2019 GROUP B PROPOSED CHANGES TO THE I-CODES
ALBUQUERQUE COMMITTEE ACTION HEARINGS

April 28 - May 8, 2019
Albuquerque Convention Center, Albuquerque, NM
2019 GROUP B – PROPOSED CHANGES TO THE
INTERNATIONAL EXISTING BUILDING CODE

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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 EB code change proposals may not be included on this list, as they are being heard by another committee.

EB1-19

IEBC®: 202 (New)

Proponent: Felix I. Zemel, ICC Region 6 -- North East Regional Coalition, representing ICC Region 6 -- North East Regional Coalition (felix@pracademicsolutions.com); Peter Zvingilas, ICC Region 6- North East Regional Coalition, Town of Groton and Voluntown CT (pzvingilas@voluntown.gov)

2018 International Existing Building Code

Add new definition as follows:

SPACE, RECONFIGURED An alteration that results in a change to any component of the means of egress or the path of egress travel and does not meet the scope of Alteration--Level 1 in Section 602.1.

Reason: Code officials and RDPs often debate whether a proposed project is either an Alteration--Level 1 Alteration--Level 2. From experience, this determination frequently hinges upon a determination whether the proposed work is a "reconfiguration of space," but this term is not defined in the IEBC. The MA Board of Building Regulations and Standards’ Existing Building Advisory Technical Advisory Committee has been working on an interpretation of the definition of "work area" for many years, as a result. After many years of debate, they have conceptually agreed that the determination of reconfiguration of space is related to changes in either the path of egress travel or any of the egress component(s): exit access, exit, or exit discharge.

Without the addition of the last preposition of the definition, code officials may erroneously misclassify "removal and replacement or covering of existing materials, elements, equipment, or fixtures using new materials, elements, equipment, or fixtures that serve the same purpose" (scope of Alteration--Level 1 from Section 602.1) as an Alteration--Level 2 or Alteration--Level 3; thus requiring a more extensive scope of work and increasing the potential cost of construction.

Addition of this definition can potentially reduce the number of appeals of code officials' interpretations; thus improving efficiency in the permitting process.

Cost Impact: The code change proposal will decrease the cost of construction

Due to the extended guidance to code officials, addition of this definition can only decrease the cost of construction. This is because it further clarifies when an alteration project should be classified as an Alteration--Level 1 or one of the other two alteration levels.

Proposal # 4763
EB2-19

IEBC®: [BS] 202

**Proponent:** Michael Fillion, representing National Council of Structural Engineers Association (mrf.structure@verizon.net)

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

### 2018 International Existing Building Code

Revise as follows:

**[BS] SUBSTANTIAL STRUCTURAL ALTERATION.** An alteration in which the gravity load-carrying structural elements altered within a 5-year period support more than 30 percent of the total floor and roof area of the building or structure. The areas to be counted toward the 30 percent shall include mezzanines, penthouses, and in-filled courts and shafts tributary to the altered structural elements. *For the purpose of this definition, a structural element shall be considered altered if its demand is increased by more than 5% or its capacity is reduced by any amount.*

**Reason:** The National Council of Structural Engineers Existing Buildings Sub-committee has received inquiries from practicing structural engineers regarding the interpretation of this definition. In Massachusetts, a structural engineering firm requested an interpretation from the Chief of Building Inspectors and the Structural Advisory Committee to the Massachusetts State Building Code. From our feedback, practicing structural engineers have various opinions regarding the interpretation of the definition. A common question is "What is considered an alteration." The intent of the proposed added language is to make it clear what an alteration is in the context of the definition.

**Cost Impact:** The code change proposal will not increase or decrease the cost of construction

The intent of this code change proposal is for clarification
**EB3-19**

**IEBC®: 202**

**Proponent:** Allison Cook, Arlington County, VA, representing VBCOA; Kenney Payne, Moseley Architects, representing AIA Virginia (kpayne@moseleyarchitects.com); Ronald Clements Jr, representing Chesterfield County (clementsro@chesterfield.gov); Bob Orr, representing VBCOA (borr@culpepercounty.gov); Charles Vernon, representing VBCOA (cvernon@arlingtonva.us); Michael Williams (mike.williams@harrisonburgva.gov); Debra McMahon (debra.mcmahon@fairfaxcounty.gov); David Collins, The American Institute of Architects, representing The American Institute of Architects (dcollins@preview-group.com); Christina Jackson, City of Norfolk, representing City of Norfolk / WICED of VA (christina.reynolds@norfolk.gov)

