IBC - Egress

2016 GROUP B COMMITTEE ACTION HEARINGS

APRIL 17, 2016 – APRIL 27, 2016
KENTUCKY INTERNATIONAL
CONVENTION CENTER
LOUISVILLE, KY

ICC
INTERNATIONAL
CODE COUNCIL®

First Printing

Publication Date: March 2016

PRINTED IN THE U.S.A.

TENTATIVE ORDER OF DISCUSSION
2016 PROPOSED CHANGES TO THE INTERNATIONAL FIRE CODE

The following is the tentative order in which the proposed changes to the code will be discussed at the public hearings. Proposed changes which impact the same subject have been grouped to permit consideration in consecutive changes.

Proposed change numbers that are indented are those which are being heard out of numerical order. Indentation does not necessarily indicate that one change is related to another. Proposed changes may be grouped for purposes of discussion at the hearing at the discretion of the chair. Note that some F code change proposals may not be included on this list, as they are being heard by another committee.

NUMBER NOT USED
F129-16

WUIC1-16
WUIC2-16
WUIC3-16
WUIC4-16
WUIC5-16
WUIC6-16
WUIC7-16
WUIC8-16
WUIC9-16
PM1-16
PM2-16
PM3-16
PM4-16
PM5-16
PM6-16
PM7-16
ADM79-16
F1-16
F12-16
F5-16
F6-16
F7-16
F8-16
F9-16
F10-16
F11-16
F13-16
F14-16
F15-16
F16-16
F17-16
F18-16
F19-16
F20-16
F21-16
F23-16
F24-16
F25-16
F22-16
F186-16
S25-16 Part II
F26-16
F27-16
F28-16
F29-16
F30-16
F31-16
F32-16
F33-16
F4-16
F34-16
F35-16
F351-16
F404-16
F36-16
F37-16
F38-16
F39-16
F40-16
F41-16
F42-16
F43-16
F44-16
F45-16
F46-16
F47-16
F49-16
F50-16
F51-16
F52-16
F53-16
F54-16
F55-16
F56-16
F57-16
F58-16
F59-16
F60-16
F61-16
F62-16
F63-16
F64-16
F65-16
F66-16
F67-16
F68-16
F69-16
F70-16
F71-16
F72-16
F73-16
F74-16
G36-16
G37-16
F76-16
F77-16
G35-16
F78-16
F79-16
G27-16
G28-16
F80-16
F81-16
F82-16
F83-16
F84-16 Part I
F85-16 Part I
F86-16 Part I
F87-16 Part I
F88-16 Part I
F89-16 Part I
F90-16
F91-16
F92-16
F93-16
F94-16
G38-16
F95-16
F96-16
F97-16
F98-16
M1-16
F99-16
F100-16
F101-16
F102-16
F103-16
F104-16
F111-16
F112-16
F256-16
F105-16
F106-16
F107-16
F108-16
F109-16

