, as an individual who is severely hard of hearing, I feel this proposal is long overdue and this is a life / safety issue that needs to be addressed as soon as possible. The technology exists so there is no reason to put this off any longer.

## Public Comment 2:

**Proponent : Michael Trentadue, VTCSecure, representing VTCSecure requests Approve as Modified by Committee.**

**Commenter's Reason:** I am in support that elevators should contain fully accessible emergency communication systems for the Deaf & Hard of Hearing Communities. Video Relay service for the Deaf and Hard of Hearing has been around for almost two decades. It is a huge safety risk not having a way for the Deaf and Hard of Hearing communities to call for help.

## Public Comment 3:

**Proponent : Andrew Cid, representing self (andycid99@gmail.com) requests Approve as Modified by this Public Comment.**

**Further Modify as Follows:**

### 2015 International Building Code

**3001.2 Emergency elevator communication systems for the deaf, hard of hearing and speech impaired .** ~~An~~ Where provided in elevators, emergency two-way communication systems shall provide video, audio, and text options for live interactive communication between elevator occupants and responding personnel. The video, audio, and text communications shall be provided that:-

- ~~1. Is a visual text based and a video based live interactive system,~~
  - ~~2. Is fully accessible by operational during the deaf and hard of hearing and speech impaired, and~~
  - ~~3. Is located between hours the elevator car and the local emergency authorities at a point outside of the hoistway.~~
- communications system is operational.

**Commenter's Reason:** G 195-15 was approved by the IgCC Committee as modified. The Committee Reason is as follows:

"This belongs in the code. A significant part of the population is serviced by this proposal where currently there is a void. Current technologies should be able to be readily adapted to meet the requirements of this proposal. The committee approved modifications are intended to provide more flexibility and options for manufacturers and for compliance."

However, for the 07/17/2015 due date, I am submitting this new public comment to the ICC and IBC, as owner of the previously approved, as modified, proposed code change. The proposed public comment is a simplification and clarification.

The amended wording offers a much more simplified and bullet-proof version to the previously approved version. This code change proposal offers full accessibility to all, not just the hearing impaired. The aim of this version is to clarify in very simple terms what is needed in the code. This code change is strongly recommended to emphasize the need for fully accessible communication in elevators between first responders and entrapped individuals who cannot use the current auditory systems that are present in all elevators.

The IBC and ICC should take the lead on this and permit the code change, approved, as modified, per IBC-G 195-15 CID 3, dated 4/25/15, and per this Public Comment submission, dated 07/17/2015. There are ample and substantive reasons to pass

this code.

In the spirit of the 25<sup>th</sup> anniversary of the ADA, the time is now. Many changes have occurred in the environment making buildings accessible for many people that otherwise may not have been able to participate in what America offers its citizens and guests (visitors). The ADA has provided access to the buildings, so why not further this idea of having people become active participants to also include the advances in technology that is now commercially available, to be included in elevators? Let's start implementing the available technology into elevators, for the 48 million deaf and hard of hearing people that use elevators every day. A significant portion of the U.S. population (almost 1/6 of the total U.S. population) will definitely benefit from this code change. I am profoundly Deaf with a dB loss of 110, so this affects me personally. But this is not about me. This is about you, your family, friends, relatives, colleagues, and 48 million other individuals who cannot use the present auditory communication systems in elevators. I gain nothing from this, financial or otherwise, except for equal emergency communication access in elevators. This is all about equal access for everyone in mainstream society. Please note that there are some opponents in industry who are resistant to change and would like others to believe that this code change is not doable, too expensive, not needed, or the technology does not exist. I am here to say that those claims are a simple and resounding "not true". The technology (there are numerous video technology applications and options already available in the commercial marketplace) has been in existence for decades, is entirely affordable and doable, and this is direly needed.

Cost Impact - The cost impact is expected to be negligible or minimal. In new construction, it is expected that the estimated cost for such a system is, on the lower end, of an estimate of approximately \$250 to \$1,000.

Thank you for your support !!

## *Public Comment 4:*

**Proponent : Carl Wren, representing City of Austin, Texas (carl.wren@austintexas.gov) requests Approve as Modified by this Public Comment.**

**Further Modify as Follows:**

### **2015 International Building Code**

**3001.2 Emergency elevator communication systems for the deaf, hard of hearing and speech impaired** An emergency two-way communication system shall be provided that:-

- ~~1. Is is a visual text-based and a video-based live interactive system,~~
- ~~2. Is The system shall be fully accessible by the deaf and hard of hearing and speech impaired, and~~
- ~~3. Is located between Upon the elevator car and arrival of emergency response personnel, the system shall provide the ability to communicate directly with local emergency authorities- response personnel at a point outside of the hoistway.~~

Where approved by the fire code official or fire chief and the building code official, communication shall be permitted to be provided using other technologies such as video conferencing, chat/text software, or other equipment.

**Commenter's Reason:** The proponent of this comment agrees with the committee that this type of requirement belongs in the building code and further agrees with the original proponent of the code change that this requirement is long overdue. The public comment adds flexibility for the code official while retaining the intent of the proponent of the original code change proposal. By adding more flexible language, there should be room for the industry to explore and find the best and most cost effective solutions. It is hoped that my fellow members of the ICC as well as the elevator industry will be proactive in response to this request for the inclusion of safety equipment for a very patient group that is a part of all of our communities.

### *Public Comment 5:*

**Proponent : Assembly Action requests Disapprove.**

**Commenter's Reason:** This code change proposal is on the agenda for individual consideration because the proposal received a successful assembly action. The assembly action for Disapprove was successful by a vote of 69.77% (217) to 30.23% (94) by eligible members online during the period of May 14 - May 28, 2015.

### *Public Comment 6:*

**Proponent : Kevin Brinkman, representing National Elevator Industry, Inc. (klbrinkman@neii.org) requests Disapprove.**

**Commenter's Reason:** The National Elevator Industry, Inc. (NEII®) has a strong history of supporting changes that improve safety and increase accessibility for individuals with disabilities, but we cannot support this change for several reasons as outlined below. In addition, NEII® supports the comments provide by BOMA.

1. This is a technical proposal which belongs in either ASME A17.1/CSA B44 or in ICC A117, not in the IBC. ICC A117 has reviewed a similar proposal and decided not to include it during its current cycle, not because it was not needed or did not belong in that standard, but because technology was not readily available and the specifications were not clear. They recommended that it be reviewed in conjunction with ASME (as opposed to the building code).
2. As written, this proposal would actually conflict with the requirements currently in ASME A17.1/CSA B44, Section 2.27.1.
3. The technology required is not readily available today for elevators and the proposal is not clear on the actual requirements because there are no Standards for the design and specifications, testing, approval, and inspection of the proposed device.
4. Proposed requirement 3001.2(3) is unclear.
5. The proponent of this change has mentioned technology that would utilize a vandal proof tablet, Ethernet cable, a custom app, and an altimeter.
  1. The requirements for a "vandal proof" tablet are not defined and attempts to make a tablet vandal proof will likely render it unusable
  2. Ethernet cable is not available in elevator traveling cables and cannot be added because it would be in violation of NFPA 70 National Electric Code
  3. The custom app is not currently available and there is no criteria provided to ensure this app would work with all devices
  4. It is not clear who would provide the custom app
  5. The purpose of an altimeter is not clear
6. As noted in the BOMA comment, the lack of a reference standards to ensure uniform design and function, may actually reduce the usability and

- effectiveness of the systems.
7. Elevators typically have an expected life of 20 or more years. Communication technology evolves at a much faster rate than the replacement of elevator systems. Communication system technology in elevators will be based on technology available at the time of installation and will become obsolete. The use of personal hand held devices would be more effective for the persons who need special features. (Please see attached document "NEII Public Comment G195-15 Additional Information").
  8. It is not clear where these features would be located. Elevator car operating panels are already limited on location and features and room is not available to add other significant sized devices or features.
  9. It will increase the cost of construction, operation, and maintenance.
  10. Calls do not go to the local fire department or other emergency personnel. Typically, calls are directed to a national call center and local emergency services are alerted if necessary. The use of technology associated with personal hand held devices and that employed by elevator call centers could support a more effective system.
  11. ASME A17.1/CSA B44 requires a two-way communication means that includes a visual signal to indicate when the call has been received at the call center. The code also requires a daily operational check by an automated monitoring system, which provides an audible and visual warning when the system is not functioning properly.

## *Public Comment 7:*

**Proponent : Steven Orlowski, representing Building Owners and Managers Association, International (sorlowski@boma.org) requests Disapprove.**

**Commenter's Reason:** BOMA agrees with the proponent that the code needs to address the emergency communication needs for individuals who are deaf, hard of hearing or speech impaired. However, as written BOMA cannot support this code change. The language approved by the committee does not provide the guidance necessary for designers, building owners and code enforcement officials to know what would be an approved device and more importantly, how these devices are supposed to function. When the code requires any piece of hardware or system to be installed, the code relies on referenced standards to ensure proper application and installation. Currently, there are no product standards that code officials and building owners can use to indicate what type of visual/text-based/video-based devices would be acceptable, who will be monitoring/receiving the communication and what type uninterrupted and/or stand by power would be required. Neither NFPA 72 Fire Alarms and Signaling code nor the ANSI/ASME A17.1 Safety Code for Elevators and Escalators address these devices. Not having a referenced product standard to explain what these devices are or how they should function was one of the reasons the A17.1 Accessible and Usable Buildings and Facilities committee disapproved a similar proposal this past cycle. Lacking any guidance from a product standard will result in designers, building owners, and code officials installing devices that may prove to be ineffective or unreliable during a real emergency. BOMA encourages the final assembly to disapprove the code change and allow industry to develop a product standard for two-way emergency communication device for the purpose of assisting the deaf/hard of hearing or speech impaired, that will clearly define the performance, notification and transmission of these critical communication devices.

# G200-15

## 3006.2

### **Proposed Change as Submitted**

**Proponent :** Carl Baldassarra, P.E., FSFPA, P.E., FSFPE, Chair, ICC Code Technology Committee, representing Code Technology Committee (CTC@iccsafe.org)

## **2015 International Building Code**

### **Revise as follows:**

**3006.2 Hoistway opening protection required.** Elevator hoistway door openings shall be protected in accordance with Section 3006.3 where ~~an~~ the elevator hoistway is required to be located in a shaft enclosure, connects more than three stories, ~~is required to be enclosed within a shaft enclosure in accordance with Section 712.1.1 and~~ where any of the following conditions ~~apply~~ exist

~~1.~~ 1. The elevator hoistway exceeds 420 feet in height.

~~21.~~ 21. The building is not ~~protected~~ equipped throughout with an *automatic sprinkler system* ~~in accordance with Section 903.3.1.1 or 903.3.1.2.~~

~~32.~~ 32. The building contains a Group I-1 Condition 2 occupancy.

~~43.~~ 43. The building contains a Group I-2 occupancy.

~~54.~~ 54. The building contains a Group I-3 occupancy.

~~5.~~ 5. The building is a high rise and the elevator hoistway is more than 75 feet (22 860 mm) in height. The height of the hoistway shall be measured from the lowest floor to the highest floor of the floors served by the hoistway.

### **Exceptions:**

1. Protection of elevator hoistway door openings is not required where the elevator serves only open parking garages in accordance with Section 406.5.
2. Protection of elevator hoistway door openings is not required at the level(s) of exit discharge, provided the level(s) of exit discharge is equipped with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
3. Enclosed elevator lobbies and protection of elevator hoistway door openings are not required on levels where the elevator hoistway opens to the exterior

The height of the hoistway shall be measured from the top of the lowest finished floor to the top of the highest finished floor of the floors served by the hoistway.

The height of elevator hoistways sharing a common atmosphere by elevator door openings at a common floor or by openings between hoistways shall be measured from the top of the lowest finished floor to the top of the highest finished floor of the floors served by the non separated hoistways.

**Reason:** This proposal is a follow-up to what was proposed in the 2012 cycle as proposal FS66-12. This version has been updated to work with the new language

found in Section 3006.2 and addresses the reasons for disapproval, including that midrise buildings may not have been equipped throughout with an automatic sprinkler system.

This issue has been viewed very differently throughout the US with many jurisdictions requiring elevator lobbies and many not. The IBC has required these lobbies since the 2000 edition and have always been heavily debated. This debate has been the reason the CTC has been carefully studying this issue. The work that led to FS66-12 included a technical analysis that looked at issues such as stack effect and also looked at the reliability of sprinklers through the use of the fire safety concepts tree. The technical analysis is available at the following link. <https://cdpaccess.com/proposal/fileupload/get/280>

The ICC Code Technology Committee (CTC) has just completed its 10th year. The ICC Board has decided to sunset the CTC. The sunset plan includes re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). The two remaining CTC Areas of Study are Care Facilities and Elevator Lobbies/WTC Elevator issues. This proposal falls under the Elevator Lobbies Area of Study. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website at: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>.

**Cost Impact:** Will not increase the cost of construction  
If the requirements for elevator lobbies are made less restrictive then the cost of construction would go down.

G200-15 : 3006.2-  
BALDASSARRA4170

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The study cited in the testimony on the floor as substantiation for this proposal is still underway. It is premature to make a decision on this proposal before the study is completed and adequate technical justification is provided.

**Assembly Motion:**

**As Submitted**

**Online Vote Results:**

**Failed**

Support: 21.11% (72) Oppose: 78.89% (269)

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : Carl Baldassarra, P.E., FSFPA, representing Code Technology Committee (CTC@iccsafe.org) requests Approve as Submitted.**

**Commenter's Reason:** This proposal was disapproved at the code action hearings based upon further information from a modeling project being conducted at the University of Texas Austin. A report has been prepared containing the results of

several computer modeling runs examining the need for enclosed elevator lobbies in fully sprinklered buildings where the sprinklers are both operating and failed. These represent the first of a number of scenarios developed by the CTC. A link to the full report is provided here. [UT Austin Report](#) . The conclusions excerpted from their report are as follows:

**Conclusion**

*From the current results, some conclusions can be drawn. Compared with previous research[5][6] which considered post-flashover fires with temperature rise of more than 700°C, this study used a single workstation fire of 7MW, which elevates the gas temperature around the elevator lobby by only about 50°C. Thus the fire hazard examined in this report is much smaller than that proposed by others, and the fire-induced stack effect is also smaller. One effect that has not been considered in previous work is the effect of sprinklers. The effects of sprinklers to control the fire were directly considered in this study.*

*When sprinklers are normally activated, fires can be quickly controlled and suppressed. After the fire is extinguished on the fire floor, the hot environment of the building maintains the fire-induced stack effect in the elevator shafts and transports the smoke to the upper floors. Generally, however, the smoke is less thick than on the fire floor and gradually dissipates.*

*For an extreme ventilation condition, when the elevator doors are open at the fire floor, significant smoke moves to the upper floors. For such a case, the enclosure of the elevator lobbies significantly delays the smoke spread to the upper floors. When the doors on the enclosing walls are open, the gas temperature and pressure differences are almost 50% of the unenclosed conditions. When the elevator lobbies are separated by closed doors with modeled leakage, the fire barely affects the elevator lobbies, and little smoke is transported to the upper floors.*

*For the extreme ventilation cases when the elevator doors and windows are open on the fire floor, there are two ways to satisfy the visibility-based fire safety criterion. One is by ensuring the functional operation of the sprinklers during fires, and the other is to enclose the elevator lobbies.*

*When the elevator doors and windows are closed and a normal building envelope leakage area exists, the smoke generated from the fire floor still affects the upper floors. Although the total mass flow rate for these typically-ventilated cases are relatively smaller than for the more open/extreme cases, the smoke concentration is larger and thus the visibility-based safety criterion still indicates a safety problem. Thus, the fire hazard is nearly the same as the extreme ventilations cases of open windows and elevator doors on the fire floor. The cold weather condition showed a slight increase in the fire hazard, but it is not the governing factor.*

Regardless of stack effect, the modeling showed that in a fully sprinklered building where the sprinklers operate the fire is essentially extinguished, produces minimal smoke and tenability is maintained. Full failure of the sprinkler system will result in extensive smoke spread without lobbies but this is a conservative scenario. The IBC includes several provisions to greatly reduce this potential, such as electrical supervision of the system, remote monitoring, and redundant water supply risers and on-site water storage in very tall or seismic zone buildings. It was also noted for the full sprinkler failure scenario that simply having a lobby reduced smoke spread significantly even with a partially open door.

This proposal still requires that lobbies be provided in hoistways exceeding 420 feet in height where stack effect is greater.

Members are encouraged to consider this additional report along with other extensive studies and work by the ICC Code Technology Committee (CTC) in support of this change, which can be found at the link below. The CTC has just completed its 10th year. The ICC Board has decided to sunset the CTC. The sunset plan includes

re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). The two remaining CTC Areas of Study are Care Facilities and Elevator Lobbies/WTC Elevator issues. This proposal falls under the Elevator Lobbies Area of Study. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website at: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>.

<http://media.iccsafe.org/cdpACCESS/docs/SmokeSpread-HighRise.pdf>

---

**G200-15**

# G204-15

3007.3, 3008.3

## **Proposed Change as Submitted**

**Proponent :** Carl Baldassarra, P.E., FSFPA, P.E., FSFPE, Chair, Code Technology Committee, representing Code Technologies Committee (CTC@iccsafe.org)

### **2015 International Building Code**

**Revise as follows:**

**3007.3 Water protection.** ~~An approved method to prevent water~~ Water from the operation of an automatic sprinkler system outside the enclosed lobby shall be prevented from infiltrating into the hoistway enclosure from the operation of the automatic sprinkler system outside the enclosed fire service access elevator lobby shall be provided. in accordance with an approved method.

**3008.3 Water protection.** ~~An approved method to prevent water~~ Water from the operation of an automatic sprinkler system outside the enclosed lobby shall be prevented from infiltrating into the hoistway enclosure from the operation of the automatic sprinkler system outside the enclosed occupant evacuation elevator lobby shall be provided. in accordance with an approved method.

**Reason:** As currently written it is often misinterpreted that water protection should be provided from sprinklers activating within the enclosed lobby itself. In fact, this provision is specifically looking only at sprinkler activation outside the lobby. If a sprinkler was activated within the lobby itself then there are larger concerns about the safety of the elevator operations. Also if sprinklers have activated within the lobby the lobby smoke detection would have also activated and recalled the elevators to the lobby. This section is not intended to include fire fighter hose stream. The ICC Code Technology Committee (CTC) has just completed its 10th year. The ICC Board has decided to sunset the CTC. The sunset plan includes re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). The two remaining CTC Areas of Study are Care Facilities and Elevator Lobbies/WTC Elevator issues. This proposal falls under the WTC Area of Study. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website at:  
<http://www.iccsafe.org/cs/CTC/Pages/default.aspx>.

**Cost Impact:** Will not increase the cost of construction  
This is merely a clarification. It may be a savings if it was interpreted to include the activation of an automatic sprinkler system within the enclosed elevator lobby.

G204-15 : 3007.3-  
BALDASSARRA4191

---

## **Public Hearing Results**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This is a necessary clarification to the code that addresses items that are commonly misinterpreted.

**Assembly Action :**

**None**

---

**Individual Consideration Agenda**

***Public Comment 1:***

**Proponent : Jonathan Siu, City of Seattle Department of Planning & Development, representing City of Seattle Department of Planning & Development (jon.siu@seattle.gov) requests Disapprove.**

**Commenter's Reason:** We are recommending this proposed code change be disapproved because the proposal is unnecessary, and it includes an unenforceable performance standard.

The reason statement for this proposal asserts that the current text can be misinterpreted to require the heads in the lobby to be the source of the water that is being dealt with in this section. However, we do not see how the current text can be interpreted in that way. That is, it clearly says the source of the water is not the heads in the elevator lobby, but the heads outside the lobby ("...from the operation of the automatic sprinkler system outside the enclosed fire service access elevator lobby..." [emphasis ours]) So the premise for the proposal doesn't seem to support the need for a change. In addition, the proposed text does not increase clarity on the issue, since it uses terminology that is substantially the same as the 2015 code.

Regarding the second point, the 2015 IBC text says there needs to be an approved method to prevent the water from going into the hoistway. We read this to say we're approving a design that is supposed to prevent it. In reality, however, the system may not perform as designed in a real event for any number of reasons, including an event that exceeds the design assumptions--there is always some probability of failure. We hope the probability is very small, but it's not zero.

The proposed text says water "shall be prevented" from getting into the hoistway. No ifs, ands, or buts. This is creating an absolute performance standard. That is, this means that if the system did not perform in a real event as specified, i.e., water from a sprinkler head outside the elevator lobby got into the hoistway for whatever reason, there was a code violation, and it becomes a liability issue for the designer of the system. This is akin to saying a building that collapses for any reason must not have conformed to the code and the engineer is liable, even if the event was something beyond what the structure was designed for. Note also that compliance with this provision as written cannot be verified in any practical manner at the time of C of O, so verification will only happen when an actual event happens. (Finding a building owner who would be willing to run a test of the system prior to C of O by turning on the sprinklers in the newly-constructed building and letting them run for an unspecified amount of time to test the drainage system is a very doubtful proposition). For these reasons, the proposed language is unenforceable, and the proposal should be disapproved.

---

**G204-15**

# G206-15

## 3007.8, 3007.8.1 (New)

### Proposed Change as Submitted

**Proponent :** Dave Frable, US General Services Administration, representing US General Services Administration

## 2015 International Building Code

### Revise as follows:

**3007.8 Electrical power.** ~~The following features serving each fire service access elevator shall be supplied by both~~ Sufficient normal power and Type 60/Class 2 X/Level 1 standby power: ~~1. Elevator shall be provided to simultaneously operate all designated fire service access elevators and their associated elevator equipment.~~ ~~2. Elevator , elevator hoistway lighting.~~ ~~3. Ventilation, elevator car lighting, and the ventilation and cooling equipment for their respective elevator machine rooms, control rooms, machine spaces and control spaces.~~ ~~4. Elevator car lighting.~~

### Add new text as follows:

**3007.8.1 Standby power evaluation and analysis** An evaluation and analysis shall be provided to determine the appropriate minimum time, in hours, that standby power must be provided following loss or failure of the normal power supply for the fire service access elevators to operate for the specific building and application. The subject evaluation and analysis shall be prepared by the responsible registered design professional and shall be approved prior to installation.

**Reason:** Currently as written all designated fire service access elevators must comply with Section 3007.8 which requires 2 hours of standby power for each designated fire service access elevator and associated equipment simultaneously. In many 120 foot tall buildings across the country, the current 2-hour standby power requirement becomes costly and is likely much more conservative than necessary. The intent of this code change is to provide a more reasonable approach for providing standby power in lieu of using an arbitrary/absolute value of 2-hours. NFPA 110, Standard for Emergency and Standby Power Systems permits the use of Class X systems (Other time, in hours, as required by the application). Please note the Class defines the minimum time, in hours, for which the standby power system is designed to operate at its rated load without being refueled or recharged.

This proposal would permit the Building Official to approve an evaluation and analysis prepared by the registered design professions for determining the appropriate minimum time, in hours, that standby power must be provided for the respective building. In addition, it should also be pointed out that the 2-hour standby power requirement is also not consistent with reviews of the WTC bombing in 1996 that concluded buildings should not take longer than 1-hour to evacuate.

**Cost Impact:** Will not increase the cost of construction

This proposal will decrease the cost of construction as it will possibly reduce the size of the emergency power supply system providing standby power as well as determining the appropriate timeframe necessary for providing standby power for the operation of the fire service access elevators during an emergency.

## Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** There are some portions of this proposal that may be valid. However, there is a common misunderstanding that fire service elevators are intended to transfer one team of firefighters. The real object is to stay operational for the entire duration of the fire in order to move firefighting equipment and injured firefighters, etc.

The proposal does not clearly state that the approval is intended to be by the fire service.

**Assembly Action :**

**None**

---

### Individual Consideration Agenda

*Public Comment 1:*

**Proponent : Dave Frable, representing US General Services Administration (dave.frable@gsa.gov) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

#### **2015 International Building Code**

**3007.8.1 Standby power.** Standby power loads for fire service access elevators shall be a minimum of Type 60/Class 2/Level 1 standby power.

**Exception:** Where approved by the fire official, the Class that defines the minimum time, in hours, for the duration of standby power is allowed to be determined by a standby power evaluation and analysis that complies with Section 3008.1.1.

**~~3007.8.1~~ 3007.8.1.1 Standby power evaluation and analysis. No change to text.**

**Commenter's Reason:** Currently as written all designated fire service access elevators must comply with Section 3007.8 which requires 2 hours of standby power to ensure these elevators and associated equipment are operational for the entire duration of the fire. However, in many 120 foot tall buildings (approximately 10 stories) across the country, the current 2-hour standby power requirement becomes costly and is likely much more conservative than necessary.

The intent of this code change is to provide an alternative that would permit the fire chief to approve a standby power evaluation and analysis to determine the appropriate period of time, that standby power must be provided following loss or failure of the normal power supply to sustain fire service operations for the specific building and application.

We believe this approach is a reasonable alternative for determining the minimum standby power duration for fire service access elevators than utilizing the absolute value of 2 hours.

---

G206-15

# G209-15

**202 (New), 3001.1 (New), 3002 (New), 3003 (New), 3004 (New), 3005 (New), 3006 (New), 3007 (New), 3008 (New). CHAPTER 35**

## **Proposed Change as Submitted**

**Proponent :** Jani Palmer, Environmental Protection Agency, representing United States Environmental Protection Agency

### **2015 International Building Code**

**Add new text as follows:**

#### **SECTION 202 DEFINITIONS**

**ACTIVE SOIL-DEPRESSURIZATION SYSTEM.** A system designed to lower the air pressure in the soil beneath a building, relative to the atmospheric pressure immediately above ground level, by continuously withdrawing air from below a membrane covering the soil. An active soil-depressurization system consists of a pressure distribution manifold, one or more radon vents, an operating fan and a fan-failure indicator.

**RADON.** A naturally occurring, chemically inert, radioactive gas. It is part of the uranium-238 decay series. For purposes of this code, radon applies to radon-222; thus, it is the direct decay product of radium-226.

**SOIL GAS RETARDER MEMBRANE.** A durable, flexible and non-deteriorating material, installed in a continuous sheet to retard the pressured-driven flow of soil gas through elements of a structure.