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**2018 International Existing Building Code**

Revise as follows:

**WORK AREA.** That portion or portions of a building consisting of all reconfigured spaces as indicated on the construction documents. Work area excludes other portions of the building where incidental work entailed by the intended work must be performed and portions of the building where work not initially intended by the owner is specifically required by this code. Intended room, space, or portion of a building or structure where a wall or walls are added, relocated, or removed. Work area excludes the following:

1. The addition or elimination of any door or window.
2. The reconfiguration or extension of any system.
3. The installation of any additional equipment.
4. The removal of finished flooring or ceiling materials.
5. Adjacent rooms or other rooms, spaces, or portions of the building or structure where incidental work entailed by the intended work must be performed.
6. Portions of the building or structure where work not initially intended is specifically required by this code.

**Reason:** The current definition of work area is too vague and creates the potential for significantly different interpretations of what constitutes a work area. In Virginia, we have experienced inconsistency between jurisdictions and adopted this definition to address that issue. The proposed change provides more details on what is and is not part of a work area. This should help both building officials and design professionals.

**Cost Impact:** The code change proposal will not increase or decrease the cost of construction. This proposal is only to add clarification, it should not impact cost.

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Proposal # 5218
EB4-19


Proponent: Allison Cook, Arlington, VA, representing VBCOA; Kenney Payne, Moseley Architects, representing AIA Virginia (kpayne@moseleyarchitects.com); Ronald Clements Jr, representing Chesterfield County (clementsro@chestfielder.gov); Charles Vernon, representing VBCOA (cvernon@arlingtonva.us); Michael Williams (mike.williams@harrisonburgva.gov); Debra McMahon (debra.mcmahon@fairfaxcounty.gov); David Collins (dcollins@preview-group.com); Christina Jackson, representing City of Norfolk / WICED of VA (christina.reynolds@norfolk.gov)

2018 International Existing Building Code

CHAPTER 1 SCOPE AND ADMINISTRATION

CHAPTER 2 DEFINITIONS

CHAPTER 3 PROVISIONS FOR ALL COMPLIANCE METHODS GENERAL PROVISIONS AND SPECIAL DETAILED REQUIREMENTS

Revise as follows:

301.3 Alteration, addition or change of occupancy. The alteration, addition or change of occupancy of all existing buildings shall comply with one of the methods listed in Section 301.3.1, 301.3.2 or 301.3.3 as selected by the applicant. Sections 301.3.1 through 301.3.3 shall not be applied in combination with each other.

Exception: Subject to the approval of the code official, alterations complying with the laws in existence at the time the building or the affected portion of the building was built shall be considered in compliance with the provisions of this code. New structural members added as part of the alteration shall comply with the International Building Code. This exception shall not apply to alterations that constitute substantial improvement in flood hazard areas, which shall comply with Section 503.2, 701.3 or 1301.3.3. This exception shall not apply to the structural provisions of Chapter 5 or to the structural provisions of Sections 706, 806 and 906. Sections 308, 502, 503, and 504.

Delete without substitution:

301.3.1 Prescriptive compliance method. Alterations, additions and changes of occupancy complying with Chapter 5 of this code in buildings complying with the International Fire Code shall be considered in compliance with the provisions of this code.

Revise as follows:

301.3.2 Performance compliance method. Alterations, additions and changes of occupancy complying with Chapter 5 of this code shall be considered in compliance with the provisions of this code.

301.3.3 301.3.1 Work area compliance method. Alterations, additions and changes of occupancy complying with the applicable requirements of Chapters 6 through 10 of this code shall be considered in compliance with the provisions of this code.

301.4 Relocated buildings. Relocated buildings shall comply with the requirements of Chapter 14—Chapter 10.
Add new text as follows:

SECTION 306
FIRE ESCAPES

Revise as follows:

504.1 306.1 Where permitted. Fire escapes shall be permitted only as provided for in Sections 504.1.1 - 306.1.4
through 504.1.4, 306.1.4.

504.1.1 306.1.1 New buildings. Fire escapes shall not constitute any part of the required means of egress in new buildings.

504.1.2 306.1.2 Existing fire escapes. Existing fire escapes shall continue to be accepted as a component in the means of egress in existing buildings only.