F110-16
F113-16
F114-16
F115-16
F116-16
F117-16
F118-16
F119-16
F120-16
F121-16
F122-16
F123-16
F124-16
F125-16
F126-16
F127-16
F128-16
F129-16
FS1-16
F130-16
F131-16
F132-16
F133-16
F134-16
F135-16
F136-16
F137-16
F138-16
F139-16
F140-16
F141-16
F142-16
F143-16
F144-16
F145-16
F146-16
F147-16
F148-16
F149-16
FS2-16
F150-16
F151-16
F152-16
F153-16
F154-16
F155-16
F156-16
F157-16
F158-16
F159-16
F160-16
F161-16
F162-16
F163-16
F164-16
F165-16
F166-16
F167-16
F168-16
F169-16
F170-16
F171-16
F172-16
F173-16
F174-16
F175-16
F176-16
F177-16
F178-16
F179-16
F180-16
F181-16
F182-16
F184-16
F185-16
F187-16
F188-16
F183-16
F189-16
F190-16
F191-16 Part I
F191-16 Part II
F192-16
F193-16
F194-16
F195-16
F196-16
F197-16
F198-16
F199-16
F200-16
F201-16
F202-16
F203-16
F204-16
F205-16
F206-16
F207-16
F208-16
F209-16
F210-16
F211-16
F212-16
F213-16
F214-16
F215-16
G16-16
F216-16
F217-16 Part I
F218-16
F219-16
F220-16
F221-16
F3-16 Part I
F222-16
F223-16
F224-16
F225-16
F227-16
F228-16
E1-16
F229-16
F230-16
F231-16
F232-16
F233-16
F234-16
F235-16
F236-16
F237-16
F238-16
F239-16
F240-16
F241-16
F242-16
F243-16
F244-16
F245-16
F246-16
F247-16
F248-16
F249-16
F250-16
F251-16
F252-16
F253-16
F254-16
F255-16
G30-16
G31-16
F257-16
F258-16
F259-16
F2-16
F260-16
F261-16
F262-16
F263-16
F264-16
F265-16
F266-16
F267-16
F268-16
F269-16
F270-16
F271-16
F272-16
F273-16
F274-16
F275-16
F276-16
F277-16
F278-16
F279-16
F280-16
F281-16
F282-16
F283-16
F284-16
F285-16
F286-16
F287-16
F288-16
F289-16
F290-16
F291-16
F292-16
F293-16
F294-16
F295-16
F296-16
F297-16
F298-16
F299-16
F300-16
F301-16
F302-16
F303-16
F304-16
F305-16
F306-16
F307-16
F308-16
F309-16
F310-16
F409-16
F410-16
F311-16
F312-16
F313-16
F314-16
F315-16
F316-16
F317-16
F318-16
F319-16
F320-16
F321-16
F322-16
F323-16
F324-16
F325-16
F326-16
F327-16

F328-16
F329-16
F330-16
F331-16
F332-16
F333-16
F334-16
F335-16
F336-16
F337-16
F338-16
F339-16
F340-16
F341-16
F411-16
G26-16
F342-16
F343-16
F344-16
F345-16
F346-16
F347-16
F348-16
F349-16
F350-16
F352-16
F353-16
F354-16
F355-16
F356-16
F357-16
F358-16
F359-16
F360-16
F361-16
F362-16
F363-16
F364-16
F365-16
F366-16
F367-16
F368-16
F75-16
F226-16
F369-16
F370-16
F371-16
F372-16
F373-16
F374-16
F375-16
F376-16
F377-16
F378-16
F379-16
F380-16
F381-16
F382-16
F383-16
F384-16
F385-16
F386-16
F412-16
F387-16
F388-16
F389-16
F390-16
F391-16
F392-16
F393-16
F394-16
F395-16
F396-16
F397-16
F398-16
F399-16
F400-16
F401-16
F402-16
F403-16
F405-16
F406-16
F407-16
F408-16

TENTATIVE ORDER OF DISCUSSION
2016 PROPOSED CHANGES TO THE INTERNATIONAL BUILDING CODE - STRUCTURAL

The following is the tentative order in which the proposed changes to the code will be discussed at the public hearings. Proposed changes which impact the same subject have been grouped to permit consideration in consecutive changes.

Proposed change numbers that are indented are those which are being heard out of numerical order. Indentation does not necessarily indicate that one change is related to another. Proposed changes may be grouped for purposes of discussion at the hearing at the discretion of the chair. Note that some S code change proposals may not be included on this list, as they are being heard by another committee.