#### **CHAPTER 30 RADON REDUCTION SYSTEMS**

##### **SECTION 3001 GENERAL**

**3001.1 Intent.** The provisions of this chapter shall govern the design, construction and testing of radon reduction systems. These systems are intended to limit radon entry points through floors, walls and foundations and to limit the mechanical depressurization of buildings, which can enhance radon entry.

**3001.2 Required.** This Chapter shall be mandatory for buildings of Group E (Educational) occupancy that are located in areas of high radon potential as determined by Table AF101(1) High Radon-Potential (Zone 1) Counties in Table 3001.2.

**Table 3001.2  
High Radon-potential, Zone 1, counties.**

#### **SECTION 3002**

## **SOIL GAS RETARDER MEMBRANE.**

**3002.1 Membrane materials.** Acceptable soil gas retarder membranes shall consist of a single layer of polyethylene, not less than 0.006-inch (6 mils) thick with a maximum perm rating of 0.3. Polyvinyl chloride (PVC), ethylene diene ter polymer (EPDM), neoprene or other non-deteriorating, non-porous material may be used instead of polyethylene, provide the installed thickness of the alternate material has greater or equal tensile strength, resistance to water-vapor transmission, resistance to puncture, and resistance to deterioration determined in accordance with ASTM E 154. The membrane shall be placed to minimize seams and to cover all of the soil below the building floor.

**3002.2 Tape.** Tape used to install the soil gas retarder shall have a minimum width of 2 inches and shall be pressure sensitive vinyl or other non-deteriorating pressure sensitive tape compatible with the surfaces being joined.

**3002.3 Mastic.** Mastic used to join sections of membrane to one another or to elements of the building foundation, or to seal penetrations in the membrane of the soil gas retarder shall be compatible with the surfaces being joined, and shall be installed in accordance with the manufacturer's recommendations for the materials, surface conditions and temperatures involved.

**3002.4 Installation.** The soil gass retarder shall be placed under the entire soil contact area of the floor in a manner than minimizes the required number of joints and seams. Care shall be taken to prevent damage to the membrane during the construction process. In buildings incorporating the sub-slab portions of an active soil-depressurization system, the soil gas retarder shall also serve to prevent mastic, cement or other materials from blocking the pressure distribution manifolds or pits.

**3002.5 Seams** Seams between portions of the soil gas retarder shall maintain not less than 12 inches of lap when concrete is placed. The membrane shall be secured with tape or mastic or by using larger unsecured overlaps prior to placing concrete.

**3002.6 Slab edges and joints** The soil gas retarder shall fully cover the soil beneath the building floor. Where the slab edge is cast against a foundation wall or grade beam, the soil gas retarder shall contact the foundation element, and shall not extend vertically into the slab more than one half of of the slab thickness.

**3002.7 Penetrations** At all points where pipes, conduits, reinforcing bars or other objects pass through the soil gas retarder membrane, the membrane shall be fitted to within one-half inch of the penetration and sealed to the penetration. Where penetrations occur within 24 inches of a soil-depressurization system mat or pit, the gap between the penetrating object and the soil gas retarder shall be taped closed. When necessary to meet this requirement a second layer of the membrane, cut so as to provide not less than a 12-inch lap on all sides, shall be placed over the object and shall be sealed to the soil gas retarder with a continuous band of tape.

**3002.8 Punctures, cuts and tears** All damaged portions of the soil gas retarder membrane within 24 inches of any portion of a soil-depressurization

system mat or pit shall be sealed with tape or with a patch made from the same or compatible material, cut so as to provide not less than a 12-inch lap from any opening, and taped continuously about its perimeter.

**3002.9 Mastics** Mastic used to join sections of soil gas retarder to one another or to elements of the building foundation, or to seal penetrations in the soil gas retarder, shall be located not less than 24 inches from any portion of the soil-depressurization system mat or pit. Tape shall be used to seal those portions of the soil gas retarder membrane that are within 24 inches of a soil-depressurization system mat or pit.

**3002.10 Repairs** Where portions of an existing concrete slab-on-grade construction have been removed and are about to be replaced, the soil gas retarder membrane shall be carefully fitted to the opening, and all openings between the membrane and the soil shall be closed with tape or mastic. Special care shall be exercised to assure that mastic does not enter any portion of the soil-depressurization system that is located beneath the slab-on-grade construction.

### **SECTION 3003** **CONCRETE FLOORS IN CONTACT WITH SOIL GAS**

**3003.1 General** Concrete slab-on-grade construction that is supported on soil or spanning over exposed soil, and that is used as a floor for conditioned space or enclosed spaces that are adjacent to or are connected to conditioned spaces, shall be constructed in accordance with local codes for mix design, slump and workability, hot weather placing and finishing and curing.

**3003.2 Concrete for slab-on-grade construction.** Concrete for slab-on-grade construction that is in contact with soil gas shall be in accordance with Sections 3003.2.1 and 3003.2.2.

**3003.2.1 Compressive strength** Design strength for concrete mixes used in the construction of slab-on-grade floors shall be not less than 3,000 psi at 28 days and shall be designed, delivered and placed in accordance with ASTM C 94.

**3003.2.2 Shrinkage control** Concrete mix design, placing practices, and curing practices prescribed shall be in accordance with this section. Concrete slab-on-grade or slabs spanning above exposed soil shall be designed, placed, finished and cured in accordance with this code.

**3003.3 Sealing of construction joints, penetrations, cracks and other connections** The sealing of construction joints, penetrations, cracks and other connections shall be in accordance with Sections 3003.3.1 through 3003.3.4.

**3003.3.1 Sealants** Sealants shall be selected and installed in compliance with ASTM C 920 and ASTM C 1193.

1. Sealant materials shall be compatible with the materials they join, including curing compounds and admixtures, and with materials that will be applied over them, including floor finishing materials.
2. Field-molded sealants shall be installed in sealant reservoirs proportioned, cleaned of laitance and prepared in accordance with the manufacturer's recommendations. For elastomeric

- sealants, this generally requires the installation of a bond breaker or backer rod shall be provided where required by the sealant manufacturer's installation instructions.
3. Where installed sealant is not protected by a finished floor or other protective surface, it shall be suitable to withstand the traffic to which it will be exposed.
  4. Waterstops shall be preformed from polyvinyl chloride or other non-corrosive material.

**3003.3.2 Joints** Joints between sections of concrete floor slabs, between the floor slab and a wall or other vertical surface, and between a section of floor and another object that passes through the slab, shall be sealed to prevent soil gas entry in accordance with the provisions of this section. Joints and portions thereof shall not be covered or rendered inaccessible unless the seal has first been inspected and approved by the building official. Such joints shall be sealed prior to the structure being certified for occupancy.

1. **Butt joints.** Non-bonded butt joints shall be sealed to prevent radon entry using an elastomeric sealant or a waterstop as specified in Section 3003.3.1. The sealant reservoir shall be sufficiently large to prevent failure of the sealant or waterstop and shall not be less than 1/4-inch by 1/4-inch in cross-section
2. **Lap joints.** Non-boned lap joints shall be sealed with either a field-molded or preformed elastomeric sealant or with a flexible waterstop as specified in Section 3003.3.1. The lap joint shall be sufficiently large to prevent failure of the sealant or waterstop, but in no case shall the sealant reservoir be less than 1/2-inch by 1/2-inch in cross-section.
3. **Isolation joints.** Non-boned isolation joints shall be sealed with either a field-molded or preformed elastomeric sealant or with a flexible waterstop as specified in Section 3003.3.1. Isolation joints shall be sufficiently large enough to prevent failure of the sealant or waterstop, and shall be not less than 1/2-inch by 1/2-inch in cross-section.
4. **Control or contraction joints.** In locations where continued movement of the slab portions can be reasonably expected, flexible sealants shall be installed in reservoirs in accordance with Section 3003.3.2 Item 2, or a flexible waterstop shall be provided.
5. **Construction joints.** Bonded construction joints shall be sealed to prevent radon entry using either a rigid or an elastomeric sealant or a waterstop in accordance with Section 3003.3.1. Where movement of the joint is not prevented by continuous reinforcing and tie bars, flexible sealants shall be installed in reservoirs in accordance with Section 3003.3.2 Item 2, or a flexible waterstop shall be provided.

**3003.3.3 Cracks** Cracks in concrete slabs supported on soil or spanning over exposed soil, that are used as floors for conditioned space or enclosed spaces adjacent to or connected to conditioned spaces, shall be sealed against radon entry in accordance with the provisions of this section and Section 3003.3.1, except that cracks less than 1/16-inch wide that do not meet any of the conditions described in Section 3003.3.3(1), shall not be required to be sealed.

1. Cracks greater than 1/4-inch wide; all cracks that exhibit vertical

- displacement; all cracks that connect weakened zones in the slab such as vertical penetrations or re-entrant corners; and, all cracks that cross changes in materials or planes in the structure, shall be sealed with a flexible field-molded elastomeric sealant installed in accordance with Section 3003.3.2, Item 3, for isolation joints.
2. Cracks greater than 1/16-inch wide; that do not meet any of the conditions described in 3003.3.3(1), shall be enlarged to contain a sealant reservoir not less than 1/4-inch by 1/4-inch in cross-section along the entire length of the crack; and shall be sealed with a flexible, field-molded elastomeric sealant installed in accordance with 3003.3.2(1).

#### **3003.3.4 Stakes, pipe penetrations and other small objects**

Objects that pass through the slab shall be sealed gas tight. A sealant reservoir, appropriately dimensioned to accommodate any differential movement between the object and the concrete, shall be formed continuously around the objects, and the joint shall be sealed with a field molded elastomeric sealant in accordance with Section 3003.3.2 Item 3 and Section 3003.3.1. Where pipes or other penetrations are separated from the concrete by flexible sleeves, the sleeve shall be removed to provide bonding of the sealant to the object. Where stakes are used to support plumbing, electrical conduits or other objects that will penetrate the slab, the stakes shall be solid, non-porous and resistant to decay, corrosion and rust. Special care shall be taken to avoid honeycombing between multiple or ganged penetrations.

1. Large utility service openings through the slab shall be sealed gas-tight. For slab-on-grade construction, this shall be accomplished by fully covering the exposed soil with a vapor-retarder membrane, covered to a depth of not less than 1 inch with an elastomeric sealant. Alternatively, the opening shall be closed with an expansive concrete or hydraulic cement to within 1/2 inch of the top of the slab, and the remaining 1/2 inch shall be filled with an elastomeric sealant. Where the opening connects to a crawlspace, the opening shall be closed with sheet metal or other rigid impermeable materials and sealed with an elastomeric sealant compatible with the materials and conditions.
2. For openings made through existing slabs, sealing shall meet the applicable provisions of this section. Where the opening is partially repaired with concrete, any resulting crack shall be sealed in accordance with Section 3003.3.3.
3. Sumps located in habitable portions of a building and connecting to the soil, either directly or through drainage piping, shall be equipped with a gasketed lid. The lid shall be attached so as to provide a gas-tight seal between the sump and the access space above.

### **SECTION 3004** **WALLS IN CONTACT WITH SOIL GAS**

**3004.1 General** Walls separating below-grade conditioned space from the surrounding earth or from a crawlspace or other enclosed space with an exposed earth floor, shall be isolated from the soil by an approved structural barrier as in accordance with Section 3002. Foundation walls consisting of cavity walls, or constructed of hollow masonry products or of any material in

such a way as to create an air-space within the wall, shall be capped as the floor-level of the first finished floor they intersect. The cap shall be either at least 8 inches of solid concrete or concrete filled block, or a cap that provides air-flow resistance at least equal to the adjacent floor. Cracks, honeycombs, joints, ducts, pipes conduit chases or other openings in the wall shall not be allowed to connect soil gas to a conditioned space or to an enclosed space adjacent to or connected to a conditioned space.

**3004.2 Materials** Walls governed by the provisions of Section 3004 shall be constructed of reinforced concrete, or solid reinforced masonry construction.

**3004.3 Waterproofing** Walls governed by Section 3004 shall be constructed with a continuous waterproofing membrane applied either

1. To the exterior surface from the top of the footing to not less than 6 inches above the finished grade, or where the wall separates interior space and a crawlspace; or
2. From the top of the footing to the bottom of the floor above.

**3004.3.1 Application** The waterproofing membrane shall be applied in accordance with this code and shall be sealed to the top of the footing so as to waterproof the joint between the footing and the wall. Where installed in accordance with Section 3004.3 Item 2, the membrane shall be attached to the bottom of the floor above in a manner that fully seals the joint between the floor and wall.

**3004.3.2 Utility penetrations** Below-grade utility penetrations through walls in partial or full contact with the soil shall be closed and sealed with a sealant in accordance with Section 3003.3.1. This seal shall be made on both faces of the wall. Where conduits or ducts do not provide a continuous and gas-tight separation from the soil, the end of the conduit or duct shall be sealed in accordance with Section 3003.3.1 to prevent soil gas entry.

**3004.4 Doors and service openings** Doors, hatches or removable closures of any kind that can create an opening between the interior and a crawlspace shall be gasketed and equipped with a latch or other permanent fastening device.

## **SECTION 3005** **BUILDINGS WITH CRAWL SPACES**

**3005.1 General.** For the purposes of Section 3005, buildings with crawl spaces shall include all buildings with a floor supported above grade.

**3005.1.1 Reinforced concrete floor systems** Reinforce concrete floors constructed over crawl spaces shall be in accordance with Section 3003.

**3005.1.2 Wood-framed floor systems** Wood-framed floors spanning over soil, that are used as floors for conditioned space or enclosed spaces adjacent to or connected to conditioned spaces, shall be constructed in accordance with Section 3005.

**3005.2 Materials.** Wood-framed floors constructed over a crawl space shall be constructed of APA certified tongue-in-groove plywood, and shall otherwise comply with this code. Oriented structural board shall not be considered to be an acceptable substitute material.

**3005.3 Utility penetrations** Penetrations through the floor shall be fully sealed to the floor structure with a sealant that complies with Section 3003.3.1. Large service openings through the slab shall be sealed gas-tight. Where large openings are created, sheet metal or other rigid material shall be used in conjunction with sealants to close and seal the openings.

**3005.4 Vertical joints** Vertical joints between the subfloor and foundation wall or the subfloor and any vertical plane of the building that extends from the crawlspace to the top of the subfloor, shall be sealed with a sealant that complies with Section 3003.3.1.

**3005.5 Doors and service openings.** Doors, hatches or removable closures of any kind that have the potential to create an opening in the floor-plane shall be gasketed and equipped with a latch or other permanent fastening device.

**3005.6 Other radon-entry paths** Openings that connect a crawlspace and construction cavities, such as the space between wall studs, hollow masonry or precast concrete units, or floor and ceiling planes, shall be closed and sealed in accordance with Section 3003.3.1.

**3005.7 Crawl space ventilation** Crawl Spaces shall be passively ventilated or shall be constructed with an active soil-depressurization system in compliance with Sections 3008 and 3009. No portion of an air-distribution system shall pass through a crawlspace.

**3005.7.1 Required ventilation.** Crawl spaces shall be ventilated by openings through the perimeter wall connecting to the exterior of the foundation. Required vents shall have a combined net free area of not less than 1 square inch in each 1 square foot of crawl space, and shall conform to the following conditions:

1. Openings shall be distributed uniformly around the outside walls of the crawl space.
2. Vents shall be fitted with corrosion- and decay-resistant wire mesh or grilles with openings not less than 1/4 inch nor more than 1/2 inch in size. Vents shall not be fitted with operable louvers, dampers or other closure mechanisms.
3. Plumbing located in a ventilated crawlspace shall be protected from freezing with insulation or heat tape.

**3005.7.2 Prohibited uses.** Crawl spaces shall not be used as an air-duct or plenum or to house a duct or fan that is part of a heating, ventilating or air-conditioning system.

## **SECTION 3006** **SPACE CONDITIONING SYSTEMS AND VENTILATING**

**3006.1 General.** This Section limits radon entry points by means of the mechanical depressurization of buildings. Ventilating systems shall be designed in accordance with applicable codes and the provisions of this section for use of outside air of low radon concentration.

**3006.2 Condensate drains.** Joints in condensate piping shall be solvent welded, soldered or otherwise connected in a leak-proof and gas-tight manner. Condensate drains shall be trapped and shall terminate in the building sewer or outside of buildings, at not less than 6 inches above

finished grade. Where the condensate piping penetrates a floor or wall separating enclosed space from the soil or from a crawl space, the penetration shall be sealed in accordance with applicable provisions of Section 3003. Condensate drain piping shall not terminate in a return plenum.

**3006.3 Other piping.** Where piping penetrates a floor or wall separating enclosed space from the soil or from a crawl space, the penetration shall be sealed in accordance with applicable provisions of Section 3003. Where piping is insulated, the insulation shall be removed at the point of the seal, and the required seal shall be made between the pipe and the building structure. The sealant shall be compatible with the materials and anticipated operating temperatures. Piping shall not terminate in a return plenum.

**3006.4 Plumbing and wiring chases.** Where piping or wiring is installed in a chase that is at any point in contact with the soil or a crawl space, the chase shall be sealed to the floor or wall where it first enters the structure, in accordance with applicable provisions of Section 3003. Piping contained in such a chase shall be sealed to the chase at the interior plane of that floor or wall. A chase or portion thereof shall not terminate in a return air duct or plenum. Where it is impractical or prohibited by another code to seal wiring into an electrical chase or conduit, the chase shall comply with applicable portions of Section 3003 or the conduit shall be entirely fabricated of gas-tight components and materials.

## **SECTION 3007** **AIR DISTRIBUTION SYSTEMS**

**3007.1 Air distribution systems.** Air ducts, plenums, fan enclosures or fans that are part of a building's heating, ventilating or air-conditioning system shall be completely isolated from the soil gas by a structural barrier complying with this Chapter. Heating, ventilating and air-conditioning systems supplying spaces with floors or walls that are in contact with soil or soil gas shall be designed to minimize air pressure differences and eliminate negative pressures, that cause significant flow of soil gas through the structural barrier and into the building. Return ducts, plenums and air handlers shall not be located in a crawl space.

**3007.2 Exhaust fans, hoods, equipment and appliances.** For each zone, the required volume of outside ventilation air shall be not less than the combined volume of air capable of being exhausted by all exhaust fans, hoods, equipment and appliances installed in the zone. This amount shall not be reduced by use factors unless devices are wired and switched in a manner that prevents their simultaneous operation.

**3007.3 Combustion air ducts.** Ducts that provide combustion air to fuel-burning appliances and equipment shall be completely isolated from the soil gas by a structural barrier that complies with the provisions in this Chapter.

## **SECTION 3008** **ACTIVE SOIL-DEPRESSURIZATION SYSTEMS**

**3008.1 General.** A soil-depressurization system causes the direction of air flow through any possible failure in the structural barrier to move out of the building and into the depressurization system, thereby reducing radon. Soil-depressurization systems shall be installed beneath concrete slabs supported directly on the soil, or beneath the soil gas retarder

membrane in crawl spaces.

**3008.2 Prohibited uses.** Soil-depressurization systems components shall not extend beneath areas that are required to be depressurized by other codes for the protection of public health, such as, but not limited to, rooms containing general anesthesia or pathogens. Soil-depressurization systems shall be installed beneath rooms that are required to be depressurized for other reasons, such as, but not limited to, toilets and kitchens.

**3008.3 System components.** An active soil-depressurization system shall be comprised of the following components: a pressure distribution system porous media or manifolds; a soil cover; one or more vents; a suction fan; and a system failure indicator.

**3008.3.1 Pressure distribution media or manifold.** The low-pressure zone shall be extended across the entire area beneath the structure in accordance with the following. Acceptable means of extending the low-pressure zone include, but are not limited to, synthetic ventilation mats, a system of perforated pipe and an air-permeable gravel layer. Different types of pressure distribution media shall be allowed to be used in the same system, provided each complies with the installation requirements of this Chapter. Pressure distribution media must be installed in such a way as to assure that they are never blocked by water.

1. Ventilation mats shall have a soil contact area of not less than 216 square inches per linear foot and provide a cross-section profile of not less than 9 square inches.
2. Perforated pipe that is used to construct pressure extension manifolds shall be installed directly under the soil cover or in gravel or a similar porous medium that provides an adequate air flow connection between the pipe and the sub-soil and that protects the pipe from becoming blocked by soil.
3. Continuous gravel layers of at least 4-inches thickness are an acceptable pressure distribution medium, provided the completely cover the area of soil to be pressurized.

**3008.3.2 Soil cover.** In slab-on-grade construction, the soil cover shall consist of the soil gas retarder membrane and the concrete slab. In crawl spaces, the concrete slab shall be allowed to be omitted, provided that the soil-gas retarder membrane will not be subjected to wear and damage due to required maintenance procedures. In all instances, the soil gas retarder membrane shall be fully sealed to the radon vents in accordance with Section 3002.

**3008.3.3 Radon vents.** Radon vents that carry the soil gas to an area above and away from the building shall be gas-tight and of a material that is in accordance with the requirements for plumbing vents in the *International Plumbing Code*.

**3008.3.4 Suction fans.** Suction fans shall be designed for continuous operation. Fan performance shall comply with air flows and operating pressures that are determined by the system design, as determined using estimates from active soil-depressurization air flow models or in accordance with Section 3008.4.2.2.

**3008.3.5 Fan failure indicator.** Soil-depressurization systems shall have

a failure indicator labeled with the words "Radon Reduction System Fan Failure Indicator" mounted so as to be conveniently visible to building occupants. The fan failure indicator shall be either a visual device consisting of a light not less than 1/5 footcandle at the floor level, or an alarm that produces a minimum of 60 db audible signal. The indicator shall be made to operate automatically when the pressure inside any radon vent pipe fitted with an operable fan is less than 0.40-inch water column (100 pascals) lower than the air pressure inside the building.

#### **3008.4 Active soil-depressurization system design requirements.**

**3008.4.1 General.** Active soil-depressurization systems shall be designed to be capable of maintaining a 0.02-inch (5-pascal) pressure differential over 90 percent of the slab or crawlspace.

**3008.4.2 Ventilation mat systems.** Ventilation mat systems shall be designed to be capable of maintaining a 5-pascal pressure differential over 90 percent of the slab area or in accordance with the *International Mechanical Code* for equipment and system sizing.

**3008.4.2.1 Installation.** Radon ventilation mats shall be installed immediately prior to placing the soil gas retarder membrane. Mats shall be arranged in a pattern that provides not less than two possible flow paths from any points on the mat to a radon vent pipe. Mats shall be placed with the filter material facing the compacted soil. Where sections of the mat join, a section of filter material not less than 6-inches long at the end of one of the mats shall be loosened and the other piece of mat shall be inserted between the loosened filter material and the first section of mat. The mats shall be pressed tightly together at this lap and mechanically attached together with hog rings or metal pins driven through the mat and into the soil so as not to puncture or tear the soil gas retarder membrane. When properly joined, the filter material will extend continuously across the joint and the full cross-sectional area of the mat shall be preserved across the splice.

**3008.4.2.2 Alternate compliance method.** Systems installed on sand or granular soil shall demonstrate compliance by meeting all of the following design limits:

1. Mats shall be located at least 15 feet and not more than 25 feet from the outside edge of the floor.
2. Mats shall be spaced not more than 50 feet on center.
3. No portion of a building floor shall be isolated from a mat by a construction feature, such as an internal footing, grade beam, foundation wall or other obstacle having a depth greater than the exterior foundation walls.
4. No portion of a building floor shall be more than 35 feet from the mat.
5. Mats shall be run parallel to the longest slab dimension unless obstructed by a construction feature, and arranged in a pattern that provides at least two possible flow paths from any point on the mat to a radon vent pipe.

**3008.4.2.3 Radon vent connection.** The radon vent pipe shall join to the mat in a manner that does not restrict the full air flow capacity of the pipe. Where required, dependent upon the thickness and effective net-free-area

of the ventilation mat, the diameter of the vent pipe at the connections shall be enlarged with a suitable flange, or the the net-free-area of the mat shall be enlarged by installing additional layers of mat or a layer of gravel beneath the connection point. The soil gas retarder membrane shall be fully sealed to the radon vents in accordance with Section 3002.

**3008.4.3 Perforated pipe systems.** Perforated pipes shall be of a material that complies with this code for foundation drainage, and shall be sized according to the air flow estimated for the active soil-depressurization system. Perforated pipes installed in gravel shall be number 4 or 5 gravel complying with ASTM D 448, with not more than 5 percent passing a 3/8-inch screen.

**3008.4.3.1 Installation.** Perforated pipe pressure distribution manifolds shall be installed after the installation of all other utilities has been complete, and immediately prior to the soil gas retarder membrane. Pipes shall be installed with a row of perforations located at the bottom of the pipe, in order to allow condensate to drain from the system. Pipes shall be arranged in a pattern that provides at least two possible flow paths from any point in the system to a radon vent pipe. Separate sections of pipe shall be solvent welded or mechanically fastened together.

**3008.4.3.2 Radon vent connection.** The radon vent pipe shall join to the perforated pipe with a fitting that allows for the full air flow capacity of the vent pipe. The soil gas retarder membrane shall be fully sealed to the radon vents in accordance with Section 3002.

**3008.4.4 Continuous gravel layer system.** Gravel used as the pressure distribution medium shall be installed only after the installation of other utilities has been completed, and immediately prior to the soil gas retarder membrane. Where regions of gravel are isolated from one another by interior foundation elements, separate suction points shall be provided in each region, or regions shall be interconnected with pipes run horizontally through the obstruction. The size and number of such pipes shall be sufficient to provide at least two-times the anticipated air flow. Not less than two pipes shall be used to interconnect one gravel area with another. These pipes shall be separated by a horizontal distance of not less than one-half the length of the boundary between the connecting gravel areas.

**3008.4.4.1 Radon vent connection.** The radon vent pipe shall join to the gravel layer with a "T" fitting that allows for the full air flow capacity of the vent pipe from either side of the "T". The fitting shall be installed with two arms in the gravel and a single arm connected to the radon vent pipe. The soil gas retarder membrane shall be fully sealed to the radon vents in accordance with Section 3002.

**3008.4.5 Radon vent pipe installation.** Radon vent pipes shall be solvent welded or otherwise joined to create a gas-tight connection from the soil suction point to the vent termination point. They shall be sloped at not less than 1/8-inch per foot in a manner that will drain rain and condensate back to the soil, and shall be supported in accordance with the requirements for vents in the *International Plumbing Code*.