504.1.3 306.1.3 New fire escapes. New fire escapes for existing buildings shall be permitted only where exterior stairways cannot be utilized because of lot lines limiting stairway size or because of sidewalks, alleys or roads at grade level. New fire escapes shall not incorporate ladders or access by windows.

504.1.4 306.1.4 Limitations. Fire escapes shall comply with this section and shall not constitute more than 50 percent of the required number of exits nor more than 50 percent of the required exit capacity.

504.2 306.2 Location. Where located on the front of the building and where projecting beyond the building line, the lowest landing shall be not less than 7 feet (2134 mm) or more than 12 feet (3658 mm) above grade, and shall be equipped with a counterbalanced stairway to the street. In alleyways and thoroughfares less than 30 feet (9144 mm) wide, the clearance under the lowest landing shall be not less than 12 feet (3658 mm).

504.3 306.3 Construction. The fire escape shall be designed to support a live load of 100 pounds per square foot (4788 Pa) and shall be constructed of steel or other approved noncombustible materials. Fire escapes constructed of wood not less than nominal 2 inches (51 mm) thick are permitted on buildings of Type V construction. Walkways and railings located over or supported by combustible roofs in buildings of Type III and IV construction are permitted to be of wood not less than nominal 2 inches (51 mm) thick.

504.4 306.4 Dimensions. Stairways shall be not less than 22 inches (559 mm) wide with risers not more than, and treads not less than, 8 inches (203 mm) and landings at the foot of stairways not less than 40 inches (1016 mm) wide by 36 inches (914 mm) long, located not more than 8 inches (203 mm) below the door.

504.5 306.5 Opening protectives. Doors and windows within 10 feet (3048 mm) of fire escape stairways shall be protected with 3/4-hour opening protectives.

Exception: Opening protection shall not be required in buildings equipped throughout with an approved automatic sprinkler system.

Add new text as follows:

SECTION 307
GLASS REPLACEMENT AND WINDOW OPENINGS

Revise as follows:

702.4 307.1 Window opening control devices on replacement windows. In Group R-2 or R-3 buildings containing dwelling units and one-and two-family dwellings and townhouses regulated by the International Residential Code, window opening control devices complying with ASTM F2090 shall be installed where an existing window is replaced and where all of the following apply to the replacement window:

1. The window is operable.
2. The window replacement includes replacement of the sash and the frame.
3. One of the following applies:
   3.1. In Group R-2 or R-3 buildings containing dwelling units, the top of the sill of the window opening is at a height less than 36 inches (915 mm) above the finished floor.
   3.2. In one- and two-family dwellings and townhouses regulated by the International Residential Code, the top sill of the window opening is at a height less than 24 inches (610 mm) above the finished floor.
4. The window will permit openings that will allow passage of a 4-inch-diameter (102 mm) sphere when the window is in its largest opened position.
5. The vertical distance from the top of the sill of the window opening to the finished grade or other surface below, on the exterior of the building, is greater than 72 inches (1829 mm).

The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by Section 1030.2 of the International Building Code.
Exceptions:

1. Operable windows where the top of the sill of the window opening is located more than 75 feet (22 860 mm) above the finished grade or other surface below, on the exterior of the room, space or building, and that are provided with window fall prevention devices that comply with ASTM F2006.

2. Operable windows with openings that are provided with window fall prevention devices that comply with ASTM F2090.

704.307.2 Emergency escape and rescue openings. Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys or tools. Bars, grilles, grates or similar devices placed over emergency escape and rescue openings shall comply with the minimum net clear opening size required by the code that was in effect at the time of construction. Such devices shall be releasable or removable from the inside without the use of a key, tool or force greater than that which is required for normal operation of the escape and rescue opening. Where such bars, grilles, grates or similar devices are installed, they shall not reduce the net clear opening of the emergency escape and rescue openings. Smoke alarms shall be installed in accordance with Section 907.2.10 of the International Building Code regardless of the valuation of the alteration.

705.307.3 Replacement window emergency escape and rescue openings. Where windows are required to provide emergency escape and rescue openings in Group R-2 and R-3 occupancies and one- and two-family dwellings and townhouses regulated by the International Residential Code, replacement windows shall be exempt from the requirements of Sections 1030.2, 1030.3 and 1030.4 of the International Building Code and Sections R310.2.1, R310.2.2 and R310.2.3 of the International Residential Code, provided that the replacement window meets the following conditions:

1. The replacement window is the manufacturer’s largest standard size window that will fit within the existing frame or existing rough opening.
2. The replacement window is not part of a change of occupancy.