NUMBERS NOT USED

G8-16
S35-16

G3-16
G9-16
G11-16
G12-16
G13-16
G18-16
G23-16
G25-16
G33-16
FS3-16
FS4-16
FS5-16
FS6-16
G1-16
G14-16 Part I
G19-16 Part I
S1-16
S2-16
S3-16
S4-16
S6-16
S7-16
S8-1 Part I
S9-16
S10-16
S11-16
S12-16
S13-16
S14-16
S15-16
S16-16
S17-16
S18-16
S19-16
S20-16
S21-16
S22-16
S23-16
S24-16
S25-16 Part I
G24-16
S26-16
S27-16
S28-16
S29-16
S30-16
S31-16
S32-16
S33-16 Part I
S34-16 Part I
S36-16
S37-16
S38-16
S39-16
S40-16
S41-16 Part I
S42-16 Part I
S43-16 Part I
S44-16
S45-16
S46-16
S47-16
S48-16
S49-16
G17-16 Part I
S52-16
S53-16
S54-16
S55-16
S56-16
S57-16
S58-16
S316-16
S59-16
S60-16
S61-16
S62-16
S63-16
S64-16
S65-16
S66-16
S67-16
S68-16
S69-16
S70-16
S71-16
S72-16
S314-16
S315-16
S73-16
S74-16
G32-16
S75-16
S76-16
S77-16
S78-16
S79-16
S80-16
S81-16
S82-16
S83-16
S84-16
S85-16
S86-16
S87-16
S88-16
S89-16
S90-16 Part I
E2-16
G29-16
S91-16
S92-16
S93-16
S94-16
S95-16
S96-16
S97-16
S98-16
S99-16
S100-16
S101-16
S102-16
S103-16
S104-16
S105-16
S106-16
S107-16
S108-16
S109-16
S110-16
S111-16
S112-16

S113-16
S114-16
S115-16
S317-16
S116-16
S318-16
S117-16
S118-16
S119-16
S120-16
S121-16
S122-16
S123-16
S124-16
S125-16
S126-16
S127-16
S128-16
S129-16
S313-16
S130-16
S131-16
S132-16
S133-16
S134-16
S135-16
S136-16
S137-16
S138-16
S139-16
S140-16
S141-16
S142-16
S143-16
S144-16
S145-16
S146-16
S147-16
S148-16
S149-16
S150-16
S151-16
S152-16
S153-16
S154-16
S155-16
G5-16
G7-16
G15-16
S156-16
S157-16
S158-16
S159-16
S160-16
S161-16
S162-16
S163-16
S164-16
S165-16
S166-16
S167-16
S168-16
S169-16
S170-16
S171-16
S172-16
S173-16
S174-16
S175-16
S176-16
S177-16
S178-16
S179-16
S180-16
S181-16
S182-16
S183-16
S184-16
S185-16
S186-16
S187-16
S188-16
S189-16
S190-16
S191-16
S192-16
S193-16
S194-16
S195-16
S196-16
S197-16
S198-16
S199-16
S200-16
S201-16
S202-16
S203-16
S204-16
S205-16
S206-16
S207-16
S208-16
S209-16
S210-16
S211-16
S212-16
S213-16
S214-16
S215-16
S216-16
S217-16
S218-16
S219-16
S220-16
S221-16
S222-16
S223-16
S224-16
S225-16
S226-16
S227-16
S228-16
S229-16
S230-16
S231-16
S232-16
S233-16
S234-16
S235-16
S236-16
S237-16
S238-16
S239-16
S240-16
S241-16
S242-16
S243-16 Part I
S244-16
S245-16 Part I
S246-16
S247-16
S248-16
S249-16
S250-16
S251-16
S252-16
S253-16
S254-16
S255-16
G2-16
G6-16 Part I
S256-16
S257-16
S258-16
S259-16
S260-16
S261-16 Part I
S262-16
S263-16 Part I
S264-16
G34-16
S265-16
S266-16
S267-16
S268-16
S269-16
S270-16
S271-16
S272-16
S273-16
S274-16
S275-16 Part I
S276-16
S277-16
S278-16
S279-16
S280-16
S281-16
S282-16
S283-16
S284-16
S285-16
S286-16
S287-16
S288-16
S289-16
S290-16
S291-16
S292-16
S293-16 Part I
G10-16 Part I
S294-16
S295-16
S296-16
S297-16
S298-16
S299-16
S300-16 Part I
S301-16
S302-16
S303-16
S304-16
S305-16
FS7-16
FS8-16
FS9-16
S306-16
S307-16
S308-16
S309-16
S310-16
S311-16
S312-16
G39-16
G40-16