**3008.4.5.1 Labeling.** Portions of the radon vent pipe not permanently encased in a wall or chase shall be labeled to prevent accidental misuse.

Labels shall consist of a pressure sensitive 2-inch yellow band with the words "Radon Reduction System" printed in black letters at least 1 inch in height. These labels shall be placed on every visible portion of the vent pipe at a spacing of not more than 3 feet. The labels shall be placed so as to be visible from any direction.

**3008.4.5.2 Sizing.** The size of vent pipes shall be determined by application of appropriate engineering principles and based on modeled air flow rates. For systems that comply with the alternate compliance method of Section 3008.4.2.2, and are installed in buildings with straight runs of vent pipes not more than 50 feet in height, the required number and size of vent pipes shall be determined as follows:

1. For up to 100 linear feet of ventilation mat, one 2-inch diameter pipe shall be used.
2. For up to 200 linear feet of ventilation mat, one 3-inch diameter pipe, or two 2-inch diameter pipes, shall be used.
3. For up to 400 linear feet of ventilation mat use one 4-inch diameter pipe, or two 3-inch diameter pipes, or four 2-inch diameter pipes shall be used.

**3008.4.5.3 Terminals.** Radon vent pipes shall terminate with a rain cap, installed above the roof of the structure, and shall be located in accordance with existing codes for toxic or noxious exhaust. Where not specifically addressed or applicable, vent pipes shall terminate in locations that minimize human exposure to their exhaust air, such that the location is:

1. At least 12 inches above the surface of the roof;
2. At least ten feet from any window, door or other opening such as, but not limited to, an operable skylight or air intake to conditioned spaces of the structure; and
3. Ten feet from openings into an adjacent building. The total required distance (10 feet) shall be measured either directly between the two points or be the sum of measurements made around the intervening obstacles.

Where the discharge point is within two feet of the elevation of openings into conditioned space, the ten foot distance shall be the horizontal distance between the points.

**3008.4.6 Suction fans.** Soil-depressurization system fans shall be designed to maintain the following minimum air pressure differences at the lower opening of the radon vent pipe, as compared to the air pressure of the conditioned space above:

1. For systems using ventilation mats, 0.5 inches water column.
2. For systems using perforated pipe, 0.5 inches water column.
3. For systems using continuous gravel layers, 1.0 inches water column.

**3008.4.6.1 Fan sizing.** Soil-depressurization systems that comply with the alternative compliance method of Sections 3008.4.2.2 and 3008.4.5.2, shall comply by sizing the fan as follows:

1. For up to 100 linear of ventilation mat the fan shall be rated for 50 cfm (24 L/s) at 1-inch water column.

2. For 100 to 200 linear feet of ventilation mat, the fan shall be rated for not less than 100 cfm (47 L/s) at 1-inch water column.
3. For 200 to 400 linear feet of ventilation mat, the fan shall be rated for not less than 175 cfm (83 L/s) at 1-inch water column.

**Add new standard(s) as follows:**

ASTM E 154-08a (Reapproved 2013) Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, Walls or as Ground Cover.

ASTM C 1193-13 Standard Guide for Use of Joint Sealants

**Reason:** Radon in schools presents significant health risk. Thousands of schools are affected by radon. EPA found that 41% of schools that had high radon were located geographically within Zone 1 (high radon potential), It is common knowledge that there is no way to know your building/room's radon level unless you test. Testing before a building is constructed is not possible; therefore, preventative measures, such as adding radon reducing features during construction, can save future costs and lives. Often, the preventative measures alone are enough to keep radon levels below the 4 pCi/L action level. This means that many times, no fan for radon removal would need to run; thus saving more energy.

**Bibliography:** Radon Prevention in the Design and Construction of Schools and Other Large Buildings [EPA 625-R-92-016, June 1994].

Reducing Radon in Schools: A Team Approach [EPA 402-R-94-008, April 1994] at [www.epa.gov/radon/pubs/index.html](http://www.epa.gov/radon/pubs/index.html)

[www.epa.gov/radon](http://www.epa.gov/radon)

**Cost Impact:** Will increase the cost of construction

If the gravel and vapor barrier are already being installed due to code requirements, the cost will be at the low end of this range. The cost of adding radon resistant features during construction is much less than the cost to test and fix radon after construction. Typically, costs can be approximately \$10,000 and \$50,000 if these radon resistant features are not added during construction.

**Analysis:** A review of the standards proposed for inclusion in the code, ASTM E154 and ASTM C1193 with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 2, 2014. All other standards proposed for inclusion into the code are already in Chapter 35 of the 2015 IBC.

**G209-15 : Chapter 30  
(New)-PALMER5624**

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** There are inconsistencies with this proposal and the radon requirements in the International Residential Code. This belongs in the appendix as it should be a jurisdictional decision. That would also be consistent with the IRC. The fatal flaw is that, as written, the proposal requires all means of remediation be implemented.

**Assembly Motion:  
Online Vote Results:**

**As Modified  
Failed**

Support: 15.85% (39) Oppose: 84.15% (207)

**Assembly Action :**

**None**

**Online Floor Modification:**

~~**3005.1 General.** For the purposes of Section 3005, buildings with crawl spaces shall include all buildings with a floor supported above grade.~~

~~**3002.1 Membrane materials.** Acceptable soil gas retarder membranes shall consist of a single layer of polyethylene, not less than 0.006-inch (6 mils) thick with a maximum perm rating of 0.3. Polyvinyl chloride (PVC), ethylene diene ter polymer (EPDM), neoprene or other non-deteriorating, non-porous material may be used instead of polyethylene, provide the installed thickness of the alternate material has greater or equal tensile strength, resistance to water vapor transmission, resistance to puncture, and resistance to deterioration determined in accordance with ASTM E 154. The membrane shall be placed to minimize seams and to cover all of the soil below the building floor.~~

~~**3003.3.1 Sealants.** Sealants shall be selected and installed in compliance with ASTM C 920 and ASTM C 1193.~~

1. Sealant materials shall be compatible with the materials they join, including curing compounds and admixtures, and with materials that will be applied over them, including floor finishing materials.
2. Field-molded sealants shall be installed in sealant reservoirs proportioned, cleaned of laitance and prepared in accordance with the manufacturer's recommendations. For elastomeric sealants, this generally requires the installation of a bond breaker or backer rod shall be provided where required by the sealant manufacturer's installation instructions. Where installed sealant is not protected by a finished floor or other protective surface, it shall be suitable to withstand the traffic to which it will be exposed. Waterstops shall be preformed from polyvinyl chloride or other non-corrosive material.

---

**Individual Consideration Agenda**

## Public Comment 1:

**Proponent : Jani Palmer, representing Environmental Protection Agency (palmer.janise@epa.gov) requests Approve as Modified by this Public Comment.**

**Replace Proposal as Follows:**

### **2015 International Building Code**

#### **APPENDIX N RADON REDUCTION**

##### **SECTION N101 GENERAL**

**N101.1 Scope.** The provisions of this section shall govern the design and construction of subslab soil exhaust systems that are intended to reduce radon concentrations within buildings.

**N101.2 Applicability.** This chapter shall apply to buildings located in areas designated as Zone 1, as determined in accordance with Figure AF101 of the International Residential Code. Where state or local jurisdictions have approved radon potential data that identify areas with predicted average indoor radon levels that equal or exceed 4.0 picocuries per liter, such data shall supersede Figure AF101.

##### **SECTION N102 SOIL GAS BARRIERS AND BASE COURSE MATERIALS**

**N102.1 Damp proofing, waterproofing and soil gas retarder membranes.** Floors, foundations, and walls that are in contact with the ground, and penetrations through footings, shall be damp proofed or waterproofed in accordance with Section 1805. Earthen floors in basements and enclosed crawlspaces shall be covered with a continuous membrane of 6-mil (0.15 mm) polyethylene or equivalent that is sealed at the edges. Between slab floors and the base course required in Section N102.2, damp proofing materials shall be installed in accordance with Section 1805.2.1. Punctures, tears and gaps around penetrations of a membrane shall be repaired or covered with additional membrane material.

**N102.2 Sub-slab and sub-membrane.** A base course in accordance with Section 1805.4.1 shall be installed below slab floors and foundations. There shall be a continuous gas permeable base course within each sub-slab area and under each membrane that is separated by foundation walls or footings.

**N102.3 Soil gas entry routes.** Openings in slab floors, membranes, and joints, such as but not limited to plumbing, ground water control systems, soil vent pipes, electrical, and mechanical piping and structural supports, shall be sealed against air leakage at the penetration with a polyurethane caulk applied in accordance with the manufacturer's instructions. Foundation walls shall be constructed in accordance with Section AF103.2.3 of the International Residential Code. Sumps shall be covered with a rigid lid that is sealed with a gasket or silicone caulk and mechanically fastened to facilitate removal for maintenance. Sumps and sump lids intended for ground water control shall not be connected to any part of the subslab soil exhaust system.

##### **SECTION N103 SOIL GAS VENT**

**N103.1 Soil gas vent.** System components and labeling for a subslab soil exhaust vent shall be installed in accordance with Section 512 of the International Mechanical Code. The vent pipe size shall not be reduced at any location except where the below-floor end of the vent pipe is connected vertically to a pipe fitting with not less than two horizontal openings, such as a T fitting or other manifold system that maintains airflow capacity. The fitting's horizontal openings shall be connected to an unobstructed void space such as a perforated pipe not less than 2 feet (0.6 m) in length and not less than 4 inches (10 cm) in diameter that is installed in the base course.

**SECTION N104 VENTED AREA**

**N104.1 Vented area.** The maximum foundation area served by a subslab soil vent shall be determined in accordance with Table N104.1.

**N104.2 Multiple vented areas.** Where interior foundations divide an area to be vented into two or more areas of unconnected base course materials or membranes, a single subslab soil exhaust system shall vent the multiple areas where each area's vent pipes are be joined to the single subslab soil exhaust system above the floor or interconnected below the floors with perforated pipe or equivalent method.

**TABLE N104.1  
FOUNDATION AREA PER VENT**

<b><u>Maximum vented area per vent</u></b>	<b><u>Minimum pipe diameter</u></b>
<u>2,500 sq. ft. (232 m<sup>2</sup>)</u>	<u>3-inch (7.6 cm)</u>
<u>4,000 sq. ft. (372 m<sup>2</sup>)</u>	<u>4-inch (10 cm)</u>
<u>15,000 sq. ft. (1392 m<sup>2</sup>)</u>	<u>6-inch (15.2 cm)</u>

**SECTION N105 FAN**

**N105.1 Fan.** Each subslab soil exhaust system shall include a fan, or dedicated space for the post-construction installation of a fan. The fan and soil vent piping above the fan shall not be installed in occupied space. Electrical service for the fan shall be provided within six feet (1.8 m) of the fan location.

**Commenter's Reason:** Reason: This comment addresses feedback from the IBC committee action hearing, heard from committee members and opponents alike. In this comment replacing the text of the proposed Chapter 34, we state the requirements clearly and simply in much more succinct language. Redundant provisions have been removed and clarifications added. The proposed language also builds on section 512 of the IMC and chapter 18 of the IBC. It was widely acknowledged that radon is an issue that needs to be addressed in schools and other spaces. In recognition that so many believe that jurisdictions should have only the option to adopt it, this comment is submitted as an Appendix to allow jurisdictions to adopt as needed. Since it is an appendix, the designation of group E structures has been removed to allow jurisdictions to apply to other buildings located in Zone 1 high radon potential areas, so that jurisdictions choosing to protect

citizens from radon can offer reduction in the full range of buildings where exposure may occur.

**G209-15**

---

# G210-15

3008.8, 3008.8.1 (New)

## Proposed Change as Submitted

**Proponent :** Dave Frable, representing US General Services Administration

### 2015 International Building Code

Revise as follows:

**3008.8 Electrical power.** ~~The following features serving each occupant evacuation elevator shall be supplied by both~~ Sufficient normal power and Type 60/Class 2X/Level 1 standby power: ~~1. Elevator shall be provided to simultaneously operate all occupant evacuation elevators along with their associated elevator equipment.~~ 2. Ventilation, elevator hoistway lighting, elevator car lighting, and the ventilation and cooling equipment for their respective elevator machine rooms, control rooms, machinery machine spaces and control spaces. ~~3. Elevator car lighting.~~

**3008.8.1 Standby power evaluation and analysis.** An evaluation and analysis shall be provided to determine the appropriate minimum time, in hours, that standby power must be provided following loss or failure of the normal power supply for the occupant evacuation elevators to operate for the specific building and application. The subject evaluation and analysis shall be prepared by the responsible registered design professional and shall be approved prior to installation.

**Reason:** Currently as written all occupant evacuation elevators must comply with Section 3007.8 which requires 2 hours of standby power for each occupant evacuation elevator and associated equipment simultaneously. In many tall buildings across the country, the current 2-hour standby power requirement becomes costly and is likely much more conservative than necessary. The intent of this code change is to provide a more reasonable approach for providing standby power in lieu of using an arbitrary/absolute value of 2-hours. NFPA 110, Standard for Emergency and Standby Power Systems permits the use of Class X systems (Other time, in hours, as required by the application). Please note the Class defines the minimum time, in hours, for which the standby power system is designed to operate at its rated load without being refueled or recharged.

This proposal would permit the Building Official to approve an evaluation and analysis prepared by the registered design professions for determining the appropriate minimum time, in hours, that standby power must be provided for the respective building. In addition, it should also be pointed out that the 2-hour standby power requirement is also not consistent with reviews of the WTC bombing in 1996 that concluded buildings should not take longer than 1-hour to evacuate.

**Cost Impact:** Will not increase the cost of construction

This proposal will decrease the cost of construction as it will possibly reduce the size of the emergency power supply system providing standby power as well as determining the appropriate timeframe necessary for providing standby power for the operation of occupant evacuation elevators during an emergency.

G210-15 : 3008.8-  
FRABLE5036

## Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** This proposal requires a fire evacuation analysis. Not all buildings may need that. Furthermore, the design team will be required to hire a separate expert, which is cost prohibitive.

**Assembly Action :**

**None**

---

### Individual Consideration Agenda

#### *Public Comment 1:*

**Proponent : Dave Frable, representing US General Services Administration (dave.frable@gsa.gov) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

#### **2015 International Building Code**

**3008.8.1 Standby power evaluation and analysis** . An evaluation and analysis Standby power loads for occupant evacuation elevators shall be provided to determine a minimum of Type 60/Class 2/Level 1 standby power.

**Exception:** Where an egress analysis in accordance with Section 3008.1.1 determines that the appropriate time required for full building evacuation is less than one hour, the Class that defines the minimum time, in hours, that for the duration of standby power must be provided following loss or failure of the normal power supply for the occupant evacuation elevators to operate for the specific building and application. The subject evaluation and analysis shall be prepared by not less than twice the responsible registered design professional and shall be approved prior to installation calculated evacuation time.

**Commenter's Reason:** Based on the General Committee's action to approve as submitted G 207-15, this code change proposal coordinates the electrical power and standby power requirements with new section 3008.8.1 "Determination of standby power load" and provides a reasonable alternative.

Currently as written all designated occupant evacuation elevators must comply with Section 3008.8 which requires 2 hours of standby power to ensure these elevators and associated equipment are operational for the entire duration of the building evacuation. However, in many tall buildings across the country, the current 2-hour standby power requirement becomes costly and is likely much more conservative than necessary.

The intent of this code change is to provide an alternative that would permit the Class that defines the minimum time for the standby power to be determined based on twice the calculated evacuation time of the egress analysis in Section 3008.1.1.1. We believe this approach which incorporates a safety factor of 2 is a reasonable alternate for determining the minimum standby power duration than utilizing the absolute value of 2 hours. In addition, it should also be pointed out that the 2-hour standby power requirement is also not consistent with reviews of the WTC bombing in 1996 that concluded buildings should not take longer than 1-hour to evacuate.

# G213-15

3102.1, 3103.1, 3103.5 (New)

## Proposed Change as Submitted

**Proponent :** Adolf Zubia, IAFC Fire & Life Safety Section,  
representing IAFC Fire & Life Safety Section

### 2015 International Building Code

#### Revise as follows:

**3102.1 General.** The provisions of Sections 3102.1 through 3102.8 shall apply to air-supported, air-inflated, membrane-covered cable, membrane-covered frame and *tensile membrane structures*, collectively known as membrane structures, erected for a period of 180 days or longer. Those erected for a shorter period of time shall comply with Section 3103 and the *International Fire Code*. Membrane structures covering water storage facilities, water clarifiers, water treatment plants, sewage treatment plants, greenhouses and similar facilities not used for human occupancy are required to meet only the requirements of Sections 3102.3.1 and 3102.7. Membrane structures erected on a building, balcony, deck or other structure for any period of time shall comply with this section.

**3103.1 General.** The provisions of Sections 3103.1 through ~~3103.4~~ 3103.5 shall apply to structures erected for a period of less than 180 days. Tents and other membrane structures erected for a period of less than 180 days shall comply with Section 3103.5 and the *International Fire Code*. Those erected for a longer period of time shall comply with applicable sections of this code.

#### Add new text as follows:

**3103.5 Structural design.** Temporary tents and membrane structures, including those erected for a period of less than 180 days, shall be designed and constructed in accordance with Chapter 16 where any of the following conditions occur:

1. The occupant load of the tent or membrane structure exceeds 300.
2. The height of the tent or membrane structure exceeds 30 feet (9144 mm).
3. The tent or membrane structure exceeds one story.
4. The floor area of the tent or membrane structure exceeds 5,000 square feet (465 m<sup>2</sup>).

Construction documents as required by Section 1603 shall be provided for such temporary tents and membrane structures.

**Reason:** This proposal is submitted by Fire and Life Safety Section of the International Association of Fire Chiefs.

Temporary tents and membrane structures are now being constructed of significant size, with many containing multiple stories or floor levels. The potential collapse of these tents or membrane structures creates significant hazards to the occupants and others in the immediate vicinity.

These temporary tents and membrane structures have traditionally been regulated

solely by the IFC, however, the structural requirements are found in the IBC. Structural loads such as seismic, wind and snow loads impact temporary structures just the same as they would affect permanent structures.

This proposal accomplishes the following:

1. It provides a reference to the structural requirements for temporary tents and membrane structures in the IBC.
2. It includes the requirement that certain large tents and membrane structures must meet the same structural requirements that would be required for permanent structures.

This proposal will require a review of structural design for temporary tents and membrane structures over 30 feet in height or over 5,000 square feet,



over one story,



and over an occupant load of 300.



These categories of temporary tents and membrane structures are significantly larger than the typical, routine tent and membrane structure installation. The smaller tents are intentionally not included in this proposal.

A companion code change will be submitted to the IFC during the Group B code change cycle to complement this proposal.

**Cost Impact:** Will increase the cost of construction  
The cost of construction will increase to cover the additional structural evaluation necessary to show compliance with Chapter 16.

G213-15 : 3102.1-  
ZUBIA4593

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** These issues are already covered by the code in Section 3103.1.1. The code official can already tell you what requirements must be applied for a temporary structure. The proposal as written says you must do everything. That may be overkill in certain circumstances. We need similar requirements, but these need work. We need a one time permit for short term permits that can be renewed annually. As written, the proposal could put very onerous requirements on small tents that are up for only a few days. The thresholds are not right. It should state what requirements in Chapter 16 must be complied with. This is written as an exception to Chapter 16. That is rather awkward. The proposal needs work, though the general concept is good and should be pursued.

**Assembly Motion:**

**As Submitted**

**Online Vote Results:**

**Successful**

Support: 59.39% (196) Oppose: 40.61% (134)

**Assembly Action :**

**Approved as Submitted**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : Assembly Action  
requests Approve as Submitted.**

**Commenter's Reason:** This code change proposal is on the agenda for individual consideration because the proposal received a successful assembly action. The assembly action for Approve as Submitted was successful by a vote of 59.39% (196) to 40.61% (134) by eligible members online during the period of May 14 - May 28, 2015.

### *Public Comment 2:*

**Proponent : Region VII, representing ICC Region VII  
(admin@iccregionvii.org) requests Approve as Submitted.**

**Commenter's Reason:** Based upon the initial proponents reason statements.

### *Public Comment 3:*

**Proponent : Ali Fattah, City of San Diego Development Services,  
representing City of San Diego (afattah@sandiego.gov) requests**

## Approve as Modified by this Public Comment.

### Modify as Follows:

## 2015 International Building Code

**3103.5 Structural design.** Temporary tents and membrane structures, including those erected for a period of less than 180 days, shall be designed and constructed in accordance with Chapter 16 where any of the following conditions occur:

1. The ~~occupant load~~ occupancy of the tent or membrane structure ~~exceeds 300.~~
2. ~~The height of~~ is Group A and the occupant load in the tent or membrane structure exceeds 30 feet (9144 mm) is greater than 300.
3. The tent or membrane structure ~~exceeds one story.~~
4. ~~The floor area of~~ is not supported directly on the tent or membrane structure exceeds 5,000 square feet (465 m<sup>2</sup>) ground.

Construction documents as required by Section 1603 shall be provided for such temporary tents and membrane structures.

**Commenter's Reason:** We are submitting the public comment in support of the original code change proposal with the following modifications. We currently require multi story tents or tents not directly supported on the ground to be designed for the location and manner in which they are installed. The design of the tents or structures (industry term for membrane structures where a frame supports the fabric) is available however may not be updated to most current codes. Large sporting events typically have elaborate tent structures that are tall and have long spans, thresholds triggering requirements based on those two variables are difficult.

We see the logic in the 300 occupant load since the risk category changes at that threshold.

The parent Section 3103.1.1 addresses the issue generally. The code change actually requires a structural design to be submitted. A structural design is generally not submitted for tents and membrane structures regulated by the fire department.

Many in the event industry seem to believe that events will not be held in high winds or during inclement weather so structural loading should not be a concern. A Building Official's concern is impacts to the surrounding community of the installation blowing off and damaging neighboring property.

Most events are held safely however the on in a 1,000 where it does not can not be identified without a review of each one to find the one.

A structural design puts a registered design professional in charge and places the responsibility on that person to ensure safety. Additionally reuse of components for temporary structures other than bleachers results in damage that often requires an engineering evaluation to allow reuse or repair.

## Public Comment 4:

**Proponent : Marcelo Hirschler, representing GBH International**

**(gbhint@aol.com) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

## **2015 International Building Code**

**3103.5 Structural design.** Temporary tents and membrane structures, including those erected for a period of less than 180 days, shall be designed and constructed in accordance with ~~Chapter 16~~ Sections 1606, 1607 and 1609 where any of the following conditions occur:

1. The occupant load of the tent or membrane structure ~~exceeds 300.~~
2. ~~The height of~~ is greater than 500 and ~~the tent or membrane structure exceeds 30~~ exit travel distance is greater than 75 feet (9144 22 860 mm).
3. ~~The tent or membrane structure exceeds~~ is greater than one story in height.
4. ~~The floor area of the tent~~

Tents or membrane structure exceeds 5,000 square feet (465 m<sup>2</sup>). structures greater than one story in height shall also comply with Section 1613. Construction documents as required by Section 1603 shall be provided for such temporary tents and membrane structures.

**Commenter's Reason:** This public comment makes several changes to the original proposal, in line with what the committee recommended. It is clear that there is a potential hazard associated with very large temporary tents and membrane structures, which can have multiple stories and occupy large areas. Sections 1606, 1607 and 1609 deal with dead loads, live loads and wind loads; the section on snow loads is specifically not included because it appears to be less relevant to such temporary tent or membrane structures. Requirements for earthquake protection are included only for structures that are more than a single story.

### *Public Comment 5:*

**Proponent : Thomas Markel, representing Industrial Fabric Association International - Tent Rental Division (tom@bravoeventrentals.com) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

## **2015 International Building Code**

**3102.1 General.** The provisions of Sections 3102.1 through 3102.8 shall apply to air-supported, air-inflated, membrane-covered cable, membrane-covered frame and *tensile membrane structures*, collectively known as membrane structures, erected for a period of 180 days or longer. Those erected for a shorter period of time shall comply with Section 3103 and the *International Fire Code*. Membrane structures covering water storage facilities, water clarifiers, water treatment plants, sewage treatment plants,

greenhouses and similar facilities not used for human occupancy are required to meet only the requirements of Sections 3102.3.1 and 3102.7. Membrane structures erected on a building, balcony, deck or other structure for any period of time shall comply with this section.

**3103.1 General.** The provisions of Sections 3103.1 through 3103.5 shall apply to structures erected for a period of less than 180 days. Tents and other membrane structures erected for a period of less than 180 days shall comply with Section 3103.5 and the *International Fire Code*. Those erected for a longer period of time shall comply with applicable sections of this code.

**3103.5 Structural design.** Temporary tents and membrane structures, ~~including those erected~~ exceeding one story in height that are erected for a period of less than 180 days, shall comply with the following:

1. Construction documents in accordance with Section 1603 shall be provided,

2. Shall be designed and constructed in accordance with Chapter 16 where any of Sections 1606, 1607 and 1609 and,

3. Where the following conditions occur:

- ~~1. The occupant load of the tent or membrane structure exceeds 300.~~
- ~~2. The height of the tent or membrane structure exceeds 30 feet (9144 mm).~~
- ~~3. The tent or membrane structure exceeds one story.~~
- ~~4. The floor area of the tent or membrane structure exceeds 5,000 square feet (465 m<sup>2</sup>).~~

~~Construction documents as required by building official determines that seasonal snow loads are applicable, shall comply with Section 1603 shall be provided for such temporary tents and membrane structures 1608.~~

**Commenter's Reason:** Temporary tents and membrane structures may have more than one story. Under these conditions, a collapse or anchoring failure of the tent or membrane structure creates significant hazards to the occupants and bystanders in the immediate vicinity. It is important to evaluate the structural integrity of these structures to avoid potential collapse that could injure occupants and those in the immediate vicinity.

These requirements should be included in Chapter 31 because in most jurisdictions structural engineers are located in the building department. It is often problematic for fire code officials to engage them to evaluate the structural stability of temporary tents and membrane structures based on IFC requirements. The IFC was changed in 2015 to accommodate multistory tents and a companion change is necessary to synchronize the IBC.

The original code proposal placed all Chapter 16 requirements on temporary tents and membrane structures which cannot be design to meet many. By specifying the needed requirements for temporary tents; Live, Dead and Wind Loads, optionally requiring snow loads and eliminating Seismic, Flood and other loads that a temporary tent cannot be designed to handle this modification properly deals with Chapter 16 requirements.