Window opening control devices complying with ASTM F2090 shall be permitted for use on windows required to provide emergency escape and rescue openings.

402.307.4 Glazing in hazardous locations. Replacement glazing in hazardous locations shall comply with the safety glazing requirements of the International Building Code or International Residential Code as applicable.

Exception: Glass block walls, louvered windows and jalousies repaired with like materials.

Add new text as follows:

SECTION 308
REROOFING AND ROOF REPAIR

Delete without substitution:

[BS] 706.1 General. Where alteration work includes replacement of equipment that is supported by the building or where a reroofing permit is required, the provisions of this section shall apply.

Revise as follows:

[BS] 705.1 General. Materials and methods of application used for recovering or replacing an existing roof covering shall comply with the requirements of Chapter 15 of the International Building Code.

Exceptions:

1. Roof replacement or roof recover of existing low-slope roof coverings shall not be required to meet the minimum design slope requirement of one-quarter unit vertical in 12 units horizontal (2-percent slope) in Section 1507 of the International Building Code for roofs that provide positive roof drainage.

2. Recovering or replacing an existing roof covering shall not be required to meet the requirement for secondary (emergency overflow) drains or scuppers in Section 1502 of the International Building Code for roofs that provide positive roof drainage. For the purposes of this exception, existing secondary drainage or scupper systems required in accordance with this code shall not be removed unless they are replaced by secondary drains or scuppers designed and installed in accordance with Section 1502 of the International Building Code.

[BS] 705.2 Structural and construction loads. Structural roof components shall be capable of supporting the roof-covering system and the material and equipment loads that will be encountered during installation of the system.

[BS] 706.2 Addition or replacement of roofing or replacement of equipment. Any existing gravity load-carrying structural element for which an alteration causes an increase in design dead, live or snow load, including snow drift effects, of more than 5 percent shall be replaced or
altered as needed to carry the gravity loads required by the International Building Code for new structures.

Exceptions:

1. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the altered building complies with the conventional light-frame construction methods of the International Building Code or the provisions of the International Residential Code.

2. Buildings in which the increased dead load is due entirely to the addition of a second layer of roof covering weighing 3 pounds per square foot (0.1437 kN/m²) or less over an existing single layer of roof covering.

[BS] 705.3 308.4 Roof replacement. Roof replacement shall include the removal of all existing layers of roof coverings down to the roof deck.

Exception: Where the existing roof assembly includes an ice barrier membrane that is adhered to the roof deck, the existing ice barrier membrane shall be permitted to remain in place and covered with an additional layer of ice barrier membrane in accordance with Section 1507 of the International Building Code.

[BS] 705.3 1 308.4.1 Roof recover. The installation of a new roof covering over an existing roof covering shall be permitted where any of the following conditions occur:

1. The new roof covering is installed in accordance with the roof covering manufacturer’s approved instructions.
2. Complete and separate roofing systems, such as standing-seam metal roof panel systems, that are designed to transmit the roof loads directly to the building’s structural system and that do not rely on existing roofs and roof coverings for support, are installed.
3. Metal panel, metal shingle and concrete and clay tile roof coverings are installed over existing wood shake roofs in accordance with Section 705.4.
4. A new protective roof coating is applied over an existing protective roof coating, a metal roof panel, metal roof shingles, mineral-surfaced roll roofing, a built-up roof, modified bitumen roofing, thermoset and thermoplastic single-ply roofing or a spray polyurethane foam roofing system.

[BS] 705.3 1 308.4.1.1 Exceptions. A roof recover shall not be permitted where any of the following conditions occur:

1. The existing roof or roof covering is water soaked or has deteriorated to the point that the existing roof or roof covering is not adequate as a base for additional roofing.
2. The existing roof covering is slate, clay, cement or asbestos-cement tile.
3. The existing roof has two or more applications of any type of roof covering.

[BS] 705.4 308.5 Roof recovering. Where the application of a new roof covering over wood shingle or shake roofs creates a combustible concealed space, the entire existing surface shall be covered with gypsum board, mineral fiber, glass fiber or other approved materials securely fastened in place.

[BS] 705.6 308.6 Reinstallation of materials. Existing slate, clay or cement tile shall be permitted for reinstallation, except that damaged, cracked or broken slate or tile shall not be reinstalled. Existing vent flashing, metal edgings, drain outlets, collars and metal counterflashings shall not be reinstalled where rusted, damaged or deteriorated. Aggregate surfacing materials shall not be reinstalled.