E1-16
IBC: [F] 1001.3

Proponent : Kate Earley, representing West Licking Joint Fire District (kearley@westlickingfire.org), Joe Posey, representing Truro Township Fire Department (Jposey@trurotwp.org), Michael Kocab, representing Willoghby Fire Department (mkocab@willoughbyohio.com)

THIS CODE CHANGE WILL BE HEARD BY THE FIRE CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.

2015 International Building Code

Revise as follows:

[F] 1001.3 Maintenance. *Means of egress* shall be maintained in accordance with the *International Fire Code*,inlcuding the egress during an active threat emergency.

Reason: During a lockdown emergency, if the option to flee is not possible for occupants, the second option would be to shelter in place. This is a temporary (not permanent) situation, and should be controlled by the maintenance code, 2015 IFC Section 1031. (Barricade could range from a device to furniture and filing cabinets; whatever is approved by the IFC as well as parties involved in making and maintaining the emergency response plan- Law Enforcement, Fire Chief, Authority Having Jurisdiction, School Administration).

Cost Impact: Will not increase the cost of construction
This code section already states the means of egress must be maintained in accordance with the International Fire Code. I have added that the maintenance includes conditions during an active threat as well. No associated costs should be formed.

E1-16 : [F] 1001.3-EARLEY4781

E2-16

IBC: 202 (New), 1011.11, 1014.1.1 (New), 1015.2.1, 1029.15, 1607.8, 1607.8.1, 1607.8.1.1, 1607.8.1.2, 2407, 2407.1, 2407.1.1, 2407.1.2, 2407.1.3, 2407.1.4, 2407.1.4.1, 2407.1.4.2

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

THIS CODE CHANGE WILL BE HEARD BY THE STRUCTURAL COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEES.

2015 International Building Code

Add new definition as follows:

SECTION 202 DEFINITIONS

BALUSTER. Upright members that support a handrail or guardrail and that transfer the loads on the handrail or the guardrail to the supporting structure.

SECTION 202 DEFINITIONS

GUARDRAIL. A horizontal or sloping rail that is the top rail of a guard assembly.

SECTION 202 DEFINITIONS

HANDRAIL. A horizontal or sloping rail intended for grasping by the hand for guidance or support.

Revise as follows:

SECTION 2407 GLASS IN ~~HANDRAILS~~ HANDRAIL AND ~~GUARDS~~ GUARD SYSTEMS

2407.1 Materials. Glass used in a handrail, ~~guardrail~~ *baluster,* or a *guard* ~~section~~ shall be laminated glass constructed of fully tempered or heat-strengthened glass and shall comply with Category II or CPSC 16 CFR Part 1201 or Class A of ANSI Z97.1. Glazing in ~~railing~~ in-fill panels shall be of an *approved* safety glazing material that conforms to the provisions of Section 2406.1.1. For all glazing types, the minimum nominal thickness shall be $^1/_4$ inch (6.4 mm).

> **Exception:** Single fully tempered glass complying with Category II of CPSC 16 CFR Part 1201 or Class A of ANSI Z97.1 shall be permitted to be used in ~~handrails and guardrails~~ a handrail, *baluster* or *guard* where there is no walking surface beneath them or the walking surface is permanently protected from the risk of falling glass.

2407.1.1 Loads. The ~~panels~~ *handrails*, *balusters* or guards and their support system shall be designed to withstand the loads specified in Section 1607.8. A design factor of four shall be used for safety.

2407.1.2 Support. Each ~~handrail~~*handrail* or ~~*guard*~~ *guardrail* ~~section~~ shall be supported by a minimum of three glass balusters or shall be otherwise supported to remain in place should one baluster panel fail. Glass balusters shall not be installed without an attached handrail or ~~*guard*~~ *guardrail*.