Other items in the original proposed code change call for aspects of the tent design, such as 30' height and occupancy loads, triggering Chapter 16 requirements.

Instead this public comment doesn't trigger on requirements such as height, but rather triggers on multistory, as does the IFC.

Cost Impact: This proposal will increase the cost of construction to cover the additional structural evaluation and potential additional structural supports and tie downs.

## Public Comment 6:

**Proponent : Adolf Zubia, representing International Association of Fire Chiefs, Fire & Life Safety Section (azubiamia@yahoo.com) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

**3103.5 Structural design.** Temporary tents and membrane structures, ~~including those erected for a period of less than 180 days, exceeding one story in height~~ shall be designed and constructed in accordance with ~~Chapter 16 where any of the following conditions occur:~~

- ~~1. The occupant load of the tent or membrane structure exceeds 300.~~
- ~~2. The height of the tent or membrane structure exceeds 30 feet (9144 mm).~~
- ~~3. The tent or membrane structure exceeds one story.~~
- ~~4. The floor area of the tent or membrane structure exceeds 5,000 square feet (465 m<sup>2</sup>).~~

~~Construction documents as required by Section 1603 shall be provided for such temporary tents Sections 1606, 1607, 1608 and membrane structures 1609.~~

**Commenter's Reason:** Temporary tents and membrane structures can be erected with more than one story. Typically, these multi-story tents are for large events, with large number of occupants. Under these conditions, the collapse of the tent or membrane structure creates significant hazards to the occupants and bystanders in the immediate vicinity. It is important to evaluate the structural integrity of these structures to avoid potential collapse that could injure occupants and those in the immediate vicinity.

The revisions shown in this Public Comment are consistent with the current requirements in IFC Section 3103.9.1 which requires over 1 story to comply with Chapter 16 of the IBC.

This Public Comment revises the original proposal by making the following changes in response to Code Development Committee comments are as follows:

"These issues are already covered by the code in Section 3103.1.1. The code official can already tell you what requirements must be applied for a temporary structure." Section 3103.1.1 includes a rather vague requirement that temporary structures, regardless of the size or use, must comply with structural strength requirements of the IBC. This public comment clarifies that tents or membrane structures shall be designed and constructed per Chapter 16.

"The proposal as written says you must do everything. That may be overkill in certain circumstances. We need similar requirements, but these need work. We need a one time permit for short term permits that can be renewed annually. As written, the proposal could put very onerous requirements on small tents that are up for only a few days. The thresholds are not right." Agree that the four items noted in the proposal exceeded requirements currently in the IFC. This public comment now correlates with the following IFC requirement requiring tents and membrane structures to meet structural requirements in the IBC.

Additionally, Item 1 is deleted, since the threshold of 300 occupants could occur in a small tent or a multi-story tent and does not seem like a consistent criteria to use as a threshold.

The 30' height criteria in Item 3 is deleted, as it could be a small tent with a high center pole, or it could a large tent with a large span.

Item 4 is deleted, since there are many tent designs which would cross this threshold, but it may not be a justifiable threshold.

"It should state what requirements in Chapter 16 must be complied with. This is written as an exception to Chapter 16. That is rather awkward. The proposal needs work, though the general concept is good and should be pursued." Agree the proposal now points to the Chapter 16 sections that are most applicable to temporary, multistory tents. This includes dead load, live load, snow load and wind load sections.

---

**G213-15**

# G214-15

## 3103.5 (New), 3103.5.1 (New)

### Proposed Change as Submitted

**Proponent :** Ali Fattah, City of San Diego Development Services Department, representing City of San Diego (afattah@sandiego.gov)

## 2015 International Building Code

### Add new text as follows:

**3103.5 Accessibility.** Temporary structures shall comply with the accessibility requirements of Chapter 11.

**3103.5.1 Temporary outdoor performance areas.** An accessible route is required to an temporary outdoor performance area. An accessible route shall directly connect the temporary outdoor performance area to the assembly seating or standing area where a circulation path directly connects a temporary outdoor performance area to the an assembly seating or standing area.

**Exception:** The vertical access to the elevated temporary outdoor performance area is not required at the time of initial construction provided:

1. A ramp, lift or elevator can be installed without reconfiguration or extension of the temporary outdoor performance area or extension of the electrical system; and
2. The accessible route is not required from the assembly seating or standing area to the temporary outdoor performance area.

**Reason:** The proposed amendment addresses the accessibility requirements for temporary structures. Section 107.2 requires temporary uses to comply with the IBC including the accessibility requirements. The proposed addition of Section 3103.5 references Chapter 11 and makes clear that the temporary construction need only comply if involving the applicable facilities regulated by Chapter 11. For example a snow ramp and similar elevated structures that do not convey users are not considered amusement rides and therefore not regulated.

Section 3103.5.1 is added to address a practical issue during temporary performances where the show producer knows that no persons with mobility impairments require access onto a performance stage and prefer to incur the additional costs of a ramp or platform lift. The ADA requires all employers to accommodate persons with disabilities and as a result the code change is proposed with permissive language to allow for circumstances where access can be provided. By requiring an accessible route up to the temporary platform or stage the code change will make it possible to add a temporary platform lift or ramp if necessary to provide access. A temporary structure is very similar to a moved or relocated building; the IEBC does not require that moved or relocated buildings be made accessible. Additionally, the employee work area definition in the IBC is broad enough to classify the performance stage or platform as an employee work area that Section 1103.2.2 only requires compliance with the accessibility requirements in Section 1104.3 that requires an accessible route to connect the employee work area to the rest of the facility.

**Cost Impact:** Will not increase the cost of construction

This code change will not increase the cost of construction since the cost of installing a ramp or a lift when not needed is avoided.

G214-15 : 3103.5 (New)-  
FATTAH5007

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** Exception 2 conflicts with ADA requirements. An elevator or lift for a temporary use structure that may only be there for 15 or 20 days or less is not realistic.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : Ali Fattah, City of San Diego Development Services, representing City of San Diego (afattah@sandiego.gov) requests Approve as Submitted.**

**Commenter's Reason:** We are submitting this public comment carefully considering the feedback provided by the General Committee during the committee action hearings.

- The committee stated that temporary structures were already regulated by Section 1103.1 so the code change is redundant.
- The committee stated that the exception proposed to Section 3103.5.1 is misleading since the permit applicant would construct the outdoor performance area and later on during the inspection would be required to provide access.
- It is not clear who would decide to apply exception # 2.
- The Access Board rose in support of the proposal because it is not clear whether Section 3103 intends temporary structures to comply only with vertical/lateral load requirements, fire separation and means of egress requirements or all the requirements in the IBC and it's referenced standards. Some have interpreted that access is not required since it is not explicitly identified in Section 3103.

Section 3103 of the IBC triggers requirements for temporary structures.

1. Section 3103.1.1 requires temporary structures and uses to conform to the structural strength, fire safety, means of egress, accessibility, light, ventilation and sanitary requirements of this code as necessary to ensure public health, safety and general welfare.
2. Section 3103.3 and 3103.4 require temporary structures to comply with T 602 for location on property and means of egress requirements with modified requirements.
3. It is clear that Section 3103 provides a road map to reaffirm some requirements in the IBC and to modify some.

The proposed Section 3103.5 proposes to affirm the requirement that accessibility is required for temporary structures. Additionally the proposed Section makes clear the intent of Section 1103.1 that accessibility is required for "sites, buildings, structures, facilities, elements and spaces, temporary or permanent" which is similar to Section 3103.3 and 3103.4. Additionally the proposal adds a modification to accessibility

similar to the means of egress modification shown in Section 3103.4 to limit access to outdoor temporary performance areas within the limits of Section 1103.2.2. Additionally the proposal seeks to clarify that access needs to be provided for employees or when it is determined that the stage is not only to be used by employees which would be in violation of Section 1103.2.2.

The jurisdictions represented by the ICC inspect numerous outdoor performance areas for concerts, sporting events and temporary events. We require access and always get push back that access does not need to be provided since the construction is temporary and since the elevated performance areas are only accessed by performers. The proposal is akin to self certification wherein the applicant describes the proposed use and is exempted from access accordingly but is required to provide the basic infrastructure to insure that in the event access is required by an employee it can be provided with limited effort.

The proposed code change intends to ensure uniformity and clarity in code application and to avoid non-enforcement of Ch11 requirements.

## *Public Comment 2:*

**Proponent : Region VII, representing ICC Region VII (admin@iccregionvii.org) requests Approve as Submitted.**

**Commenter's Reason:** Based upon the proponents initial reason statement.

---

**G214-15**

# G215-15

## 3104.3

### **Proposed Change as Submitted**

**Proponent :** Mike Fischer, Kellen Company, representing the Plastic Glazing Coalition of the American Chemistry Council (mfischer@kellencompany.com)

## **2015 International Building Code**

### **Revise as follows:**

**3104.3 Construction.** The *pedestrian walkway* shall be of noncombustible construction.

#### **Exceptions:**

1. Combustible construction shall be permitted where connected buildings are of combustible construction.
2. *Fire-retardant-treated wood*, in accordance with Section 603.1, Item 1.3, shall be permitted for the roof construction of the *pedestrian walkway* where connected buildings are a minimum of Type I or II construction.
3. Awnings or canopies installed at a *pedestrian walkway* shall be in accordance with Section 3105.

**Reason:** Awnings and canopies are often used at pedestrian walkways. Section 3104.3 requires that pedestrian walkways be of non-combustible construction, but provides no guidance on canopies or awnings that may cover, or project over, the walkway. The proposal provides a reference to indicate that the provisions of 3105, which apply to awnings and canopies in other locations, also apply over pedestrian walkways.

**Cost Impact:** Will not increase the cost of construction  
The proposal is a clarification of existing code provisions; it does not add new requirements.

G215-15 : 3104.3-  
FISCHER5483

---

### **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The language and the flammability levels of the roof structure are problematic.

**Assembly Action :**

**None**

---

### **Individual Consideration Agenda**

#### *Public Comment 1:*

**Proponent :** Mike Fischer, Kellen, representing the Plastic Glazing Coalition of the American Chemistry Council

**(mfischer@kellencompany.com) requests Approve as Submitted.**

**Commenter's Reason:** IBC Section 3104.3 contains requirements for the materials permitted to be used at pedestrian walkways. Section 3105 contains requirements for awnings and canopies. This proposal does not change the code requirements; it makes it clear that awnings and canopies used over pedestrian walkways governed by 3104.3 must also comply with 3105, which includes structural, durability and fire performance measures.

There was significant debate during the committee hearing about the use of canopies over these walkways, but the code does not prohibit their installation. Opponents of this proposal perceived it as a relaxing of the code, when in fact it is actually strengthening code *compliance* by clearing up this potential ambiguity. The proposal is not addressing only plastic materials and glazing; it applies to all types of construction materials.

Additional debate centered on whether or not such structures *should* be permitted to be constructed with plastic elements; they already are permitted and in fact are used in many applications. Various photos of both awnings and canopies in use and permitted by the code are attached; ironically the week after the CDH I travelled to Charlotte. The Charlotte airport was under construction; I was greeted by a temporary canopy made from a flexible fabric material installed on a frame system over a pedestrian walkway (two photos attached).

Some of the photos included with this public comment show structures that combine elements of awnings *and* canopies; all show applications over pedestrian walkways.

















## *Public Comment 2:*

**Proponent : Marcelo Hirschler, representing GBH International (gbhint@aol.com) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

**3104.3 Construction.** The *pedestrian walkway* shall be of noncombustible construction.

#### **Exceptions:**

1. Combustible construction shall be permitted where connected buildings are of combustible construction.
2. *Fire-retardant-treated wood*, in accordance with Section 603.1, Item 1.3, shall be permitted for the roof construction of the *pedestrian walkway* where connected buildings are a minimum of Type I or II construction.
3. ~~Awnings~~ The coverings for awnings or canopies installed at a pedestrian walkway shall be in accordance comply with Section ~~3105~~ 3105.4.

#### **3105.4 Awnings Coverings for awnings and canopy materials.**

Awnings and *canopies* shall be provided with an *approved* covering that ~~meets~~ complies with one of the following:

1. The fire propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 ~~or has~~ ,
2. Has a *flame spread index* not greater than 25 when tested in accordance with ASTM E 84 or UL 723, or

3. Complies with all of the following criteria as tested in accordance with NFPA 286:
  - 3.1. During the 40 kW exposure, flames shall not spread to the ceiling.
  - 3.2. Flashover, as defined in NFPA 286, shall not occur.
  - 3.3. The flame shall not spread to the outer extremity of the sample on any wall or ceiling.
  - 3.4. The peak heat release rate throughout the test shall not exceed 800 kW.

**Exception:** The fire propagation performance and flame spread index requirements shall not apply to awnings installed on detached one- and two-family dwellings.

**Commenter's Reason:** The intent of this code proposal (and of the comment) is to deal with the coverings for the awnings or canopies. Awning is defined in the IBC as "An architectural projection that provides weather protection, identity or decoration and is partially or wholly supported by the building to which it is attached. An awning is comprised of a lightweight frame structure over which a covering is attached." Clearly, the intent of section 3105.4 (and of the proposed amendment to section 3104.3) is to deal with the fire properties of the coverings and not of the structural section of the awning. This comment is not intended to modify the change approved in G220, and the corresponding language is used here also, for clarification. This change would make sections 3014 and 3105.4 consistent with the committee's comment. The proposed change to the title of section 3105.4 (although titles are within the jurisdiction of ICC staff) would make it clear that this section also handles exclusively the coverings.

---

G215-15

# G218-15

## 3105.1

### Proposed Change as Submitted

**Proponent :** Victor Cuevas, representing City of Los Angeles

### 2015 International Building Code

#### Revise as follows:

**3105.1 General.** *Awnings, canopies* and ~~*canopies*~~ *trellises* shall comply with the requirements of Sections 3105.2 through 3105.4 and other applicable sections of this code.

**Reason:** Trellises are not currently addressed by the IBC. Trellises represent no greater hazard than awnings or canopies, which are similar to trellises, except that they have a cover.

**Cost Impact:** Will not increase the cost of construction  
Adding the term trellis to the code will not require that construction work be made any different than the way it's currently done.

G218-15 : 3105.1-  
CUEVAS4921

---

### Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** Trellises are not defined in Section 3105. Trellis requirements are not related to canopies and awnings. This is the wrong place for the provisions and the proposed changes do not improve the code.

**Assembly Action :**

**None**

---

### Individual Consideration Agenda

#### *Public Comment 1:*

**Proponent :** Victor Cuevas, representing City of Los Angeles  
(victor.cuevas@lacity.org) requests **Approve as Submitted.**

**Commenter's Reason:** Since the concerns and comments raised by the committee were addressed under G219-15, and since there is no other section in the code where similar structures can be found, we would like the membership to take a second look and overturn the committee's original decision.

G218-15

# G219-15

202 (New), 3105.3

## Proposed Change as Submitted

**Proponent :** Victor Cuevas, representing City of Los Angeles

### 2015 International Building Code

**Add new definition as follows:**

#### SECTION 202 DEFINITIONS

**TRELLIS.** A permanent structure or architectural projection of rigid construction that provides shading, identity or decoration. Trellises may be constructed of lattice members so that a sphere of 10 inches minimum in diameter can pass through, or of members running in one direction only with a minimum clear spacing between the members of not less than 4 inches. A trellis is permitted to be structurally independent or supported by attachment to a building on one or more sides.

**Revise as follows:**

**3105.3 Design and construction.** Awnings, canopies and canopies trellises shall be designed and constructed to withstand wind or other lateral loads and live loads as required by Chapter 16 with due allowance for shape, open construction and similar features that relieve the pressures or loads. Structural members shall be protected to prevent deterioration. Awnings and trellises shall have frames of noncombustible material, *fire-retardant-treated wood*, wood of Type IV size, heavy timber or 1-hour construction with combustible or noncombustible covers and shall be either fixed, retractable, folding or collapsible.

**Exception:** Trellises in Group R-3 occupancies shall be permitted to be constructed of any materials allowed by this code.

**Reason:** The proposed new definition for trellis, is similar to a canopy, except without a covering. This definition incorporates spacing requirements that have been developed and used for trellises at single family dwellings. Section 3105.3 is being amended to include trellises, and to include a reference to heavy timber. The exception is in place to continue allowances for trellises of any material or size in one- and two-family homes.

**Cost Impact:** Will not increase the cost of construction  
This change does not require any change in the way buildings are built. It simply establishes a criteria/threshold for when floor area needs to be accounted for, when roof projections exceed the outer walls of a building.  
Adding the term trellis to the code will not require that construction work be made any different than the way it's currently done.

G219-15 : 3105.3-  
CUEVAS4922

---

## Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** The concept is good. However, there are problems with the proposal as currently written. Definitions should not carry technical requirements. It may not be appropriate in the awnings and canopies section. it exempts R3 occupancies, but its application regarding R2 occupancies should be clarified. A percentage opening requirement might be more appropriate as opposed to the specific requirements that are proposed.

**Assembly Motion:**

**As Modified**

**Online Vote Results:**

**Failed**

Support: 38.38% (109) Oppose: 61.62% (175)

**Assembly Action :**

**None**

**Online Floor Modification:**

**SECTION 202**

**DEFINITIONS**

**TRELLIS.** A permanent structure or architectural projection of rigid and open lattice construction that provides shading, identity or decoration. ~~Trellises may be constructed of lattice members so that a sphere of 10 inches minimum in diameter can pass through, or of members running in one direction only with a minimum clear spacing between the members of not less than 4 inches. A trellis is permitted to be structurally independent or supported by attachment to a building on one or more sides.~~

**3105.3 Design and construction.** Awnings, canopies and trellises shall be designed and constructed to withstand wind or other lateral loads and live loads as required by Chapter 16 with due allowance for shape, open construction and similar features that relieve the pressures or loads. Structural members shall be protected to prevent deterioration. Awnings and trellises shall have frames of noncombustible material, fire-retardant-treated wood, wood of Type IV size, heavy timber or 1-hour construction with combustible or noncombustible covers and shall be either fixed, retractable, folding or collapsible.

**Exception:** Trellises in Group R-3 occupancies shall be permitted to be constructed of any materials allowed by this code.

**3105.3.1 Trellis.** A trellis shall be constructed of lattice members so that a sphere of 10 inches minimum in diameter

can pass through, or of members that are running in one direction only have a minimum clear spacing between the members of not less than 4 inches. A trellis is permitted to be structurally independent or supported by a building on one or more sides.

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : Victor Cuevas, representing City of Los Angeles (victor.cuevas@lacity.org) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

**3105.3 Design and construction.** *Awnings, canopies* and trellises shall be designed and constructed to withstand wind or other lateral loads and live loads as required by Chapter 16 with due allowance for shape, open construction and similar features that relieve the pressures or loads. Structural members shall be protected to prevent deterioration. *Awnings* and trellises shall have frames of noncombustible material, *fire-retardant-treated wood*, wood of Type IV size, heavy timber or 1-hour construction with combustible or noncombustible covers and shall be either fixed, retractable, folding or collapsible.

**Exception:** Trellises in Group R-3 occupancies shall be permitted to be constructed of any materials allowed by this code.

**3105.3.1 Trellises.** Trellises shall be constructed of lattice members with more than 75 percent open.

**Commenter's Reason:** This comment addresses the comments and concerns raised by the committee by modifying the original proposal slightly. The exception is to allow any type of construction material on an R-3 Occupancy.

### *Public Comment 2:*

**Proponent : Tim Earl, representing GBH International (tearl@gbhinternational.com) requests Approve as Modified by this Public Comment.**

**Replace Proposal as Follows:**

### **2015 International Building Code**

#### **SECTION 202 DEFINITIONS**

**TRELLIS.** A permanent structure or architectural projection of rigid and open lattice construction that provides shading or decoration.

## **SECTION 3106 TRELLISES**

**3106.1 Trellises.** Trellises shall comply with Section 3105.3.

**Exception:** Trellises in Group R-3 occupancies shall be permitted to be constructed of any materials allowed by this code.

**Commenter's Reason:** Trellises are not currently addressed in the IBC, and this need is a gap which should be filled. The committee stated that the concept was good but that the proposal needed work. The original proposal tried to fit trellises into section 3105. This Public Comment adds a new section 3106 for trellises.

R-3 occupancies are exempted due to the small number of occupants.

---

G219-15

# G221-15

3111, 3111.1, 3111.1.1, 3111.1.1.1 (New), 3111.1.1.2 (New)

## Proposed Change as Submitted

**Proponent :** Victor Cuevas, representing City of Los Angeles

### 2015 International Building Code

#### SECTION 3111 PHOTOVOLTAIC PANELS AND MODULES

**3111.1 General.** Photovoltaic panels and modules shall comply with the requirements of this code and the *International Fire Code*.

**3111.1.1 Rooftop-mounted photovoltaic panels and modules.** Photovoltaic panels and modules installed on a roof or as an integral part of a roof assembly shall comply with the requirements of Chapter 15 and the *International Fire Code*.

#### **Add new text as follows:**

**3111.1.1.1 Height and area** Photovoltaic panel arrays supported by a structure shall not constitute an additional story or additional floor area provided one of the following is met:

1. The highest point of the structure/panel array shall meet the lower of the two values below:

1.1 Ten feet above the allowable building height; or

1.2. Ten feet above the roof of the building immediately below.

2. Either no use is located on the roof beneath the photovoltaic array or the use of the roof shall be limited to parking complying with all of the following:

2.1. The total area within the perimeter of each photovoltaic array shall not be greater than 6,000 square feet.

2.2. The distance between solar photovoltaic array structures shall be not less than 10 feet.

2.3. Where a driveway aisle is located between arrays, the distance between the arrays shall be not less than 25 feet.

2.4. No storage shall occur beneath the array, and

2.5. The structure supporting the array shall be completely open on all sides, with no interior partitions.

**3111.1.1.2 Fire-resistance** Noncombustible structural members supporting photovoltaic panel arrays shall not be required to have a fire-resistance rating as follows:

1. Where no use occurs beneath the array, the array structure and supported photovoltaic panels shall have uniformly distributed and unobstructed openings throughout the top of the array as approved by the code official, to allow heat and gases to escape. The code official is authorized to require signage prohibiting use of the space beneath the array; or

2. Where parking is located beneath the array, the requirement of Section 3111.1.1.1 are met.

**Reason:** Add regulations similar to the State of California. The area limitation of 6,000 square feet will allow the Fire Department to get around the structures when putting out a fire.

**Cost Impact:** Will not increase the cost of construction  
This code amendment will not increase the cost of construction. This amendment seeks to establish consistency in requirements for the regulation of Photovoltaic systems installation.

G221-15 : 3111.1.1.1  
(New)-CUEVAS4746

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The proposal conflicts with the International Fire Code. It is almost right, but it is not quite right, though the concept is good. Under Section 3111.1.1.1, it should be split into parking and non-parking requirements. It should be clarified that the reduction in fire resistance is for the array and not the main structure of the building. Should it make a difference if the area under the array is sprinklered? Leaving it up to the code official to determine the gaps between arrays is not appropriate. Under Section 3111.1.1.2, where it indicates there is "no use under the array," it is not clear what that means. Buildings with setbacks may also need to be addressed.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : Victor Cuevas, representing City of Los Angeles (victor.cuevas@lacity.org) requests Approve as Modified by this Public Comment.**

**Replace Proposal as Follows:**

### **2015 International Building Code**

#### **SECTION 3111 PHOTOVOLTAIC PANELS AND MODULES**

**3111.1 General.** Photovoltaic panels and modules shall comply with the requirements of this code and the *International Fire Code*.

**3111.1.1 Rooftop-mounted photovoltaic panels and modules.** Photovoltaic panels and modules installed on a roof or as an integral part of a roof assembly shall comply with the requirements of Chapter 15 and the *International Fire Code*.

**3111.1.1.1 Photovoltaic panel arrays supported by a structure with no use underneath.** Photovoltaic panel arrays supported by a structure with no use underneath shall not constitute an additional story, height, or floor area provided the highest point of the structure or photovoltaic panel array does not exceed the lower of the following values:

1. Ten feet above the allowable building height; or
2. Ten feet above the roof of the building immediately below.

**3111.1.1.2 Photovoltaic panels supported by a structure over parking stalls.** Photovoltaic panels supported by a structure over parking stalls shall not constitute an additional story, height, or floor area where all of the following conditions are met:

1. The total area within the perimeter of each photovoltaic panel array shall be not greater than 6,000 square feet.
2. The distance between photovoltaic panel array structures shall be not less than 10 feet.
3. Where a driveway aisle is located between arrays, the distance between the photovoltaic panel arrays shall be not less than 25 feet.
4. The photovoltaic panel array structure is used only for parking purposes with no storage underneath.
5. The structure supporting the photovoltaic panel array is completely open on all sides, with no interior partitions.
6. It complies with the height limitations of Section 3111.1.1.1.

**3111.1.1.3 Fire-resistance.** Noncombustible structural members supporting photovoltaic panel arrays shall not be required to have a fire-resistance rating under either of the following conditions:

1. Where photovoltaic panel arrays are supported by a structure with no use underneath and the array structure and supported photovoltaic panels have uniformly distributed and unobstructed openings throughout the top of the array, as approved by the code official, to allow heat and gases to escape. The code official is authorized to require signage prohibiting use of the space beneath the array; or
2. Where photovoltaic panels are supported by a structure over parking stalls, the panels constitute the roof and both of the following conditions are satisfied:
  - 2.1. The requirements of Section 3111.1.1.2 are satisfied.
  - 2.2. The area within the perimeter of the photovoltaic panel array has maximum rectangular dimensions of 40 feet by 150 feet.

**Commenter's Reason:** The original proposal was replaced to address the committee's comments and recommendations.

---

G221-15

# G223-15

**107.2.7 (New), 202 (New), 3101.1, 3112 (New), 3112.1 (New), 3112.1.1 (New), 3112.2 (New), 3112.3 (New), 3112.4 (New)**

## **Proposed Change as Submitted**

**Proponent :** Edward Kulik, representing Building Code Action Committee (bcac@iccsafe.org)

## **2015 International Building Code**

**Add new text as follows:**

**107.2.7 Relocatable buildings.** Construction documents for relocatable buildings shall comply with this section and Section 3112.

**Add new definition as follows:**

### **SECTION 202 DEFINITIONS**

**-RELOCATABLE BUILDING.** A partially or completely assembled building constructed and designed to be reused multiple times and transported to different building sites.

**Revise as follows:**

**3101.1 Scope.** The provisions of this chapter shall govern special building construction including membrane structures, temporary structures, *pedestrian walkways* and tunnels, *automatic vehicular gates, awnings and canopies, marquees, signs, and towers,* antennas, and ~~antennas~~ relocatable buildings.

**Add new text as follows:**

### **SECTION 3112 RELOCATABLE BUILDINGS**

**3112.1 General.** The provisions of this section shall apply to relocatable buildings. Relocatable buildings manufactured after the effective date of this code shall comply with the applicable provisions of this code.

**3112.1.1 Compliance.** A newly constructed relocatable building shall comply with this code for new construction. An existing relocatable building that is undergoing alteration, addition, change of occupancy or relocation shall comply with Chapter 13 of the *International Existing Buildings Code*.

**3112.2 Supplemental information.** Supplemental information specific to a relocatable building shall be submitted to the authority having jurisdiction. It shall, as a minimum, include all of the following in addition to the information required by Section 105.

1. Manufacturer's name and address.
2. Date of manufacture.
3. Serial number of module.
4. Manufacturer's design drawings.
5. Type of construction in accordance with Section 602.
6. Design loads including: roof live load, roof snow load, floor live load,

- wind load and seismic site class, use group and design category.  
7. Additional building planning and structural design data.  
8. Site built structure or appurtenance attached to the relocatable building.

**3112.3 Manufacturer's data plate.** Each relocatable module shall have a data plate that is permanently attached on or adjacent to the electrical panel, and shall include the following information:

1. Occupancy group.
2. Manufacturer's name and address.
3. Date of manufacture.
4. Serial number of module.
5. Design roof live load, design floor live load, snow load, wind and seismic design.
6. Approved quality assurance agency or approved inspection agency.
7. Codes, and standards of construction.
8. Envelope thermal resistance values.
9. Electrical service size.
10. Fuel burning equipment and size.
11. Special limitations if any.

**3112.4 Inspection agencies.** The building official is authorized to accept reports of inspections conducted by approved inspection agencies during off-site construction of the relocatable building, and to satisfy the applicable requirements of Sections 110.3 through 110.3.10.1.

**Reason:** In July/2014 the ICC Board decided to sunset the activities of the Code Technology Committee (CTC). This is being accomplished by re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). This proposal falls under the CTC Area of Study entitled Relocatable Modular Buildings. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website.

This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

Unlike site-built buildings, which are typically intended to remain on their original site for the life of the building, relocatable modular buildings are designed and intended for relocation, reuse and/or repurposing. Many states have statutes that govern the building and relocating of relocatable modular buildings. For those that do not have state mandated requirements, much confusion and inconsistency exists about the requirements for relocatable modular buildings as existing buildings.

The Modular Building Institute (MBI) ([www.modular.org](http://www.modular.org)) estimates that there are over 600,000 code compliant relocatable buildings in use in North America today. While it is impossible to determine the exact amount owned by the public at large, MBI estimates that public school districts across North America collectively own and operate about 180,000 relocatable classrooms with the industry owning and leasing an additional 120,000. Additionally, the industry owns and leases approximately 280,000 relocatable buildings for various other business occupancies, including construction site offices and temporary sales offices.

Unique characteristics of relocatable modular buildings that are unlike site-built buildings include:

- There are sections of the IBC that are applicable equally to both site-built and

relocatable modular buildings, particularly for new construction.

- There are sections of the conflicting code sections that cannot be applied to both site-built and relocatable modular buildings, specifically related to construction documents, inspection, and relocation.

The IBC does not have specific requirements on how to treat these buildings. In the absence of clear definitions and requirements that are specific to both new and existing relocatable modular buildings, many code officials attempt to apply similar, but non-related sections of the building code intended for site built buildings to the relocatable modular industry. There are unique attributes to relocatable modular buildings that warrant their own requirements in a new chapter in this code.

Two proposals have been submitted on the subject of relocatable modular buildings. One proposal for new construction (this proposal) and a second proposal to address the relocation of modular buildings (proposal to the IEBC). This proposal includes:

- The definition has been reproduced from the definition that was added to the 2015 IEBC last cycle.

- Identification and inclusion of relocatables into Special Construction, Chapter 31.

This chapter applies to new relocatable buildings, and also new site built structures.

Moving this document forward through the ICC code development process will help the modular building industry comply with the intent of the code, provide a clear and consistent path for enforcement professionals, and for compliance by owners of relocatable buildings who wish to re-use or repurpose their existing buildings.

**Cost Impact:** Will not increase the cost of construction

This code change proposal will not increase the cost of construction due to the re-usable/relocatable nature of such buildings.

G223-15 : 3101.1-  
KULIK4952

---

## **Public Hearing Results**

**Committee Action:**

**Approved as Submitted**

**Committee Reason:** This is consistent and needed given what was just approved regarding relocatable buildings for the International Existing Building Code. The Commonwealth of Virginia has a program that is very similar to this and it works. Guidance in the code for this is welcome. We have had difficulty approving relocatable buildings and this would help significantly. We need to know what information should be required for approval for these types of structures.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

*Public Comment 1:*

**Proponent : Vickie Lovell, InterCode Incorporated, representing Modular Building Institute (vickie@intercodeinc.com) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

### **2015 International Building Code**

**107.2.7 Relocatable buildings.** Construction documents for relocatable buildings shall comply with this section and Section 3112.

**Exception:** Manufactured housing used as dwellings.

**3112.1 General.** The provisions of this section shall apply to relocatable buildings. Relocatable buildings manufactured after the effective date of this code shall comply with the applicable provisions of this code.

**Exception:** This section shall not apply to manufactured housing used as dwellings.

**Commenter's Reason:** The committee correctly identified a possible misinterpretation of this section that is specific to relocatable structures used for commercial purposes that are designed to be moved. This section should not be confused with or applied to transportable manufactured housing that is identified in Appendix E of the IRC or NFPA 501. The manufacture, use, and transport of those units are governed by other regulatory documents, including federal, state and/or local requirements.

Cost Impact: Will not increase the cost of construction.

There is no cost impact since it is a clarification as to what types of structures are applicable to this section. The IRC addresses manufactured housing used as dwellings.

---

G223-15

# G226-15

## 3302.3, 3302.3.1 (New)

### Proposed Change as Submitted

**Proponent :** William Hall, Portland Cement Association,  
representing Portland Cement Association (jhall@cement.org)

## 2015 International Building Code

**3302.3 Fire safety during construction.** Fire safety during construction shall comply with the applicable requirements of this code and the applicable provisions of Chapter 33 of the *International Fire Code*.

### **Add new text as follows:**

**3302.3.1 Special requirements for Type V buildings with combustible framing material.** Where a building using combustible framing members exceeds the allowable height or number of stories for designation NS in Tables 504.3 or 504.4, the following shall be required:

1. The fire prevention program superintendent responsibilities required in Section 3308 of the International Fire Code shall be provided by an approved agency. The approved agency shall meet the following requirements:

1.1. Shall provide all information as necessary for the building official to determine that the agency meets the applicable requirements.

1.2. Shall be objective, competent and independent from the contractor or owner responsible for the fire prevention program.

1.3. Shall employ experienced personnel educated in supervising and evaluating safe jobsite practices to provide services to perform a fire watch and the enforcement of the fire prevention program.

2. Qualified personnel of the approved agency shall be onsite 24 hours of each day starting the day that framing materials are delivered to the site up through completion of the building.

3. Smoking and cooking shall be prohibited.

4. Temporary heating and hot work shall be supervised by the fire prevention program superintendent or agency.

**Reason:** Fires during construction have been on the increase across the U.S and other countries which utilize combustible construction in multi-story buildings. The intensity of these fires put adjacent buildings, businesses and residents at risk until the project is complete, which can take up to 2 years to complete or more if the project stalls. These fires are caused by a multitude of reasons including, but not limited to, arson, smoking, cooking, heating and hot work. Fire service, even in large well equipped jurisdictions cannot effectively stop these fires and most of these incidents end in total loss of the building under construction as well as damaged or destroyed adjacent buildings. Many times adjacent buildings are at risk due to the extreme heat, flying embers and wind speeds, as seen in the recent Los Angeles fire where paper, laying on a desk in an adjacent high rise structure caught fire and 6 six floors of the high rise were on fire.

The International Fire Code requires a Fire Prevention Program Superintendent be provided on all construction sites. This proposal would require that for combustible construction which is over the base allowable height or story, the agency or superintendent be onsite 24 hours a day to mitigate potential fire and conflagration.

**Bibliography:** <http://magazine.sfpe.org/fire-protection-design/fire-safety-buildings-under-construction>

**Cost Impact:** Will increase the cost of construction

This proposal will increase the cost of construction for buildings of Type V which are higher or contain more stories than the base allowable. The amount would be the cost difference to provide on a 24 hour basis, rather than daily basis which is already required by the fire code.

G226-15 : 3302.3.1  
(New)-HALL4716

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** There is a need to address the general concepts in this proposal. However, there are problems this proposal. The provisions should be in the International Fire Code. The thresholds should be re-evaluated. We should not need someone on site 24/7 for small buildings. It is large construction sites that should be the focus. Calling out one type of construction is inappropriate. It should apply to all construction types. We cannot regulate arson and stupidity. As written it is unenforceable.

**Assembly Motion:**

**As Modified**

**Online Vote Results:**

**Failed**

Support: 8.13% (27) Oppose: 91.87% (305)

**Assembly Action :**

**None**

**Online Floor Modification:**

### **3302.3.1 Special requirements for Type V buildings**

**with combustible framing material.** Where a building using combustible framing members exceeds the allowable height or number of stories for designation NS in Tables 504.3 or 504.4, the following shall be required. For the purposes of this section footnote d in Tables 504.3 or 505.4 shall not apply:

1. The fire prevention program superintendent responsibilities required in Section 3308 of the International Fire Code shall be provided by an approved agency. The approved agency shall meet the following requirements:

1.1. Shall provide all information as necessary for the building official to determine that the agency meets the applicable requirements.

1.2. Shall be objective, competent and independent from the contractor or owner responsible for the fire prevention program.

1.3. Shall employ experienced personnel educated in

supervising and evaluating safe jobsite practices to provide services to perform a fire watch and the enforcement of the fire prevention program.

2. Qualified personnel of the approved agency shall be onsite 24 hours of each day starting the day that combustible framing materials are delivered to the site up through completion of the building.
3. Smoking and cooking shall be prohibited.
4. Temporary heating and hot work shall be supervised by the fire prevention program superintendent or agency.

---

### **Individual Consideration Agenda**

#### *Public Comment 1:*

**Proponent : William Hall, Portland Cement Association, representing Portland Cement Association (jhall@cement.org) requests Approve as Modified by this Public Comment.**

**Modify as Follows:**

#### **2015 International Building Code**

**3302.3.1 Special requirements for Type V buildings with combustible framing material.** Where a building using combustible framing members exceeds ~~the allowable 3 stories in height or number as measured from grade level, all of stories for designation NS in Tables 504.3 or 504.4,~~ the following shall be required:

1. The fire prevention program superintendent responsibilities required in Section 3308 of the International Fire Code shall be provided by an approved agency. The *approved agency* shall meet the following requirements:
  - 1.1. Shall provide all information as necessary for the *building official* to determine that the agency meets the applicable requirements.
  - 1.2. Shall be objective, competent and independent from the contractor or owner responsible for the fire prevention program.
  - 1.3. Shall employ experienced personnel educated in supervising and evaluating safe jobsite practices to provide services to perform a fire watch and the enforcement of the fire prevention program.
2. Qualified personnel of the approved agency shall be onsite 24 hours of each day starting the day that framing materials are delivered to the site up through completion of the building.
3. Smoking and cooking shall be prohibited.
4. Temporary heating and hot work shall be supervised by the fire prevention program superintendent or agency.

**Commenter's Reason:** Many jurisdictions do not adopt or enforce the IFC and further do not have a fire official to inspect hot work while under construction. Construction fires are on the rise and based on an ICC report are occurring at about

3 per week across the nation. We agree with the committee and have modified the proposal to be effective when the building is 4 stories or more. No evidence or data can be found to indicate that non-combustible construction types are experiencing fires that become out of control and burn to the ground. Only construction types using wood products as the primary framing are experiencing problems. Normally we see the stair tower or the pedestal as the only remaining remnants. Contrary to comments heard at the hearings, concrete and masonry products do not burn and are not combustible. Anything will melt if enough heat is applied, however building fires with normal contents do not produce enough heat to cause concrete and masonry to melt or fail. Combustible forms for concrete are no longer used.

---

**G226-15**

# G228-15

## 3304.2 (New)

### **Proposed Change as Submitted**

**Proponent :** Jonathan Humble, American Iron and Steel Institute, representing American Iron and Steel Institute (jhumble@steel.org); Jason Thompson, Masonry Alliance for Codes and Standards, representing Masonry Alliance for Codes and Standards (jthompson@ncma.org)

## **2015 International Building Code**

### **Add new text as follows:**

**3304.2 Access for fire fighting** A vehicle access plan for fire fighting, complying with Section 3310 of the *International Fire Code*, shall be submitted to the fire department for review and approval prior to construction. For Type V construction with combustible building elements, four stories or more above grade plane, an approved vehicle access plan shall also demonstrate access to all sides of the building's perimeter for purposes of fire fighting.

**Reason:** The intent of IBC Chapter 33 (Safeguards During Construction) is to govern the provisions for safety during construction and the protection of adjacent properties. Unfortunately, the Chapter lacks requirements addressing the ability for fire fighters access to construction sites in cases of emergency. While on the surface this may be viewed as solely a fire department issue, we present a case here indicating that coordination should take place to ensure that this aspect is addressed prior to construction.

The first part of this proposal is to have the simple reference to the International Fire Code Section 3310 (Access for Fire Fighting). It is the intent to use this proposal as a reference to what will be expected during construction and/or demolition of a project in accordance with the International Fire Code.

The second part of the proposal is to add planning requirements for buildings constructed of Type V combustible framing. Recent fires have demonstrated a need to recommend an additional enhancement to the provisions of the IBC. In these cases the size and volume of the buildings in those reported fires demonstrated a need to improve fire and life safeguards during construction. The four (4) story value was determined based on two sources; one - a review of other sections within IBC and IFC Chapter 33 where a height value was referenced (Sections 3310 and 3311); and two - analyzing fires of Type V construction and finding that buildings 4 stories or greater appeared to pose the greater threat to the building project and neighboring properties. Type V combustible construction when under construction represents a large quantity of combustible framing that when exposed will contribute to the spread and intensity of a fire.

Without adequate access, fire fighters have little options in extinguishing the fire or to protect adjacent property and occupants. We are therefore proposing to add the requirement for a plan of access for fire apparatus and fire fighters in order to have the opportunity fight the fire and protect adjacent properties with greater efficiency. We further believe that this proposal will compliment the provisions of the International Fire Code Section 3310, and Appendix D.

**Cost Impact:** Will increase the cost of construction

Providing vehicle access to all sides of the building's perimeter is currently required under IBC Section 3302.3, which sends the user to IFC Section 3310 (Access for Fire

Fighting). Therefore, for the first part of this proposal there is no cost impact. However, the second part of this proposal will add a minor increase as the plan must be further enhanced to cover vehicle access to all sides of the project. The additional vehicle access to the project by fire fighters should outweigh that additional cost to prepare an enhanced plan as a result of the benefit of the increase access by the fire fighters, thus potentially reducing the spread of fire and the amount of fire damaged area to rebuild. The additional safety measure may also contribute to reducing the cost for construction insurance.

G228-15 : 3304.2 (New)-  
HUMBLE4598

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** The reference to the IFC is acceptable. However, there are many deficiencies in this proposal. These types of requirements do not belong in this section of the code. The proposal is redundant. The information is provided in the International Fire Code. The reference to only Type V construction is concerning. A 4 story building of Residential R3 or R4 occupancy with multiple dwelling units, regardless of area, would be required to have fire department vehicle access on all sides. Requirements related to fire hose extension may be preferable. Highly urban residential buildings and such buildings in rural areas on steeply sloped sites would not be able to comply with these provisions. This is consistent with previous committee action regarding fire department vehicle access on proposals G 143 and G 145. If this is about reviewing something before it is constructed, it belongs in Chapter 1.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : William Hall, Portland Cement Association, representing Portland Cement Association (jhall@cement.org) requests Approve as Submitted.**

**Commenter's Reason:** The reluctance by the committee to provide adequate access to potential bonfires is disappointing. NAHB and the Multi-housing counsel raised this issue themselves as a concern and yet speak against any proposal which will help to mitigate. Construction fires are occurring at 3 per week, according to an ICC report. Opponents cite education in the workforce as the solution, meanwhile construction fires are still wreaking havoc. Prevention is key, but when that fails, fire fighters must be able to access. At what point do we want to start dealing with this issue? I have heard from many that we cannot regulate arson and stupidity. Maybe so, but we can surely mitigate it.

G228-15

---

# G232-15

3314 (New), 3314.1 (New)

## Proposed Change as Submitted

**Proponent :** Ali Fattah, City of San Diego Development Services Department, representing City of San Diego (afattah@sandiego.gov)

### 2015 International Building Code

**Add new text as follows:**

#### SECTION 3314 FIRE WATCH

**3314.1 Fire watch.** Where required by the building official or fire code official, fire watch shall be provided during non-working hours for building construction that is combustibile construction exceeding 40 feet in height above the lowest adjacent grade. Qualified personnel shall be provided to serve as an on-site fire watch and shall be provided with not less than one approved means for notification of the fire department. The sole duty of personnel providing fire watch shall be to perform constant patrols and watch for the occurrence of fire.

**Reason:** Add Section 3314 to require fire watch for construction sites with unprotected combustibile construction exceeding 40 ft in height. This code change is necessary to protect adjacent properties in the event of fire when a construction site includes no construction activity. Recent fires have demonstrated the need for early notification that can only be provided by fire watch personnel since fire alarm and detection devices are normally not installed a working during framing operations. Early notification will limit the size of the fire and it's impacts on surrounding buildings. Recent fires have demonstrated the tremendous heat release from unprotected combustibile framing that impacted buildings more than 80 ft away from the construction site involved. While Section 3304 of the International Fire Code addresses precautions against fire it is mainly focused on construction activities causing a fire. The proposed code change addresses fire safety not caused by construction activities. Table 504.3 permits most Type VB construction with no sprinkler protection to be 40 ft above grade plane. Height above lowest adjacent grade has been selected to facilitate identification by inspection personnel without the need for a survey of the construction site.

**Cost Impact:** Will increase the cost of construction  
This code change is necessary due to public safety concerns for adjoining properties.

G232-15 : 3314 (New)-  
FATTAH5008

---

### Public Hearing Results

**Committee Action:**

**Disapproved**

**Committee Reason:** This belongs in the International Fire Code. The committee had concerns regarding the language "where required by the building or fire official." This could put those officials under scrutiny under various circumstances.

**Assembly Action :**

**None**

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : William Hall, Portland Cement Association, representing Portland Cement Association (jhall@cement.org) requests Approve as Submitted.**

**Commenter's Reason:** The reluctance by the committee to approve any measures that would help to mitigate the devastation caused construction fires is disappointing. Several proposals were brought to this committee and all were disapproved. Mostly they cited that these provisions belong in the fire code. While they may be best suited in the IFC, many jurisdictions do not have fire officials or even adopt the fire code. For these reasons, we need this in the IBC as well as the fire code. A fire watch would deter arson, provide early detection and possible extinguishment. This is a problem that is very real and needs a solution sooner than later.

---

**G232-15**

# G236-15

**N101 (New), N102 (New), N103 (New), N104 (New),  
N105 (New), N106 (New), N107 (New), N108 (New),  
N109 (New), N110 (New), N111 (New)**

## **Proposed Change as Submitted**

**Proponent :** William Hall (jhall@cement.org)

### **2015 International Building Code**

**Add new text as follows:**

#### **APPENDIX N** **ENHANCED BUILDING RESILIENCE**

##### **SECTION N101** **GENERAL**

**N101.1 Purpose.** The purpose of this appendix is to promote enhanced public health, safety and general welfare and to reduce public and private property losses due to hazards and natural disasters associated with fires, flooding, high winds and earthquakes.

##### **SECTION N102** **BUILDING HEIGHTS AND AREA**

**N102.1 General.** In order to limit the impact of fires on the building the building shall comply with Sections N102.1 through N102.3 and the requirements for Chapter 5.

**N102.2 Building height, number of stories and allowable area.** Building height, numbers of stories and allowable area shall be determined in accordance with N102.2.1 through N102.2.4.

**N102.2.1 Height in feet.** The maximum height, in feet, of a building shall not exceed the limits specified in Table N102 (1). Table N102 (1) shall be used in lieu of Table 504.3.

**N102.2.1.1 Towers, spires, steeples and other roof structures.** Towers, spires, steeples and other roof structures shall be permitted to meet the requirements in Section 504.3, Height in feet.

**N102.2.2 Number of stories.** The maximum number of stories of a building shall not exceed the limits specified in Table N102 (2). Table N102 (2) shall be used in lieu of Table 504.4.

**N102.2.3 Allowable area factor,  $A_t$ .** The allowable area factor,  $A_t$ , to be used in determining the allowable area of a building in accordance with Section 506.2.1, 506.2.3 or 506.2.4 shall be as specified in Table N102 (3). For application of Equations 5-1, 5-2 and 5-3, the value of NS shall be equal to the allowable area factor,  $A_t$ , from Table N102 (3). Table N102 (3) shall be used in lieu of Table 506.2.

#### **TABLE N102 (1)<sup>a, b</sup>**

#### **ALLOWABLE BUILDING HEIGHT IN FEET ABOVE GRADE PLANE**

	<b><u>TYPE OF CONSTRUCTION</u></b>
--	------------------------------------

OCCUPANCY CLASSIFICATION	Type I		Type II	Type III	Type IV	Type V
	A	B	A	A	HT	A
<u>A, B, E, F, M, S, U</u>	<u>UL</u>	<u>160</u>	<u>65</u>	<u>65</u>	<u>65</u>	<u>50</u>
<u>H-1, H2, H-3, H-5</u>	<u>UL</u>	<u>160</u>	<u>65</u>	<u>65</u>	<u>65</u>	<u>50</u>
<u>H-4</u>	<u>UL</u>	<u>160</u>	<u>65</u>	<u>65</u>	<u>65</u>	<u>50</u>
<u>I-1, Condition 1, I-3</u>	<u>UL</u>	<u>160</u>	<u>65</u>	<u>65</u>	<u>65</u>	<u>50</u>
<u>I-1, Condition 2, I-2</u>	<u>UL</u>	<u>160</u>	<u>65</u>	<u>65</u>	<u>65</u>	<u>50</u>
<u>I-4</u>	<u>UL</u>	<u>160</u>	<u>65</u>	<u>65</u>	<u>65</u>	<u>50</u>
<u>R</u>	<u>UL</u>	<u>160</u>	<u>65</u>	<u>65</u>	<u>65</u>	<u>50</u>

For SI: 1 foot = 304.8 mm.

**Note:** UL = Unlimited

a. See Chapters 4 and 5 for specific exceptions to the allowable height in this chapter.

b. See Sections 903.2 and N106.2 for the minimum thresholds for protection by an automatic sprinkler system for specific occupancies.

**TABLE N102 (2)<sup>a, b</sup>**

**ALLOWABLE NUMBER OF STORIES ABOVE GRADE PLANE**

OCCUPANCY CLASSIFICATION	TYPE OF CONSTRUCTION					
	Type I		Type II	Type III	Type IV	Type V
	A	B	A	A	HT	A
<u>A-1</u>	<u>UL</u>	<u>5</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>2</u>
<u>A-2</u>	<u>UL</u>	<u>11</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>2</u>
<u>A-3</u>	<u>UL</u>	<u>11</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>2</u>
<u>A-4</u>	<u>UL</u>	<u>11</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>2</u>
<u>A-5</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>
<u>B</u>	<u>UL</u>	<u>11</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>3</u>
<u>E</u>	<u>UL</u>	<u>5</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>1</u>
<u>F-1</u>	<u>UL</u>	<u>11</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>2</u>
<u>F-2</u>	<u>UL</u>	<u>11</u>	<u>5</u>	<u>4</u>	<u>5</u>	<u>3</u>
<u>H-1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>
<u>H-2</u>	<u>UL</u>	<u>3</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>1</u>
<u>H-3</u>	<u>UL</u>	<u>6</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>2</u>
<u>H-4</u>	<u>UL</u>	<u>7</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>3</u>
<u>H-5</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>
<u>I-1 Condition 1</u>	<u>UL</u>	<u>9</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>3</u>
<u>I-1 Condition 2</u>	<u>UL</u>	<u>9</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>3</u>

<u>I-2</u>	<u>UL</u>	<u>4</u>	<u>2</u>	<u>1</u>	<u>1</u>	<u>1</u>
<u>I-3</u>	<u>UL</u>	<u>4</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>
<u>I-4</u>	<u>UL</u>	<u>5</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>1</u>
<u>M</u>	<u>UL</u>	<u>11</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>3</u>
<u>R-1</u>	<u>UL</u>	<u>11</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>3</u>
<u>R-2</u>	<u>UL</u>	<u>11</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>3</u>
<u>R-3</u>	<u>UL</u>	<u>11</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>3</u>
<u>R-4</u>	<u>UL</u>	<u>11</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>3</u>
<u>S-1</u>	<u>UL</u>	<u>11</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>
<u>S-2</u>	<u>UL</u>	<u>11</u>	<u>5</u>	<u>4</u>	<u>5</u>	<u>4</u>
<u>U</u>	<u>UL</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>2</u>

For SI: 1 foot = 304.8 mm.

**Note:** UL = Unlimited

a. See Chapters 4 and 5 for specific exceptions to the allowable height in this chapter.

b. See Sections 903.2 and N106.2 for the minimum thresholds for protection by an automatic sprinkler system for specific occupancies.