> **Exception:** A ~~top rail~~ *guardrail* shall not be required where the glass balusters are laminated glass with two or more glass plies of equal thickness and the same glass type when *approved* by the *building official*. ~~The panels shall be designed to withstand the loads specified in Section 1607.8.~~

2407.1.3 Parking garages. Glazing materials shall not be installed in ~~handrails~~ a handrail, baluster, *guard* or ~~*guards*~~in-fill panel in parking garages except for pedestrian areas not exposed to impact from vehicles.

2407.1.4 Glazing in wind-borne debris regions. Glazing installed in in-fill panels or ~~balusters~~ guards in *wind-borne debris regions* shall comply with the following:

2407.1.4.1 ~~Balusters and in-fill~~ In-fill panels. Glass installed in exterior ~~railing~~ in-fill panels ~~or balusters~~ shall be laminated glass complying with Category II of CPSC 16 CFR Part 1201 or Class A of ANSI Z97.1.

2407.1.4.2 Glass supporting ~~top rail~~ a handrail or guardrail. When the ~~top rail~~ *handrail* or *guardrail* is supported by glass, the assembly shall be tested according to the impact requirements of Section 1609.1.2. The ~~top rail~~ *handrail* or *guardrail* shall remain in place after impact.

SECTION 1607 LIVE LOADS

1607.8 Loads on handrails, guards, grab bars, ~~seats~~ and vehicle barriers. Handrails~~,~~ and *guards* ~~, grab~~ shall be designed and constructed for the structural loading conditions set forth in Section 1607.8.1. Grab bars, accessible seats~~,~~ and accessible benches shall be desingned and ~~vehicle~~ constructed for the structrual loading conditions set forth in Section 1607.8.2. Vehicle barriers shall be designed and constructed for the structural loading conditions set forth in ~~this section~~ Section 1607.8.3.

1607.8.1 Handrails and guards. ~~Handrails~~
Handrails and ~~*guards*~~ *guardrails* shall be designed to resist a linear load of 50 pounds per linear foot (plf) (0.73 kN/m) in

accordance with Section 4.5.1 of ASCE 7. Glass handrail assemblies and *guards*shall also comply with Section 2407.

Exceptions:

1. For one- and two-family dwellings, only the single concentrated load required by Section 1607.8.1.1 shall be applied.
2. In Group I-3, F, H and S occupancies, for areas that are not accessible to the general public and that have an *occupant load*less than 50, the minimum load shall be 20 pounds per foot (0.29 kN/m).

1607.8.1.1 Concentrated load. ~~Handrails~~
Handrails and ~~guards~~ *guardrails* shall be designed to resist a concentrated load of 200 pounds (0.89 kN) in accordance with Section 4.5.1 of ASCE 7.

1607.8.1.2 ~~Intermediate rails~~ Guards. ~~Intermediate rails (all those except~~
Guards, other than the ~~handrail), balusters and panel fillers~~ guardrail shall be designed to resist a ~~concentrated~~ horizontal load of 50 pounds (0.22 kN) per square foot (305 mm x 305 mm) in accordance with Section 4.5.1 of ASCE 7.

1607.8.2 Grab bars, shower seats and dressing room bench seats. Grab bars, shower seats and dressing room bench seats shall be designed to resist a single concentrated load of 250 pounds (1.11 kN) applied in any direction at any point on the grab bar or seat so as to produce the maximum load effects.

1607.8.3 Vehicle barriers. Vehicle barriers for passenger vehicles shall be designed to resist a concentrated load of 6,000 pounds (26.70 kN) in accordance with Section 4.5.3 of ASCE 7. Garages accommodating trucks and buses shall be designed in accordance with an *approved* method that contains provisions for traffic railings.