**TABLE N102 (3)<sup>a, b</sup>**

**ALLOWABLE AREA FACTOR ( $A_t$ ) IN SQUARE FEET**

<b><u>OCCUPANCY CLASSIFICATION</u></b>	<b><u>TYPE OF CONSTRUCTION</u></b>					
	<b><u>Type I</u></b>		<b><u>Type II</u></b>	<b><u>Type III</u></b>	<b><u>Type IV</u></b>	<b><u>Type V</u></b>
	<b><u>A</u></b>	<b><u>B</u></b>	<b><u>A</u></b>	<b><u>A</u></b>	<b><u>HT</u></b>	<b><u>A</u></b>
<u>A-1</u>	<u>UL</u>	<u>UL</u>	<u>15,500</u>	<u>14,000</u>	<u>15,000</u>	<u>11,500</u>
<u>A-2</u>	<u>UL</u>	<u>UL</u>	<u>15,500</u>	<u>14,000</u>	<u>15,000</u>	<u>11,500</u>
<u>A-3</u>	<u>UL</u>	<u>UL</u>	<u>15,500</u>	<u>14,000</u>	<u>15,000</u>	<u>11,500</u>
<u>A-4</u>	<u>UL</u>	<u>UL</u>	<u>15,500</u>	<u>14,000</u>	<u>15,000</u>	<u>11,500</u>
<u>A-5</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>
<u>B</u>	<u>UL</u>	<u>UL</u>	<u>37,500</u>	<u>28,500</u>	<u>36,000</u>	<u>18,000</u>
<u>E</u>	<u>UL</u>	<u>UL</u>	<u>26,500</u>	<u>23,500</u>	<u>25,500</u>	<u>18,500</u>
<u>F-1</u>	<u>UL</u>	<u>UL</u>	<u>25,000</u>	<u>19,000</u>	<u>33,500</u>	<u>14,000</u>
<u>F-2</u>	<u>UL</u>	<u>UL</u>	<u>37,500</u>	<u>28,500</u>	<u>50,500</u>	<u>21,000</u>
<u>H-1</u>	<u>21,000</u>	<u>16,500</u>	<u>11,000</u>	<u>9,500</u>	<u>10,500</u>	<u>7,500</u>
<u>H-2<sup>d</sup></u>	<u>21,000</u>	<u>16,500</u>	<u>11,000</u>	<u>9,500</u>	<u>10,500</u>	<u>7,500</u>
<u>H-3<sup>d</sup></u>	<u>UL</u>	<u>60,000</u>	<u>26,500</u>	<u>17,500</u>	<u>25,500</u>	<u>10,000</u>
<u>H-4</u>	<u>UL</u>	<u>UL</u>	<u>37,500</u>	<u>28,500</u>	<u>36,000</u>	<u>18,000</u>

<u>H-5</u>	<u>UL</u>	<u>UL</u>	<u>37,500</u>	<u>28,500</u>	<u>36,000</u>	<u>18,000</u>
<u>I-1</u>	<u>UL</u>	<u>55,000</u>	<u>19,000</u>	<u>16,500</u>	<u>18,000</u>	<u>10,500</u>
<u>I-2</u>	<u>UL</u>	<u>UL</u>	<u>15,000</u>	<u>12,000</u>	<u>12,000</u>	<u>9,500</u>
<u>I-3</u>	<u>UL</u>	<u>UL</u>	<u>15,000</u>	<u>10,500</u>	<u>12,000</u>	<u>7,500</u>
<u>I-4</u>	<u>UL</u>	<u>60,500</u>	<u>26,500</u>	<u>23,500</u>	<u>25,500</u>	<u>18,500</u>
<u>M</u>	<u>UL</u>	<u>UL</u>	<u>21,500</u>	<u>18,500</u>	<u>20,500</u>	<u>14,000</u>
<u>R-1</u>	<u>UL</u>	<u>UL</u>	<u>24,000</u>	<u>24,000</u>	<u>20,500</u>	<u>12,000</u>
<u>R-2</u>	<u>UL</u>	<u>UL</u>	<u>24,000</u>	<u>24,000</u>	<u>20,500</u>	<u>12,000</u>
<u>R-3</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>
<u>R-4</u>	<u>UL</u>	<u>UL</u>	<u>24,000</u>	<u>24,000</u>	<u>20,500</u>	<u>12,000</u>
<u>S-1</u>	<u>UL</u>	<u>48,000</u>	<u>26,000</u>	<u>26,000</u>	<u>25,500</u>	<u>14,000</u>
<u>S-2<sup>b,c</sup></u>	<u>UL</u>	<u>79,000</u>	<u>39,000</u>	<u>39,000</u>	<u>38,500</u>	<u>21,000</u>
<u>U<sup>c</sup></u>	<u>UL</u>	<u>35,500</u>	<u>19,000</u>	<u>14,000</u>	<u>18,000</u>	<u>9,000</u>

**Note:** UL = Unlimited

For SI: 1 square foot = 0.0929 m<sup>2</sup>

a. See Chapters 4 and 5 for specific exceptions to the allowable height in this chapter.

b. See Sections 903.2 and N106.2 for the minimum thresholds for protection by an automatic sprinkler system for specific occupancies.

**N102.3 Mixed occupancy and incidental use separations.** All buildings containing mixed occupancies and incidental uses shall be provided with fire rated separations in accordance with Sections N102.3.1 and N102.3.2.

**N102.3.1 Mixed occupancy separations.** All occupancies except incidental uses in Table N102 (5) shall be separated from each other by fire barriers in accordance with Table N102 (4). Table N102 (4) shall be used in lieu of Table 508.4.

**TABLE N102 (4)**

**REQUIRED SEPARATION OF OCCUPANCIES (HOURS)<sup>d</sup>**

<u>Occupancy</u>	<u>A, E</u>	<u>B</u>	<u>I</u>	<u>R<sup>a</sup></u>	<u>F-2, S-2<sup>b</sup>, U</u>	<u>F-1, S-1, M</u>	<u>H-1</u>	<u>H-2</u>	<u>H-3, H-4, H-5</u>
<u>A, E</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>NP</u>	<u>4</u>	<u>3</u>
<u>B</u>	<u>=</u>	<u>N</u>	<u>2</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>NP</u>	<u>3</u>	<u>2</u>
<u>I</u>	<u>=</u>	<u>=</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>NP</u>	<u>NP</u>	<u>NP</u>
<u>R<sup>a</sup></u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>2</u>	<u>2<sup>c</sup></u>	<u>2</u>	<u>NP</u>	<u>NP</u>	<u>NP</u>
<u>F-2, S-2<sup>b</sup>, U</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>1</u>	<u>2</u>	<u>NP</u>	<u>4</u>	<u>3</u>
<u>F-1, S-1, M</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>2</u>	<u>NP</u>	<u>3</u>	<u>2</u>
<u>H-1</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>N</u>	<u>NP</u>	<u>NP</u>
<u>H-2</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>=</u>	<u>N</u>	<u>1</u>

H-3, H-4, H-5	=	=	=	=	=	=	=	1
---------------	---	---	---	---	---	---	---	---

N = No fire rated separation requirement.

NP = Not permitted.

a. See Section 420.

b. The required separation from areas used only for private or pleasure vehicles shall be reduced by 1 hour but to not less than 1 hour.

c. See Section 406.3.4.

d. Except as required in Section N104.7.1, N104.7.2, N104.9.1 and N104.9.2, separation is not required between occupancies of the same classification.

**N102.3.2 Separation of incidental uses.** Incidental accessory occupancies shall be separated from the remainder of the building by fire barriers with a fire resistance rating in accordance with Table N102 (5). Table N102 (5) shall be used in lieu of Table 509.

**TABLE N102 (5)  
INCIDENTAL USES**

<b><u>ROOM OR AREA</u></b>	<b><u>SEPARATION AND/OR PROTECTION</u></b>
<u>Furnace room where any piece of equipment is over 400,000 Btu per hour input</u>	<u>1 hour</u>
<u>Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower</u>	<u>1 hour</u>
<u>Refrigerant machinery rooms</u>	<u>1 hour</u>
<u>Hydrogen cut-off rooms, not classified as Group H</u>	<u>1-hour in Group B, F, M, S and U occupancies. 2-hours in Group A, E, I and R occupancies.</u>
<u>Incinerator rooms</u>	<u>2 hour and provide automatic sprinkler system</u>
<u>Paint shops, not classified as Group H, located in occupancies other than Group F</u>	<u>2 hours and provide automatic fire-extinguishing system</u>
<u>In Group E occupancies, laboratories and vocational shops not classified as Group H</u>	<u>1 hour</u>
<u>In Group I-2 occupancies, laboratories not classified as Group H</u>	<u>1 hour and provide automatic sprinkler</u>

	<u>system</u>
<u>In ambulatory care facilities, laboratories not classified as Group H</u>	<u>1 hour or provide automatic sprinkler system</u>
<u>In Group I-2 laundry rooms over 100 square feet</u>	<u>1 hour</u>
<u>Group I-3 cells and Group I-2 patient rooms equipped with padded surfaces</u>	<u>1 hour</u>
<u>In Group I-2, physical plant maintenance shops</u>	<u>1 hour</u>
<u>In ambulatory care facilities or Group I-2 occupancies waste and linen collection rooms with containers that have an aggregate volume of 10 cubic feet or greater</u>	<u>1 hour</u>
<u>In other than ambulatory care facilities and Group I- 2 occupancies, waste and linen collection rooms over 100 square feet</u>	<u>1 hour</u>
<u>In ambulatory care facilities or Group I-2 occupancies, storage rooms greater than 100 square feet</u>	<u>1 hour</u>
<u>Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons for flooded lead-acid, nickel cadmium or VRLA , or more than 1000 pounds for lithium-ion and lithium metal polymer used for facility standby power, emergency power or uninterrupted power supplies</u>	<u>1-hour in Group B, F, M, S and U occupancies. 2-hours in Group A, E, I and R occupancies.</u>

**SECTION N103**  
**TYPES OF CONSTRUCTION**

**N103.1 General.** In order to limit the impact of fires on the building the building shall comply with Section N103.2 and the requirements in Chapter 6.

**N103.2 Fire-resistance rating.** Building elements shall have a fire resistance rating not less than that specified in Table N103 (1) and exterior walls shall have a fire resistance rating not less than that specified in Table 602 . Table N103 (1) shall be used in lieu of Table 601.

**TABLE N103 (1)**  
**FIRE-RESISTANCE RATING REQUIREMENT FOR BUILDING ELEMENTS**  
**(HOURS)<sup>a</sup>**

<b><u>BUILDING ELEMENT</u></b>	<b><u>TYPE I</u></b>		<b><u>TYPE II</u></b>		<b><u>TYPE III</u></b>		<b><u>TYPE IV</u></b>	<b><u>TYPE V</u></b>	
	<b><u>A</u></b>	<b><u>B</u></b>	<b><u>A</u></b>	<b><u>B</u></b>	<b><u>A</u></b>	<b><u>B</u></b>	<b><u>HT</u></b>	<b><u>A</u></b>	<b><u>B</u></b>
<u>Primary Structural Frame<sup>g,h</sup></u>	<u>3<sup>b</sup></u>	<u>2<sup>b</sup></u>	<u>1</u>	<u>NP</u>	<u>1</u>	<u>NP</u>	<u>HT</u>	<u>1</u>	<u>NP</u>
<u>Bearing Walls</u>									
<u>Exterior<sup>f,g</sup></u>	<u>3</u>	<u>2</u>	<u>1</u>	<u>NP</u>	<u>2</u>	<u>NP</u>	<u>2</u>	<u>1</u>	<u>NP</u>
<u>Interior</u>	<u>3<sup>b</sup></u>	<u>2<sup>b</sup></u>	<u>1</u>	<u>NP</u>	<u>1</u>	<u>NP</u>	<u>1/HT</u>	<u>1</u>	<u>NP</u>

<u>Tenant Separation</u> <u>Residential spaces</u> <u>Non-residential spaces</u> <u>Mall tenant spaces</u>	<u>See Section N104.7.1 and N104.9.1</u> <u>See Section N104.7.2 and N104.9.2</u> <u>See Section 402.4.2.1</u>									
<u>Non-bearing Walls and Partitions</u> <u>Interior<sup>e</sup></u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>NP</u>	<u>0</u>	<u>NP</u>	<u>See Section 602.4.6</u>	<u>0</u>	<u>NP</u>	
<u>Floor Construction and Secondary Members<sup>h</sup></u>	<u>2</u>	<u>2</u>	<u>1</u>	<u>NP</u>	<u>1</u>	<u>NP</u>	<u>HT</u>	<u>1</u>	<u>NP</u>	
<u>Roof Construction and Secondary Members<sup>h</sup></u>	<u>1½<sup>b</sup></u>	<u>1<sup>c,d</sup></u>	<u>1<sup>c,d</sup></u>	<u>NP</u>	<u>1<sup>c,d</sup></u>	<u>NP</u>	<u>HT</u>	<u>1<sup>c,d</sup></u>	<u>NP</u>	

For SI: 1 foot = 304.8 mm.

NP = Not Permitted.

<sup>a</sup> The requirements in this table take precedence over Table 601, Fire resistance rating for building elements.

<sup>b</sup> Roof supports: Fire-resistance rating of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.

<sup>c</sup> Fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire retardant wood members shall be allowed to be used for such unprotected members.

<sup>d</sup> In all occupancies, heavy timber shall be allowed where 1-hour or less fire-resistance rating is required.

<sup>e</sup> Not less than the fire-resistance rating required by other Sections.

<sup>f</sup> Not less than the fire-resistance rating based on fire separation distance (see Table 602 ).

<sup>g</sup> Not less than the fire-resistance rating as referenced in Section 704.10.

<sup>h</sup> See Section 202 , Definitions.

## **SECTION N104** **FIRE PROTECTION FEATURES**

**N104.1 General.** In order to limit the impact of fires on the building the building shall comply with Sections N104.1 through N104.12 and the requirements for Chapter 7.

**N104.2 Buildings on the same lot.** Exception 2 for the reduced fire resistance rated opening protective for R-2 buildings in Section 705.3, Buildings on the same lot shall not be permitted.

**N104.3 Allowable area of openings.** The maximum area of unprotected and protected openings permitted in an exterior wall in any story of the building shall not exceed the percentages specified in Table N104 (1). Table N104 (1) shall be used in lieu of Table 705.8.

**N104.4 Protected openings.** The exception for opening protectives in Section 705.8.2, Protected openings shall not be permitted.

**N104.5 Vertical separation of openings.** Exception 2 that eliminates vertical separation of openings where automatic sprinklers are present in

Section 705.8.5, Vertical separation of openings shall not be permitted.

**N104.6 Parapets.** Exceptions 4 and 5 in Section 705.11, Parapet construction that eliminates exterior wall parapets shall not be permitted for Group R-2 occupancies.

**N104.7 Fire walls.** Fire walls shall meet the requirements of this section.

**N104.7.1 Materials.** Fire walls for all types of construction shall be of any approved noncombustible material permitted in NFPA 221.

**N104.7.2 Fire-resistance rating.** The fire-resistance ratings shall meet or exceed the ratings provided in Table N104 (2). Table N104 (2) shall be used in lieu of Table 706.4.

**N104.7.3** Exceptions 2 and 4 in Section 706.6, Vertical continuity that allows termination of fire walls at the underside of roof sheathing or decks shall not be permitted.

**N104.7.4** Exception 2 in Section 706.8, Openings that allows increased area of openings through fire walls where *automatic sprinkler systems* are present shall not be permitted.

**N104.8 Fire barriers.** Fire barriers shall comply with the provisions of this section.

**N104.8.1 Separation of dwelling units and sleeping units.** The separation between individual *dwelling units* and *sleeping units*, and between *dwelling units* and *sleeping units* and other spaces in the building shall be *fire barrier assemblies* or *horizontal assemblies* with a minimum *fire-resistance rating* of 2-hour.

**N104.8.2 Separation of tenant spaces.** Individual tenant spaces in a building shall be separated by *fire barrier assemblies* or *horizontal assemblies*, or both, with a minimum *fire-resistance rating* of 1-hour and the requirements of Section 508 Mixed Use and Occupancy.

**N104.8.3** Exception 1 in Section 707.6, Openings that allows openings in a fire barrier to be larger than 156 square feet where *automatic sprinkler systems* are provided shall not be permitted.

**N104.9 Fire partitions.** Fire partitions shall comply with the provisions of this section.

**N104.9.1** Fire partitions in Section 708.1 shall not be permitted for walls separating dwelling units in the same building.

**N104.9.2** Fire partitions in Section 708.1 shall not be permitted for walls separating sleeping units in the same building.

**N104.9.3** Fire partitions in Section 708.3, Fire-resistance rating shall not be permitted for corridor walls separating corridors from dwelling units or sleeping units in the same building.

**N104.9.4** Exceptions 1 and 2 in Section 708.3, Fire-resistance rating that allows a reduction in the fire resistance rating of corridors and separations between dwelling units and sleeping units shall not be permitted.

**N104.9.5** Exception 6 in Section 708.4, that allows elimination of fireblocking or draftstopping shall not be permitted.

**N104.10 Horizontal assemblies.** Horizontal assemblies shall comply with the requirements of this Section.

**N104.10.1 Separation of dwelling units and sleeping units.** The separation between individual *dwelling units* and *sleeping units*, and

between dwelling units and sleeping units and other spaces in the building shall be fire barrier assemblies or horizontal assemblies with a minimum fire-resistance rating of 2-hour.

**N104.10.2 Separation of tenant spaces.** Individual tenant spaces in a building shall be separated by fire barrier assemblies or horizontal assemblies, or both, with a minimum fire-resistance rating of 1-hour and the requirements of Section 508, Mixed Use and Occupancy.

**N104.10.3** The exception in Section 711.2.4.3 that allows a reduction of the fire-resistance rating of separations between dwelling unit and sleeping unit where automatic sprinkler systems are present shall not be permitted.

**N104.11 Enclosed elevator lobby.** Sprinkler protection or smoke partitions shall not be permitted to substitute for fire partitions in accordance with Section 708 for elevator lobby enclosures in Section 3007 Elevator lobbies where fire partitions are required.

**N104.12 Opening protectives.** The provisions of this section shall apply to opening protectives.

**N104.12.1** The Exception in Section 716.5.5 that eliminate the maximum transmitted temperature requirements shall not be permitted.

**N104.13 Concealed spaces.** The provisions of this section shall apply to concealed spaces.

**N104.13.1 Groups R-1, R-2, R-3 and R-4.** Exceptions 1 and 2 in Section 718.3.2 that eliminate draftstopping where automatic sprinkler systems are present shall not be permitted for Groups R-1, R-2 or R-4 occupancies.

**N104.13.2 Other groups.** The exception in Section 718.3.3 that eliminates draftstopping where automatic sprinkler systems are present shall not be permitted.

**TABLE N104 (1)  
MAXIMUM AREA OF EXTERIOR WALL OPENING BASED ON FIRE SEPARATION DISTANCE AND DEGREE OF OPENING PROTECTION<sup>a</sup>**

<b>Fire Separation Distance (feet)</b>	<b>Degree of Opening Protection</b>	<b>Allowable Areas<sup>b</sup></b>
<u>0 to less than 3<sup>c,d</sup></u>	<u>Unprotected (UP)</u>	<u>Not Permitted</u>
	<u>Protected (P)</u>	<u>Not Permitted</u>
<u>3 to less than 5<sup>e</sup></u>	<u>Unprotected (UP)</u>	<u>Not Permitted</u>
	<u>Protected (P)</u>	<u>15%</u>
<u>5 to less than 10<sup>g</sup></u>	<u>Unprotected (UP)</u>	<u>10%</u>
	<u>Protected (P)</u>	<u>25%</u>
<u>10 to less than 15<sup>f,g</sup></u>	<u>Unprotected (UP)</u>	<u>15%</u>
	<u>Protected (P)</u>	<u>45%</u>
	<u>Unprotected (UP)</u>	<u>25%</u>

<u>15 to less than 20<sup>f,g</sup></u>	<u>Protected (P)</u>	<u>75%</u>
-		
<u>20 to less than 25<sup>f,g</sup></u>	<u>Unprotected (UP)</u>	<u>45%</u>
	<u>Protected (P)</u>	<u>No Limit</u>
-		
<u>25 to less than 30<sup>f,g</sup></u>	<u>Unprotected (UP)</u>	<u>70%</u>
	<u>Protected (P)</u>	<u>No Limit</u>
-		
<u>30 or greater</u>	<u>Unprotected (UP)</u>	<u>No Limit</u>
	<u>Protected (P)</u>	<u>Not Required</u>

For SI: 1 foot = 304.8 mm

UP = Unprotected openings in buildings

P = Openings protected with an opening protective assembly in accordance with Section 705.8.2

<sup>a</sup> The requirements in this table take precedence over Table 705.8.

<sup>b</sup> Values indicated are the percentage of the area of the exterior wall per story.

<sup>c</sup> For the requirements for fire walls of buildings with differing heights see Section 706.6.1.

<sup>d</sup> For openings in a fire wall for buildings on the same lot, see Section 705.8.

<sup>e</sup> The maximum percentage of unprotected and protected openings shall be 25 percent for Group R-3 occupancies.

<sup>f</sup> The area of unprotected and protected openings shall not be limited for Group R-3 occupancies with a fire separation distance of 5 feet or greater.

<sup>g</sup> Includes buildings accessory to Group R-3.

**TABLE N104 (2)**  
**FIRE WALL FIRE-RESISTANCE RATINGS**

<b>GROUP</b>	<b>FIRE-RESISTANCE RATING (hours)</b>
<u>A, B, E, H-4, I, R-1, R-2, U</u>	<u>3</u>
<u>F-1, H-3<sup>a</sup>, H-5, M, S-1</u>	<u>3</u>
<u>H-1, H-2</u>	<u>4<sup>a</sup></u>
<u>F-2, S-2, R-3, R-4</u>	<u>2</u>

a. For Group H-1, H-2 or H-3 buildings, also see Sections 415.4 and 415.5.

**SECTION N105**  
**INTERIOR FINISHES**

**N105. 1 General.** In order to limit the impact of fires on the *building* the *building* shall comply with Sections N105.1 through N105.3 and the requirements for Chapter 8.

**N105.2 Interior wall and ceiling finishes.** Interior wall and ceiling finishes and conform to the requirements of this section.

**N105.2.1 Finish by occupancy.** Interior wall and ceiling finishes based on occupancy shall conform to the requirements in Table N105 (1). Table N105 (1) shall be used in lieu of Table 803.9.

**TABLE N105 (1)**  
**INTERIOR WALL AND CEILING FINISH REQUIREMENTS BY OCCUPANCY**

<b>GROUP</b>	<b>Interior exit stairways and ramps and exit passageways<sup>a</sup></b>	<b>Corridors and enclosure for exit access stairways and ramps</b>	<b>Rooms and enclosed spaces<sup>b</sup></b>
<b>A-1, A-2</b>	<u>A</u>	<u>A</u>	<u>B</u>
<b>A-3, A-4, A-5</b>	<u>A</u>	<u>A</u>	<u>C</u>
<b>B, E, M, R-1, R-4</b>	<u>A</u>	<u>B</u>	<u>C</u>
<b>F</b>	<u>B</u>	<u>C</u>	<u>C</u>
<b>H</b>	<u>A</u>	<u>A</u>	<u>B</u>
<b>I-1</b>	<u>A</u>	<u>B</u>	<u>B</u>
<b>R-2</b>	<u>B</u>	<u>B</u>	<u>C</u>
<b>R-3</b>	<u>A</u>	<u>C</u>	<u>C</u>
<b>S</b>	<u>B</u>	<u>B</u>	<u>C</u>
<b>U</b>	<u>No Restrictions</u>		

For SI: 1 inch = 25.4 mm, 1 square inch = 0.0929m<sup>2</sup>

<sup>a</sup> Class C interior finish materials shall be permitted for wainscoting or paneling of not more than 1,000 square feet of applied surface area in the grade lobby where applied directly to a noncombustible base or over furring strips applied to a noncombustible base and fire blocked as required by Section 803.11.1 .

<sup>b</sup> Requirements for rooms and enclosed spaces shall be based upon spaces enclosed by partitions. Where a fire-resistance rating is required for structural elements, the enclosing partitions shall extend from the floor to the ceiling. Partitions that do not comply with this shall be considered enclosing spaces and rooms or spaces on both sides shall be considered as one. In determining the applicable requirements for rooms and enclosed spaces, the specific occupancy thereof shall be the governing factor regardless of the group classification of the building or structure.

**N105.2.2 Set-out construction.** Exception 1 in Section 803.11.2 shall not be permitted.

**N105.3 Interior floor finishes.** The Exception in Section 804.4.2 which eliminates the requirement for minimum critical radiant flux for floor finishes and floor coverings in exit enclosures, exit passageways, and corridors where *automatic sprinkler systems* are provided shall not be permitted.

**SECTION N106**  
**FIRE PROTECTION SYSTEMS**

**N106.1 General.** In order to limit the impact of fires on the *building* the *building* shall comply with Sections N106.2 through N106.5 and the requirements for Chapter 9.

**N106.2 Automatic sprinkler protection.** An *approved automatic sprinkler system* shall be provided throughout all new buildings in accordance with Section 903.2 and Sections N106.2.1 through N106.2.7.

**N106.2.1 Group A.** An *automatic sprinkler system* shall be provided throughout buildings and portions thereof used as Group A occupancies as provided in this section.

**N106.2.1.1 Group A-1.** An *automatic sprinkler system* shall be provided for Group A-1 occupancies where one of the following conditions exists:

1. The *fire area* exceeds 6,000 square feet (557.5 m<sup>2</sup>);
2. The *fire area* has an *occupant load* of 150 or more;
3. The *fire area* is located on a floor other than a *level of exit discharge* serving such occupancies; or
4. The *fire area* contains a multitheater complex.

**N106.2.1.2 Group A-2.** An *automatic sprinkler system* shall be provided for Group A-2 occupancies where one of the following conditions exists:

1. The *fire area* exceeds 2,500 square feet (232.2 m<sup>2</sup>);
2. The *fire area* has an *occupant load* of 50 or more; or
3. The *fire area* is located on a floor other than a *level of exit discharge* serving such occupancies.

**N106.2.1.3 Group A-3.** An *automatic sprinkler system* shall be provided for Group A-3 occupancies where one of the following conditions exists:

1. The *fire area* exceeds 6,000 square feet (557.5 m<sup>2</sup>);
2. The *fire area* has an *occupant load* of 150 or more; or
3. The *fire area* is located on a floor other than a *level of exit discharge* serving such occupancies.

**N106.2.1.4 Group A-4.** An *automatic sprinkler system* shall be provided for Group A-4 occupancies where one of the following conditions exists:

1. The *fire area* exceeds 6,000 square feet (557.5 m<sup>2</sup>);
2. The *fire area* has an *occupant load* of 150 or more; or
3. The *fire area* is located on a floor other than a *level of exit discharge* serving such occupancies.

**N106.2.2 Group E.** An *automatic sprinkler system* shall be provided for Group E occupancies as provided in this section:

1. Throughout all Group E *fire areas* greater than 6,000 square feet (557.5 m<sup>2</sup>) in area.
2. Throughout every portion of educational buildings below the lowest *level of exit discharge* serving that portion of the building.

**Exception:** An *automatic sprinkler system* is not required in any area below the lowest *level of exit discharge* serving that area where every classroom throughout the building has at least one exterior *exit door* at ground level.

**N106.2.3 Group F-1.** An automatic sprinkler system shall be provided throughout all buildings containing a Group F-1 occupancy where one of the following conditions exists:

1. A Group F-1 fire area exceeds 6,000 square feet (557.5 m<sup>2</sup>);
2. A Group F-1 fire area is located more than three stories above grade plane.
3. The combined area of all Group F-1 fire areas on all floors, including any mezzanines, exceeds 12,000 square feet (1105 m<sup>2</sup>).
4. A Group F-1 occupancy used for the manufacture of upholstered furniture or mattresses exceeds 2,500 square feet (232 m<sup>2</sup>).

**N106.2.3.1 Woodworking operations.** An automatic sprinkler system shall be provided throughout all Group F-1 occupancy fire areas that contain woodworking operations in excess of 2,500 square feet (232 m<sup>2</sup>) in area which generate finely divided combustible waste or use finely divided combustible materials.

**N106.2.4 Group M.** An automatic sprinkler system shall be provided throughout buildings containing a Group M occupancy where one of the following conditions exists:

1. A Group M fire area exceeds 6,000 square feet (557.5 m<sup>2</sup>);
2. A Group M fire area is located more than three stories above grade plane.
3. The combined area of all Group M fire areas on all floors, including any mezzanines, exceeds 12,000 square feet (1105 m<sup>2</sup>).
4. A Group M occupancy used for the display and sale of upholstered furniture or mattresses exceeds 2,500 square feet (232 m<sup>2</sup>).

**N106.2.5 Group S-1.** An automatic sprinkler system shall be provided throughout all buildings containing a Group S-1 occupancy where one of the following conditions exists:

1. A Group S-1 fire area exceeds 6,000 square feet (557.5 m<sup>2</sup>);
2. A Group S-1 fire area is located more than three stories above grade plane.
3. The combined area of all Group S-1 fire areas on all floors, including any mezzanines, exceeds 12,000 square feet (1105 m<sup>2</sup>).
4. A Group S-1 fire area used for the storage of commercial trucks or buses where the fire area exceeds 2,500 square feet (232 m<sup>2</sup>).
5. A Group S-1 occupancy used for the display and sale of upholstered furniture or mattresses exceeds 2,500 square feet (2326 m<sup>2</sup>).

**N106.2.5.1 Repair garages.** An automatic sprinkler system shall be provided throughout all buildings used as repair garages in accordance with Section 406 , as shown:

1. Buildings having two or more stories above grade plane, including

- basements, with a *fire area* containing a repair garage exceeding 5000 square feet (464 m<sup>2</sup>).
2. Buildings no more than one story above *grade plane*, with a *fire area* containing a repair garage exceeding 6,000 square feet (557.5 m<sup>2</sup>).
  3. Buildings with repair garages servicing vehicles parked in basements.
  4. A Group S-1 fire area used for the repair of commercial trucks or buses where the *fire area* exceeds 2,500 square feet (232 m<sup>2</sup>).

**N106.2.5.2 Bulk storage of tires.** Buildings and structures where the area for the storage of tires exceeds 10,000 cubic feet (283 m<sup>3</sup>) shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

**N106.2.6 Group S-2 enclosed parking garages.** An *automatic sprinkler system* shall be provided throughout buildings classified as enclosed parking garages in accordance with Section 406.4 as follows:

1. Where the *fire area* of the enclosed parking garage exceeds 6,000 square feet (557.5 m<sup>2</sup>); or
2. Where the enclosed parking garage is located beneath other groups.

**Exception:** Enclosed parking garages located beneath Group R-3 occupancies.

**N106.2.6.1 Commercial parking garages.** An *automatic sprinkler system* shall be provided throughout buildings used for storage of commercial trucks or buses where the *fire area* exceeds 2,500 square feet (232 m<sup>2</sup>).

**N106.2.7 Group B.** An *automatic sprinkler system* shall be provided throughout buildings containing a Group B occupancy where one of the following conditions exists:

1. A Group B *fire area* exceeds 6,000 square feet (556 m<sup>2</sup>).
2. A Group B *fire area* is located more than three stories above *grade plane*.
3. The combined area of all Group B *fire areas* on all floors, including any mezzanines, exceeds 12,000 square feet (1,115 m<sup>2</sup>).

**N106.3 Automatic Sprinkler Systems.** Sprinkler systems shall be designed and installed in accordance with Section 903.3.1.1 NFPA 13 sprinkler systems. Sprinkler systems designed and installed in accordance with Section 903.3.1.2 NFPA 13R sprinkler systems shall not be permitted.

**N106.4 Standpipes.** Standpipes shall comply with the requirements of this Section.

**N106.4.1** The exception to Section 905.4.1, Protection that allows elimination of the fire-resistance rated enclosure for laterals where *automatic sprinkler systems* are provided shall not be permitted.

**N106.5 Fire Alarm and Detection Systems.** Fire alarms and detection systems shall comply with the provisions of this Section.

**N106.5.1 Manual pull station.** The number of manual pull stations

required in Section 907 Fire alarm and detection systems for fire alarm systems shall not be permitted to be reduced or eliminated where automatic sprinkler systems are provided.

**SECTION N107**  
**MEANS OF EGRESS**

**N107.1 General.** In order to limit the impact of fires on the *building* the *building* shall comply with Sections N107.1 through N107.7 and the requirements for Chapter 10.

**N107.2. Means of egress capacity factor.** The means of egress capacity factor used for calculating the egress capacity for stairways in Section 1005.3.1 shall be 0.3 inch (7.6 mm) per occupant with no reduction for automatic sprinkler protection in the building. The means of egress capacity factor used for calculating the egress capacity for other egress components in Section 1005.3.2 shall be 0.2 inch (5.1 mm) per occupant with no reduction for automatic sprinkler protection in the building.

**N107.2. Accessible means of egress.** Accessible means of egress shall comply with the requirements of this Section.

**N107.2.1** Exception 2 of Section 1009.3, Stairways that reduces in the clear width between handrails shall not be permitted.

**N107.2.2** Exception 5 of Section 1009.3, Stairways that eliminates of areas of refuge shall not be permitted.

**N107.2.3** Exception 2 of Section 1009.4, Elevators that eliminates requirements for elevator access from areas of refuge or horizontal exit shall not be permitted.

**N107.3 Stairways.** The exception for Section 1009.7.4 Stairways that reduces in the clear width between handrails shall not be permitted.

**N107.4 Exits and exit access.** The exit and exit access shall comply with the requirements in Tables N107 (1) and N107 (2). Table N107 (1) shall be used in lieu of Table 1006.3.2 (1). Table N107 (2) shall be used in lieu of Table 1006.3.2 (2).

**TABLE N107 (1)**  
**STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT FOR R-2 OCCUPANCIES**

<b><u>STORY</u></b>	<b><u>OCCUPANCY</u></b>	<b><u>MAXIMUM NUMBERS OF DWELLING UNITS</u></b>	<b><u>MAXIMUM EXIT ACCESS TRAVEL DISTANCE</u></b>
<u>Basement, first, or second story above grade plane</u>	<u>R-2<sup>a, b</sup></u>	<u>4 dwelling units</u>	<u>125 feet</u>
<u>Third story above grade plane and higher</u>	<u>NP</u>	<u>NA</u>	<u>NA</u>

For SI: 1 foot = 304.8 mm.

NP - Not Permitted

NA - Not Applicable

a. Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 and provided with emergency escape and rescue openings in accordance with Section 1030.

b. This table is used for R-2 occupancies consisting of *dwelling units*. For R-2 occupancies consisting of *sleeping units*, use Table N107 (2).

**TABLE N107 (2)**  
**STORIES WITH ONE EXIT OF ACCESS TO ONE EXIT FOR OTHER OCCUPANCIES**

<u>STORY</u>	<u>OCCUPANCY</u>	<u>MAXIMUM OCCUPANT LOAD PER STORY</u>	<u>MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE (feet)</u>
<u>First story above or below grade plane</u>	<u>A, B, E, F, M, U</u>	<u>49</u>	<u>75</u>
	<u>H-2, H-3</u>	<u>3</u>	<u>25</u>
	<u>H-4, H-5, I, R-1, R-2<sup>a, b</sup>, R-4</u>	<u>10</u>	<u>75</u>
	<u>S<sup>c</sup></u>	<u>29</u>	<u>75</u>
<u>Second story above grade plane</u>	<u>B, F, M, S<sup>c</sup></u>	<u>29</u>	<u>75</u>
<u>Third story above grade plane and higher</u>	<u>NP</u>	<u>NA</u>	<u>NA</u>

For SI: 1 foot = 304.8 mm.

NP - Not Permitted

NA - Not Applicable

a. Buildings classified as Group R-2 equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 and provided with *emergency escape and rescue openings* in accordance with Section 1030.

b. This table is used for R-2 occupancies consisting of *sleeping units*. For R-2 occupancies consisting of *dwelling units*, use Table 1006.3.2(1).

c. The length of *exit access travel distance* in a Group S-2 *open parking garage* shall be not more than 100 feet.

**N107.5 Exits and exit access doorways.** Exits and exit access doorways shall comply with the requirements of this Section.

**N107.5.1** Exception 1 in Section 1006.2.1, Egress based on occupant load and common path of egress travel, that reduces the number of means of egress shall not be permitted.

**N107.5.2** Exception 2 of Section 1007.1.1, Two exits or exit access doorways, that reduces the separation distance between exit doors and between exit access doors shall not be permitted.

**N107.6 Exit access travel distance.** Exit access travel distance shall comply with the requirements in Table N107 (2) and this Section. Table N107 (3) shall be used in lieu of Table 1017.2.

**TABLE N107 (3)**  
**EXIT ACCESS TRAVEL DISTANCE<sup>a</sup>**

<u>OCCUPANCY</u>	<u>DISTANCE (feet)</u>
<u>A, E, F-1, M, R, S-1</u>	<u>200</u>

<u>I-1, I-2</u>	<u>200</u>
<u>B</u>	<u>200</u>
<u>F-2, S-2, U</u>	<u>300</u>
<u>H-1</u>	<u>75</u>
<u>H-2</u>	<u>100</u>
<u>H-3</u>	<u>150</u>
<u>H-4</u>	<u>175</u>
<u>H-5</u>	<u>200</u>
<u>I-3, I-4</u>	<u>150</u>

For SI: 1 foot = 304.8 mm.

a. See the following sections for modifications to *exit access* travel distance requirements:

Section 402.8: For the distance limitation in *malls*.

Section 404.9: For the distance limitation through an *atrium space*.

Section 407.4: For the distance limitation in Group I-2.

Sections 408.6.1 and 408.8.1: For the distance limitations in Group I-3.

Section 411.4: For the distance limitation in special amusement buildings.

Section 412.7: For the distance limitation in aircraft manufacturing facilities.

Section 1006.2.2.2: For the distance limitation in refrigeration machinery rooms.

Section 1006.2.2.3: For the distance limitation in refrigerated rooms and spaces.

Section 1006.3.2: For buildings with one *exit*.

Section 1017.2.2: For increased distance limitation in Groups F-1 and S-1.

Section 1029.7: For increased limitation in assembly seating.

Section 1028.7: For increased limitation for assembly open-air seating.

Section 3103.4: For temporary structures.

Section 3104.9: For pedestrian walkways.

**N107.6.1** Distance limitations through atrium spaces shall conform to Section 404.

**N107.6.2** Exit access in buildings with one exit shall conform to Section 1006.3.2.

**N107.7 Corridors.** Corridors shall comply with the requirements of this section.

**N107.7.1** The fire-resistance rating of corridor walls shall be at least 1-hour.

**N107.7.2** Exception 2 in Section 1020.4, Dead ends that increases the length of dead-end corridors shall not be permitted.

## **SECTION N108** **EXTERIOR WALLS**

**N108. 1 General.** Exterior wall coverings shall comply with Sections N108.2 through N108.4 and the requirements for exterior walls in Chapter 14 and plastics in Chapter 26.

**N108.2 Exterior wall covering limitations for reduced damage from fire.** Exterior wall coverings shall comply with N108.2.1 and N108.2.2 to reduce damage from fire exposure. Exception. These criteria shall not

apply where Sections 1406.2.1 through 1406.2.3 are satisfied.

**N108.2.1 Vinyl siding and Exterior insulation and finish systems (EIFS).** Vinyl siding and Exterior insulation and finish systems (EIFS) shall only be permitted to be installed on exterior walls of buildings with a minimum fire separation distance of 30 feet.

**N108.2.2 Fire Separation 5 Feet or Less.** Combustible exterior wall coverings are not permitted on exterior walls having a fire separation distance of 5 feet (1524 mm) or less.

**N108.3 Exterior wall covering limitations for reduced damage from hail.** Vinyl siding and Exterior insulation and finish systems (EIFS) shall comply with sections N108.3.1 and N108.3.2.

**N108.3.1 Hail Exposure regions.** Hail exposure regions in Figure N108 (1) shall be as follows:

1. **Moderate** - Three but less than six hail reports per 100 square miles.
2. **Severe** - Six or more hail reports per 100 square miles.

**N108.3.2 Exterior wall coverings subject to hail exposure.** Wall coverings used in regions where hail exposure is Moderate or Severe, as determined in accordance with Section N108.3.1 and Figure N108 (1), shall be tested, classified, and labeled in accordance with UL 2218 or FM 4473.

**N108.4 Exterior wall covering limitations for reduced damage from wind.** Vinyl siding and Exterior insulation and finish systems (EIFS) shall only be permitted to be installed on exterior walls of buildings located as follows:

1. Regardless of the Risk Category, in areas where  $V_{ult}$  as determined in accordance with Figure 1609A does not exceed 115 miles per hour (45 m/s) and the *building height* is less than or equal to 40 feet (12 192 mm) in Exposure C.
2. Regardless of the Risk Category, in areas where  $V_{ult}$  as determined in accordance with Figure 1609A exceeds 115 miles per hour (45 m/s) or the *building height* is equal to 40 feet (12192 mm) or greater in Exposure C, vinyl siding or EIFS shall be permitted on exterior walls when tested in accordance with ASTM D5206 or E330 using wind speed not less than the wind speed applicable for the building location determined in accordance with N110.4.
3. Regardless of the Risk Category, in areas where the wind speed is less than 250 mph (98 m/s) according to Figure 304.2(1) of ICC/NSSA 500 or the *building height* is equal to 40 feet (12192 mm) or greater in Exposure C, vinyl siding or EIFS shall be permitted on exterior walls when tested in accordance with ASTM D5206 or E330 using wind speed not less than the wind speed applicable for the building location determined in accordance with N110.4.



**FIGURE N108 (1)**  
**AVERAGE FREQUENCY OF HAIL (1-INCH OR LARGER) REPORTS PER**  
**100 SQUARE MILES**

## **SECTION N109** **ROOF ASSEMBLIES**

**N109.1 General.** Roof coverings shall also comply with Sections N109.2 through N109.4 and the requirements for Chapter 15.

**N109.2 Non-classified roofs.** Non-classified roof coverings in accordance with Section 1505.5 Non-classified roofing shall not be permitted on *buildings*.

**N109.3 Roofs in Warm and Dry Climates.** Roofs in climate zones 1, 2, 3, 4, 5B (dry), and 6B (dry) of the *International Energy Conservation Code* shall have a Class A roof covering or Class A roof assembly according to ASTM E108 or UL 790. For roof coverings where the profile allows a space between the roof covering and roof decking, the space at the eave ends shall be firestopped to preclude entry of flames or embers.

**N109.4 Roof coverings subject to hail exposure.** Roof coverings used in regions where hail exposure is Moderate or Severe, as determined in accordance with Section N109.4.1 and Figure N108 (1), shall be tested, classified, and labeled in accordance with UL 2218 or FM 4473.

**N109.4.1** Hail Exposure regions in Figure N108 (1) shall be as follows:

1. **Moderate** - Three but less than six hail reports per 100 square miles.
2. **Severe** - Six or more hail reports per 100 square miles.

**N109.5 Roof drain protection.** All roof drains on low-slope roofs located in severe exposure areas in Figure 1904.2 shall have heating strips (heat trace) installed around them to prevent blockage of the drains by ice or ice dams.

## **SECTION N110** **STRUCTURAL**

**N110.1 General.** In order to limit the impact of loads from snow, ice, wind, floods and earthquakes on the *building* the *building* shall comply with Sections N110.1 through N110.9 and the requirements for Chapters 4 and 16.

**N110.2 Importance factors by risk category.** The minimum design loads for buildings shall be based on the Importance Factors in Table N110 (1).

**TABLE N110 (1)**  
**IMPORTANCE FACTORS BY RISK CATEGORY**

<b><u>Risk Category</u></b> <b><u>From Table 1604.5</u></b> <b><u>in the IBC</u></b>	<b><u>Snow</u></b> <b><u>Importance</u></b> <b><u>Factor, <math>I_s</math></u></b>	<b><u>Ice</u></b> <b><u>Importance</u></b> <b><u>Factor, <math>I_i</math></u></b>	<b><u>Wind</u></b> <b><u>Importance</u></b> <b><u>Factor, <math>I_w</math></u></b>	<b><u>Seismic</u></b> <b><u>Importance</u></b> <b><u>Factor, <math>I_e</math></u></b>	
				<b><u>0.2 spectral</u></b> <b><u>response</u></b>	
					<b><u>&gt; 0.40g</u></b>
<b><u>I</u></b>	<b><u>0.95</u></b>	<b><u>0.95</u></b>	<b><u>1.20</u></b>	<b><u>1.00</u></b>	<b><u>1.20</u></b>
<b><u>II</u></b>	<b><u>1.20</u></b>	<b><u>1.20</u></b>	<b><u>1.20</u></b>	<b><u>1.00</u></b>	<b><u>1.20</u></b>
<b><u>III</u></b>	<b><u>1.25</u></b>	<b><u>1.40</u></b>	<b><u>1.15</u></b>	<b><u>1.25</u></b>	<b><u>1.40</u></b>

IV	1.30	1.40	1.15	1.50	1.65
----	------	------	------	------	------

**N110.3 Snowloads.** In order to limit the impact of snow on the *building* the Snow Load Importance Factor,  $I_s$ , shall be determined from Table N110 (1).

**N110.4 Wind loads.** In order to limit the impact of wind on the *building* the Wind Load Importance Factor,  $I_w$ , shall be determined from Table N110 (1). Component and cladding loads shall be determined for the design wind speed determined in accordance with Section 1609.1.1 Determination of wind loads and defined assuming terrain Exposure C regardless of the actual local exposure and the Wind Load Importance Factor,  $I_w$ , determined from Table N110 (1).

**N110.4.1 Special wind region requirements.** The following items are required in Wind Zones 3 or 4 determined in accordance with Section 1609.1.2.2;

1. Structural roof sheathing panels shall be rated for maximum deflection between supports of L/160 when subjected to a uniform live load of 100 pounds per square foot.
2. Connections and fasteners of structural roof sheathing panels shall be designed to provide panel resistance uplift with a minimum factor of safety of 2.0 based on a design wind pressure using terrain Exposure C.

**N110.5 Flood loads.** Buildings designed and constructed in flood hazard areas defined in Section 1612.2 Definitions shall comply with the following.

**N110.5.1 Floors above base flood elevation.** Floors required by ASCE 24 to be built above base flood elevations shall have the floor and their lowest horizontal supporting member not less than the higher of the following:

- (a) Design flood elevation,
- (b) Base flood elevation plus 3 feet, or
- (c) advisory base flood elevation plus 3 feet, or
- (d) 500-year flood, if known

**N110.5.2 Flood protective works.** Buildings designed and constructed in accordance with ASCE 24 shall not consider levees or floodwalls for providing flood protection during the design flood.

**N110.5.3 Protection of mechanical, plumbing and electrical systems.** Mechanical, plumbing and electrical systems, including plumbing fixtures and utility connections, shall comply with the following:

1. All components shall be elevated above the design flood elevation.

**Exception:** Electrical systems, equipment and components, and heating, ventilating, air conditioning, and plumbing appliances, plumbing fixtures, duct systems and other service equipment shall be permitted to be located below the design flood elevation provided that all elements are designed and installed to prevent water from entering or accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy. Electrical wiring systems shall be

permitted to be located below the design flood elevation provided they conform to the provisions of NFPA70.

2. Where break away wall systems are required, vertical runs extending below the lowest habitable floor shall be protected by columns or other structural elements that are not part of any break away wall system and shall not be connected to any break away elements.

**N110.6 Earthquake loads.** In order to limit the impact of seismic events on the *building* the Seismic Load Importance Factor,  $I_e$ , shall be determined from Table N110 (1). The building shall also comply with Sections N110.6.1 and N110.6.2.

**N110.6.1 Near fault sites.** Buildings are not permitted on sites where the ground surface has the known potential to rupture at the structure due to ground motion. Determination shall be based on fault zones (areas subject to severe ground dislocations) that have been established and mapped.

**N110.6.2 Seismic Design Categories C, D, E and F.** Where the *seismic design category* is determined to be C, D, E or F in accordance with Section 1613.3.5, the building shall be designed by a *registered design professional*.

**N110.7 Atmospheric ice loads.** In order to limit the impact of atmospheric ice load events on the *building* the ice importance factor,  $I_i$ , shall be determined from Table N110 (1).

**N110.8 Storm Shelters.** Buildings and structures shall be provided with storm shelters in accordance with Section 423 and where required by Section N110.8.1 and N110.8.2.

**N110.8.1 Other occupancies.** Storm shelters shall be provided for buildings of Group A-3 (community halls, schools and libraries), B (civic administration), Group E (day care facilities, accessory to places of religious worship, and occupancies less than 50), I-1, I-2, I-3, M, and R occupants located in:

1. Hurricane prone regions
2. Tornado areas where the shelter design wind speed for tornadoes of Figure 304.2(1) of ICC/NSSA 500 is 250 mph or greater.

**Exceptions:**

1.
  - 1.1. Buildings meeting the requirements for shelter design in ICC/NSSA 500.
  - 1.2. Where the occupants of the proposed building have an approved storm shelters within 1/4-mile of travel distance of the proposed building available for use and the storm shelter has adequate size to accommodate the added occupant load of the proposed building.
  - 1.3. Where the code official determines the building size, location or occupant load does not warrant a shelter.

**N110.8.2 Combined hurricane and tornado shelters.** Where combined hurricane and tornado shelters are provided, the shelter shall comply with the more stringent requirements of ICC/NSSA-500 for both types of shelters.

**N110.9 Wildland.** In order to limit the impact of wildland fires on the building the building shall comply with Sections N110.9.1 through N110.9.3 N110.9.1 Wildland Fires. The provisions of the *International Wildland-Urban Interface Code* shall apply to the construction, alteration, movement, repair, maintenance and use of any building, structure or premises within the wildland interface areas in this jurisdiction.

**N110.9.2 Exterior walls.** Exterior wall requirements shall be based on the Fire Hazard Severity specified in Table 502.1 in the *International Wildland-Urban Interface Code*.

**N110.9.3 Smoke Detection.** An automatic smoke detection system in accordance with Section 907 shall be installed throughout buildings located within areas designated by the jurisdiction as being a wild land urban interface area.

**SECTION N111**  
**REFERENCED STANDARDS**

<b><u>ASCE/SEI</u></b>	<u>American Society of Civil Engineers Structural Engineers Institute 1801 Alexander Bell Drive Reston, VA 20191-4400</u>	
<b><u>Standard reference number</u></b>	<b><u>Title</u></b>	<b><u>Referenced in code section number</u></b>
<u>24-13</u>	<u>Flood Resistant Design and Construction</u>	<u>N110.5.1 N110.5.2</u>
<b><u>ASTM</u></b>	<u>ASTM International 100 Barr Harbor Drive West Conshohocken, PA 19428-2959</u>	
<b><u>Standard reference number</u></b>	<b><u>Title</u></b>	<b><u>Referenced in code section number</u></b>
<u>E108-11</u>	<u>Standard Test Methods for Fire Tests of Roof Coverings</u>	<u>N109.3</u>
<u>E330-14</u>	<u>Test Methods for Structural Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference</u>	<u>N108.4</u>
<u>D5206-13</u>	<u>Standard Test Method for Windload Resistance of Rigid Plastic Siding</u>	<u>N108.4</u>
<b><u>FM</u></b>	<u>Factory Mutual Global Research Standards Laboratories Department 1301 Atwood Avenue, P.O. Box 7500 Johnston, RI 02919</u>	
<b><u>Standard reference number</u></b>	<b><u>Title</u></b>	<b><u>Referenced in code section number</u></b>

<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>FM 4473-11</u>	<u>Specification Test Standard for Impact Resistance Testing of Rigid Roof Materials by Impacting With Freezer Ice Balls</u>	<u>N108.3.2</u> <u>N109.4</u>
<b>ICC</b>	<u>International Code Council, Inc.</u> <u>500 New Jersey Ave, NW</u> <u>6th Floor</u> <u>Washington, DC 20001</u>	
<u>IECC—15</u>	<u>International Energy Conservation Code®</u>	<u>N109.3</u>
<u>IWUIC—15</u>	<u>International Wildland-Urban Interface Code®</u>	<u>N110.9.1</u> <u>N110.9.2</u>
<u>ICC 500-14</u>	<u>ICC/NSSA Standard on the Design and Construction of Storm Shelters</u>	<u>N110.8.1</u> <u>N110.8.1.2</u>
<b>NFPA</b>	<u>National Fire Protection Association</u> <u>1 Batterymarch Park</u> <u>Quincy, MA 02269</u>	
<u>NFPA 13-13</u>	<u>Standard for the Installation of Sprinkler Systems</u>	<u>N106.3</u>
<u>NFPA 13R-13</u>	<u>Standard for the Installation of Sprinkler Systems in Residential Occupancies Up to and Including Four Stories in Height</u>	<u>N106.3</u>
<b>UL</b>	<u>Underwriters Laboratories Inc.</u> <u>333 Pfingsten Road</u> <u>Northbrook, IL 60062</u>	
<u>UL 790-04</u>	<u>Standard Test Methods for Fire Tests of Roof Coverings— with revisions through October 2008</u>	<u>N109.3</u>
<u>UL 2218-10</u>	<u>Impact Resistance of Prepared Roof Covering Materials</u>	<u>N108.3.2</u> <u>N109.4</u>

**Reason:** This reason statement has the following four segments to explain the reasons for this change: (A) Background on these criteria with regard to the ICC code development process; (B) Substantiation for sustainability through enhanced resilience; (C) Additional life safety benefits for occupants through enhanced

resilience and (D) General background information identifying the need for enhanced property protection and functional resilience to strengthen the built environment.