SECTION 1011 STAIRWAYS

1011.11 Handrails. *Stairways* shall have *handrails* on each side and shall comply with Section 1014. ~~Where glass is used to provide the *handrail*, the *handrail* shall comply with Section 2407.~~

Exceptions:

1. *Stairways* within dwelling units and s*piral stairways* are permitted to have a *handrail* on one side only.
2. Decks, patios and walkways that have a single change in elevation where the landing depth on each side of the change of elevation is greater than what is required for a landing do not require *handrails*.
3. In Group R-3 occupancies, a change in elevation consisting of a single riser at an entrance or egress door does not require *handrails*.
4. Changes in room elevations of three or fewer risers within dwelling units and sleeping units in Group R-2 and R-3 do not require *handrails*.

SECTION 1014 HANDRAILS

1014.1.1 Glazing. Where glass is used to provide a *handrail*, or any portion of the *handrail* assembly, including balusters or in-fill panels, such assemblies shall comply with Section 2407.

SECTION 1015 GUARDS

1015.2.1 Glazing. Where glass is used to provide a *guard* or as a portion of the *guard* ~~system~~ assembly, ~~the *guard*~~ such assemblies shall comply with Section 2407. Where the glazing provided does not meet the strength and attachment requirements ~~of~~ for guards in Section 1607.8, complying *guards* shall be located along glazed sides of open-sided walking surfaces.

SECTION 1029 ASSEMBLY

1029.15 Handrails. Ramped *aisles* having a slope exceeding one unit vertical in 15 units horizontal (6.7-percent slope) and stepped *aisles* shall be provided with *handrails* in compliance with Section 1014 located either at one or both sides of the *aisle* or within the *aisle* width.

Exceptions:

1. *Handrails* are not required for ramped *aisles* with seating on both sides.
2. *Handrails* are not required where, at the side of the *aisle*, there is a *guard* with a ~~top surface~~ *guardrail* that complies with the graspability requirements of *handrails* in accordance with Section 1014.3.
3. *Handrail* extensions are not required at the top and bottom of stepped *aisles* and ramped *aisles* to permit crossovers within the *aisles*.

Reason: The intent is to update section on glass handrails, balusters, infill panels and guards (including guardrails) to coordinate with the language in Chapter 10 for handrails and guards, and to provide consistent terminology throughout the sections.
The following is an explanation of the terminology that is used in the proposed text–

A handrail is a rail that is between 34" ad 38" above a walking surface, stairway run or ramp run (1014). Handrails are required along stairways and ramps. Handrail are currently defined as

HANDRAIL. A horizontal or sloping rail intended for grasping by the hand for guidance or support.

A guardrail to the top rail of a guard. Since this used to be a term for a handrail on top of a guard (which had been permitted on all stairways)

guardrail needs to be defined for these provisions. When 'guard' is in the list it would include the top rail of the guard as part of the assembly. See the proposal for the proposed definition.

In-fill panels are vertical elements or barriers - short walls or railing systems (in-fill panels) that are not required guards. In-fill panels can be on their own or supporting handrails.

Balusters are the supporting elements for handrails or guardrails and transfer the load to the floor, stairway or other supporting structure.

The changes in Section 2407 and 1608.7 is for consistent terminology. It is especially important to separate handrails and guardrails from infill panels and guards for application of loading. This terminology would be consistent with ASCE 7.

2407.1.2 – The exception does have to the repeat reference to 1607.8 – already in 2407.1 and not part of the requirements in this section. 2407.1.4.1 – This Section only has to address in-fill panels because guards are already required to have this type of glass in 2407.1.

1011, 1014,1015 and 1029 -Currently, under stairways, only glass handrails are mentioned and not any supporting elements. Nothing for glass is referenced in ramps. It is more consistent to have the reference for glass in the handrail and guard sections.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2014 and 2015 the BCAC has held 5 open meetings. In addition, there were numerous Working Group meetings and conference calls for the current code development cycle, which included members of the committee as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: **BCAC**

Cost Impact: Will not increase the cost of construction
No increase in cost as this is a coordination of terms between Chapters 10, 16 and 24 with respect to handrails and guards

E2-16 : 1011.11-KULIK11682