**(A)**

Similar criteria were submitted as proposed mandatory provisions of the 2012 edition of the International Green Construction Code. Committee members identified these types of criteria as having merit but recommended that they be proposed to the International Building Code. Proposals were submitted as mandatory requirements within the body of the code and also as an optional appendix. Both approaches were disapproved for the IBC as not being minimum requirements for general construction.

It is noteworthy that state and local jurisdictions are considering criteria for enhanced resilience in their general building code, superseding the criteria of the I-Codes. For example the State of Georgia, under a U.S. Department of Housing and Urban Development grant and adopted an optional appendix to their statewide code to permit jurisdictions to adopt and enforce criteria for enhanced resiliency. Many jurisdictions like Lake County Illinois have adopted flood criteria that is more stringent than the criteria in the I-Codes. As jurisdictions are adopting more stringent criteria for all buildings, criteria for enhanced resilience should be a prerequisite for all green or sustainable buildings to provide acceptable levels of longevity, durability, robustness, improved life safety, ease of adaptability for reuse as well as resistance to disasters. Such provisions will reduce time and resources for disaster response and recovery as well as helping to assure community continuity by better maintaining revenues and places for employment and to house employees.

The sustainability benefits of enhanced resiliency in building design and construction are not limited to the general continuity and welfare of communities but also have a significant role to minimize negative environmental impacts should disasters occur. The U.S. Army Corps of Engineers reported that 44 million cubic yard of building materials and contents were disposed of in land following Hurricane Katrina. Most of the materials were not salvageable because they were contaminated. This is the equivalent of laying 21 cubic foot refrigerators end to end twice around the equator. Provisions for enhanced resiliency such as elevating habitable spaces above a specific natural flood elevation can significantly minimize the amount of materials disposed because they are damaged and contaminated. Reports after the tornado strike in Moore, Oklahoma advised that is placed on a single debris pile the pile of debris would have been more than a mile high. More resilient construction would clearly minimize the amount of damage, may not from a direct path of the funnel of an EF5 tornado, but at least for the lower perimeter wind forces and flying debris.

**(B)**

The following are reports of dollar loss to property from wind, cold weather and fire disasters.

- The American Society of Civil Engineers reported in *Normalized Hurricane Damage in the United States, 1900 - 2005*, National Hazard Review, ASCE 2008, that property damage from hurricanes was 81 billion dollars in 2005.
- The National Weather Service reports that U.S. property damage due to winter storms and ice exceeded 1.5 billion dollars in 2009.
- *Fire Losses in the United States During 2009* by the National Fire Protection Association, August 2010 shows that property loss due to structure fires in buildings other than one and two family dwellings was approximately 4.5 billion dollars.

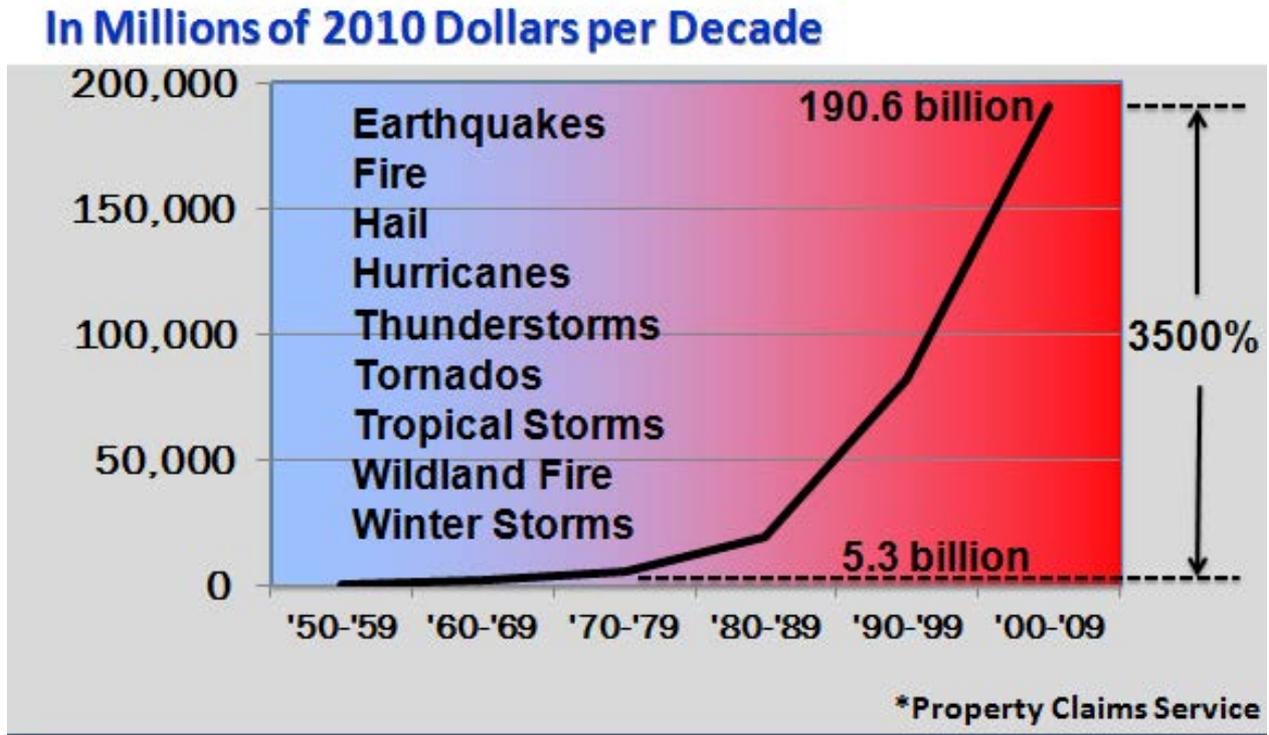
Increasing the stringency of the design criteria of buildings for hazards such as wind, snow or fire results in more robust buildings. Such requirements reduce the amount of energy and resources required for repair, removal, disposal and replacement of building components and systems damaged from these disasters. A further benefit is a reduction in the amount of damaged building materials and content entering landfills.

While there has not been a proportionate increase in either frequency of events (which have remained relatively constant) construction put in place (which has maintained an upward trend of trend of 10% per decade or 40% over last four

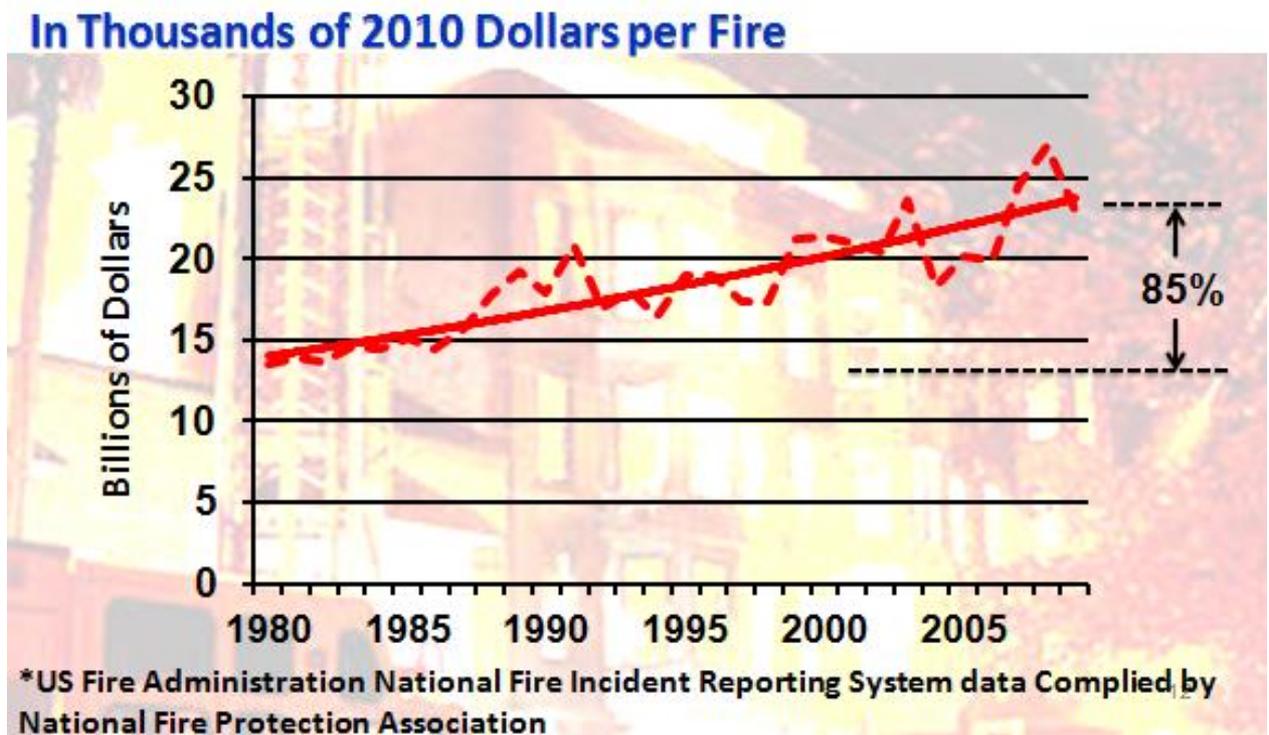
decades) or demographics (population growth even in the fastest growing regions has 10% per decade or 40% over the same time period) property losses due to natural disasters, adjusted to 2010 dollars, have increased by over a staggering 3500%, see Figure 1. Losses from fire, adjusted to 2010 dollars, have increased by 85% per fire, see Figure 2.

**Figure 1: Increase in Property Losses Due to Natural Disasters, excluding Flood<sup>1</sup>**

<sup>1</sup>Flood losses not collected by private insurance companies



**Figure 1: Increase in Fire Losses Per Structure Fire<sup>1</sup>**



These specific requirements help reduce commonly occurring property losses.

**Flooding:**



**Hurricanes:**



Source: U.S. Navy photo by Chief Petty Officer Johnny Bivera  
**Katrina Aftermath**

**Seismic Events:**



Source: Federal Emergency Management Agency  
**Earthquake damage to personal property.**

**Snow Loads:**



Source: Institute for Business and Home Safety  
**In many instances roof collapse due to snow loads not only results in damage to roof and building**

contents below but may also remove lateral support, allowing walls to collapse.

**Wind:**



Source: Federal Emergency Management Agency, photograph taken by Lara Shane of FEMA  
**Homes and businesses that are not designed and constructed to provide an appropriate level of resilience are at greater risk in high wind exposures.**

**Tornadoes:**



Source: Oklahoma Department of Emergency Management  
**Storm shelters and safe rooms really work.**

**Structure Fires:**



Source: Northeast Fire Safety Construction Advisory Council

**Fire containment achieved with compartmentation minimizes damage due to fire, smoke and water used for suppression.**

### **External Fire Exposure:**



Source: Brick Institute of America Region 9

**Siding on a building nearly 100 feet away from a burning building needs to be replaced.**

### **Wildland Fires and Conflagrations After Disasters:**



Source: Federal Emergency Management Agency

**Topography, vegetative fuels and drought contribute to the potential for devastating wildfires.**

**Wind Damage - Attachment:**



Source: Portland Cement Association, photo by Steve Skalko

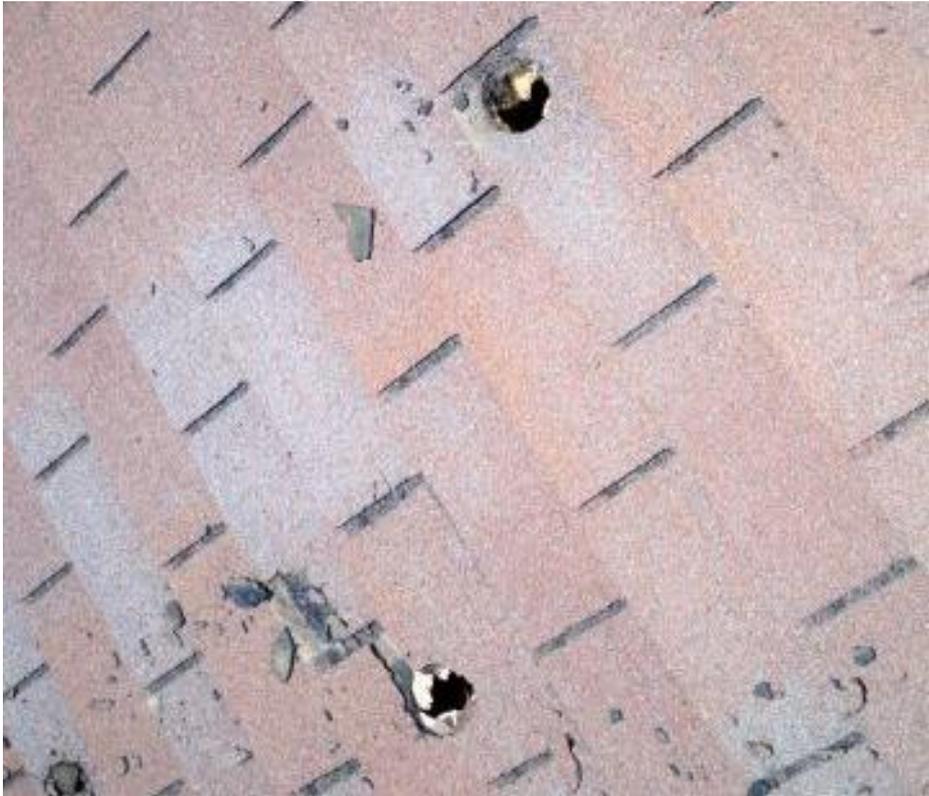
**Damage to siding and sheathing as a result of high winds.**

**Wind Damage - System Failure:**



Source: Institute for Business & Home Safety  
**Wind damage to lightweight exterior wall covering.**

**Hail Impact - Horizontal Surfaces:**



Source: National Oceanic and Atmospheric Administration, National Weather Service  
**Roof shingles need to be removed, disposed and replaced due to hail damage.**

**Hail Impact - Vertical Surfaces:**



Source: National Oceanic and Atmospheric Administration, National Weather Service  
**Siding needs to be removed, disposed and replaced due to hail damage.**

**Rodentproofing:**



Source: Image provided with permission from Alternative Building Services, [www.altbuildingservices.com](http://www.altbuildingservices.com)  
**Building elements in need of repair due to rodent damage. Undetected damage can compromise the integrity of the building thermal envelope and moisture protection.**

Further benefits are enhanced security and occupant comfort; potentially less demand on community resources required for emergency response; and allowing facilities to be more readily adapted for re-use if there is a change of occupancy in the future.

**(C)**

The 1987 landmark report "America Burning" (Report of the National Commission on Fire Prevention and Control) recommended the increased use of automatic sprinkler systems, and the sprinkler trade-off concept as a financial incentive to encourage the installation of sprinklers in buildings to enhance life safety to the benefit of the building occupants. Automatic fire sprinklers designed for the intended fire load that are installed correctly and maintained to operate with adequate water supply are undoubtedly have contributed significantly to reduced loss of life and reduced property damage. However, for the last two decades hundreds of sprinkler trade-offs have been incorporated into model building codes such as the International Building Code that drastically reduce built-in fire protection when sprinklers are present. The result is considerably less fire safety layers in a building and significant reliance only on the sprinkler system for occupant safety.

There is increasing concern about the reduction or complete elimination of fire rated assemblies based on reliance of automatic sprinklers. To address this concern this proposal removes many of the sprinkler trade-offs in order to encourage increase fire safety and resilience of buildings through a combination of fire resistant construction and sprinklers protection.

Too, natural disasters such earthquakes, hurricanes and floods disrupt water supplies and power to buildings adversely affecting the life safety systems such as sprinkler protection and fire alarm systems. These events also damage gas mains serving buildings resulting in gas leaks and increased fire incidents. Without the fire safety layers of sprinklers and fire alarms, the building will not be able to withstand as big of a fire and will fail sooner, putting occupants and especially firefighters at great risk. This proposal encourages enhanced resilience to these natural disasters to reduce fire safety risk to the occupants.

It has been widely accepted that when buildings are constructed with an appropriate combination of active and passive fire protection using the concept of fire safety layering, they are more resilient and better able to ensure continuity of operations, improved sustainability, increased durability, increased adaptability for reuse, increased resistance to disasters, and improved life safety for occupants and firefighters.

#### (D)

Minimum building requirements whether through energy codes, plumbing codes, mechanical codes, zoning codes, or basic building codes, do not encourage truly sustainable buildings. The proposal attempts to integrate the concepts of the Whole Building Design Guide (WBDG) into the International Building Code as a non-mandatory Appendix. This allows adopting jurisdictions the option of incorporating code requirements into the building code to improve the resilience of the built environment without the need to add another code to the community requirements.

The WBDG, developed in partnership between the National Institute of Building Sciences (NIBS) and the Sustainable Building Industries Council (SBIC), has as its key concepts: accessible, aesthetics, costeffective, functional/operational, historic preservation, productive, secure/safe, and sustainable.

There are numerous references about the economic, societal, and environmental benefits that result when enhanced functional resilience for resource minimization are integrated into building design and construction. Six examples demonstrating the importance and supporting the concepts are:

1. ***Natural Hazard Mitigation Saves: An Independent Study to Assess the Future Savings from Mitigation Activities*** - National Institute of Building Sciences Multi-Hazard Mitigation Council - 2005

One of the findings in this report is "The analysis of the statistically representative sample of FEMA grants awarded during the study period indicates that a dollar spent on disaster mitigation saves society an average of \$4." The programs studied often addressed issues and strategies other than enhanced disaster resistance of buildings and other structures. However, more disaster-resistant buildings enhance life safety; reduce costs and environmental impacts associated with repair, removal, disposal, and replacement; and reduce the time and resources required for community

recovery.

2. **Five Years Later - Are we better prepared?** - Institute for Business and Home Safety - 2010

This IBHS report states: "When Hurricane Katrina made landfall on Aug. 29, 2005, it caused an estimated \$41.1 billion in insured losses across six states, and took an incalculable economic and social toll on many communities. Five years later, the recovery continues and some residents in the most severely affected states of Alabama, Louisiana and Mississippi are still struggling. There is no question that no one wants a repeat performance of this devastating event that left at least 1,300 people dead. Yet, the steps taken to improve the quality of the building stock, whether through rebuilding or new construction, call into question the commitment of some key stakeholders to ensuring that past mistakes are not repeated." This report indicates that there is a need to implement provisions to make buildings more disaster-resistant. Clearly this suggests that functional resilience should at least be integrated into the design and construction of sustainable buildings.

3. **National Weather Service Office of Climate, Water and Weather Services** - National Oceanic and Atmospheric Administration (NOAA) - 2010

Data provided on the NOAA website [[www.weather.gov/os/hazstats.shtml](http://www.weather.gov/os/hazstats.shtml)] indicates that the average annual direct property loss due to natural disasters in the United States exceeds of \$35,000,000,000. This does not include indirect costs associated with loss of residences, business closures, and resources expended for emergency response and management. These direct property losses also do not reflect the direct environmental impact due to reconstruction after the disasters. Functional resilience will help alleviate the environmental impact and minimize both direct and indirect losses from natural disasters.

4. **Global Climate Change Impacts in the United States** - U.S. Global Change Research Program (USGCRP) - 2009

The USGCRP includes the departments of Agriculture, Commerce, Defense, Energy, Health and Human Services, Interior, State and Transportation; National Aeronautic and Space Administration; Environmental Protection Agency, USA International Development, National Science Foundation and Smithsonian Institution

The report identifies that: "Climate changes are underway in the United States and are projected to grow. Climate-related changes are already observed in the United States and its coastal waters. These include increases in heavy downpours, rising temperature and sea level, rapidly retreating glaciers, thawing permafrost, lengthening growing seasons, lengthening ice-free seasons in the ocean and on lakes and rivers, earlier snowmelt, and alterations in river flows. These changes are projected to grow." The report further identifies that the: "Threats to human health will increase. Health impacts of climate change are related to heat stress, waterborne diseases, poor air quality, extreme weather events, and diseases transmitted by insects and rodents. Robust public health infrastructure can reduce the potential for negative impacts." Key messages in the report on societal impacts include:

- - "City residents and city infrastructure have unique vulnerabilities to climate change."
  - "Climate change affects communities through changes in climate-sensitive resources that occur both locally and at great distances."
  - "Insurance is one of the industries particularly vulnerable to increasing extreme weather events such as severe storms, but it can also help society manage the risks."

Sustainable building design and construction cannot be about protecting the natural environment without consideration of the projected growth in severe

weather. Minimum codes primarily based on past natural events are not appropriate for truly sustainable buildings. Buildings expected to have long term positive impacts on the environment must be protected from these extreme changes in the natural environment. The provisions for improved property protections are necessary to reduce the amount of energy and resources associated with repair, removal, disposal, and replacement due to routine maintenance and damage from disasters. Further such provisions reduce the time and resources required for community disaster recovery.

5. ***Sustainable Stewardship - Historic preservation plays an essential role in fighting climate change*** - Traditional Building, National Trust for Historic Preservation - 2008

In the article Richard Moe summarizes the results of a study by the Brookings Institution which projects that by 2030 we will have demolished and replaced 82 billion square feet of our current building stock, or nearly 1/3 of our existing buildings, largely because the vast majority of them weren't designed and built to last any longer. Durability, as a component of functional resilience, can reduce these losses.

6. ***Opportunities for Integrating Disaster Mitigation and Energy Retrofit Programs*** - Senate Environment and Public Works Committee Room, Dirksen Senate Office Building, Washington, D.C. - 2010

During this panel discussion a representative of the National Conference of State Historic Preservation Officers noted that more robust buildings erected prior to 1950 tend to be more adaptable for reuse and renovation. Prior to the mid-1950s most local jurisdictions developed their own building code requirements that uniquely addressed the community's needs, issues and concerns. Pre-1950 building codes typically resulted in more durable and robust construction that lasts longer. The total environmental impact of insulation, high efficiency equipment, components, and appliances, lowflow plumbing fixtures, and other building materials and contents are relatively insignificant when rendered irreparable or contaminated and must be disposed of in landfills after disasters. The US Army Corps of Engineers estimated that after Hurricane Katrina nearly 1.2 billion cubic feet of building materials and contents ended up in landfills. This is analogous to stacking enough refrigerators a fifth of the way to the moon or placing them end to end around the equator of the Earth twice.

**Cost Impact:** Will increase the cost of construction

Will increase the cost of construction in some areas of the U.S. while reducing the cost of construction in other areas.

To evaluate the cost impact for every occupancy and use, type of construction and building configuration is excessively burdensome for any proposed code change. In an effort to satisfy the request in the code development process that construction type determined by the proponent to be influenced by cost was evaluated to the most significant cost potential impacts relative to this proposal, rectangular 4-story Type V multi-family dwellings. The independent third party studies indicate that the cost differential ranges between minus 3% to plus 3% for the most significant cost impact associated with the code change proposal which typically shifted the design from Type V construction to other Types of construction. To accurately evaluate the relative construction cost it was determined that a multi-family residential structure should be schematically designed meeting all of the requirements of the International Building Code. Once designed, the buildings were reviewed for code compliance, and cost estimates would be prepared. The study was conducted by:

Architect & Engineer: *Haas Architects Engineers*<sup>1</sup>

Code Official: *Tim E. Knisely*<sup>2</sup>

Cost Estimation : *Poole Anderson Construction*<sup>3</sup>

The building model chosen for the project was a 4 story multi-family residential structure encompassing approximately 25,000 gross square feet of building area per

floor. The cost comparisons are based on the proposed target building assembled using a typical mix of one and two bedroom dwelling units.

The following construction types and alternates were included in the evaluation:

Conventional Type V framing with Type V floor system

*Alternate:* Conventional Type VA framing with Type VA floor system

Non-combustible framing with fire-rated non-combustible floors (concrete on steel deck)

Fire-rated load bearing non-combustible construction with fire rated non-combustible floor system (block and plank)

The cost estimate for each building model included the complete fit out of each building with the exception of movable appliances and furniture. For more details on the specific criteria visit: [www.psfsac.org](http://www.psfsac.org).

**Analysis:** A review of the standards proposed for inclusion in the code, ASTM D 5206-13, FM 4473-11 and UL 2218-10, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 2, 2014. All other standards proposed for inclusion into the code are already in Chapter 35 of the 2015 IBC.

G236-15 : Appendix N  
(New)-Hall 5883

---

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

**Committee Reason:** There are many issues with this proposal, whether it is in an appendix or not. There are items that are missed and sentences that are incomplete. One table is missing Group I-2, I-3 and I-4 occupancies. This is a public policy question. It doesn't make sense to have a resilient building that may survive, while the surrounding infrastructure, such as roadways that lead to it, may not, leaving it on an island. It seems that what we really have is an infrastructure problem, which is not a building code issue.

**Assembly Action :**

**None**

---

## **Individual Consideration Agenda**

### *Public Comment 1:*

**Proponent : William Hall, Portland Cement Association, representing Portland Cement Association ([jhall@cement.org](mailto:jhall@cement.org)) requests Approve as Submitted.**

**Commenter's Reason:** As jurisdictions begin to change out minimum code provisions for more resilient approaches, they will look to model code organizations for information. Since ICC is in the code business, it seems appropriate that ICC would have information. We have provided ICC with a complete resiliency approach that resides in the appendix and will allow jurisdictions to pick and choose the approach that is best suited. Since all disasters are not created alike, these provisions provide resiliency measures for all disasters.

G236-15