[BS] 705.6 308.7 Flashings. Flashings shall be reconstructed in accordance with approved manufacturer’s installation instructions. Metal flashing to which bituminous materials are to be adhered shall be primed prior to installation.

[BS] 705.8 308.8 Additional requirements for reroof permits. The requirements of this section shall apply to alteration work requiring reroof permits.

[BS] 706.3 1 308.8.1 Bracing for unreinforced masonry bearing wall parapets. Where a permit is issued for reroofing for more than 25 percent of the roof area of a building assigned to Seismic Design Category D, E or F that has parapets constructed of unreinforced masonry, the work shall include installation of parapet bracing unless an evaluation demonstrates compliance of such items. Reduced seismic forces shall be permitted.

[BS] 706.3 1 308.8.2 Roof diaphragms resisting wind loads in high-wind regions. Where roofing materials are removed from more than 50 percent of the roof diaphragm or section of a building located where the ultimate design wind speed, \( \text{Vult} \), determined in accordance with Figure 1609.3(1) of the International Building Code, is greater than 115 mph (51 m/s) or in a special wind region, as defined in Section 1609 of the International Building Code, roof diaphragms, connections of the roof diaphragm to roof framing members, and roof-to-wall connections shall be evaluated for the wind loads specified in the International Building Code, including wind uplift. If the diaphragms and connections in their current condition are not capable of resisting 75 percent of those wind loads, they shall be replaced or strengthened in accordance with the loads specified in the International Building Code.

CHAPTER 4 REPAIRS

Revise as follows:
401.1 Scope. Repairs shall comply with the requirements of this chapter. Repairs to historic buildings need only comply with Chapter 42-8.

Delete without substitution:

CHAPTER 5—PRESCRIPTIVE COMPLIANCE METHOD

SECTION 501—GENERAL

501.1 Scope. The provisions of this chapter shall control the alteration, addition and change of occupancy of existing buildings and structures, including historic buildings and structures, as referenced in Section 301.3.2.

Exception: Existing bleachers, grandstands and folding and telescopic seating shall comply with ICC 300.

501.1.1 Compliance with other methods. Alterations, additions and changes of occupancy to existing buildings and structures shall comply with the provisions of this chapter or with one of the methods provided in Section 301.3.

501.2 Fire-resistance ratings. Where approved by the code official, in buildings where an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 of the International Building Code has been added, and the building is now sprinklered throughout, the required fire-resistance ratings of building elements and materials shall be permitted to meet the requirements of the current building code. The building is required to meet the other applicable requirements of the International Building Code.

Plans, investigation and evaluation reports, and other data shall be submitted indicating which building elements and materials the applicant is requesting the code official to review and approve for determination of applying the current building code fire-resistance ratings. Any special construction features, including fire-resistance-rated assemblies and smoke-resistive assemblies, conditions of occupancy, means of egress conditions, fire code deficiencies, approved modifications or approved alternative materials, design and methods of construction, and equipment applying to the building that impact required fire-resistance ratings shall be identified in the evaluation reports submitted.

SECTION 502—ADDITIONS

502.1 General. Additions to any building or structure shall comply with the requirements of the International Building Code for new construction. Alterations to the existing building or structure shall be made to ensure that the existing building or structure together with the addition are not less complying with the provisions of the International Building Code than the existing building or structure was prior to the addition. An existing building together with its additions shall comply with the height and area provisions of Chapter 5 of the International Building Code.

502.2 Disproportionate earthquake damage. A building assigned to Seismic Design Category D, E or F that has sustained disproportionate earthquake damage shall be subject to the requirements for buildings with substantial structural damage to vertical elements of the lateral force-resisting system.

502.3 Flood-hazard areas. For buildings and structures in flood hazard areas established in Section 1612.3 of the International Building Code, or Section R322 of the International Residential Code, as applicable, any addition that constitutes substantial improvement of the existing structure shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design.

For buildings and structures in flood hazard areas established in Section 1612.3 of the International Building Code, or Section R322 of the International Residential Code, as applicable, any additions that do not constitute substantial improvement of the existing structure are not required to comply with the flood design requirements for new construction.

502.4 Existing structural elements carrying gravity load. Any existing gravity load carrying structural element for which an addition and its related alterations cause an increase in design dead, live or snow load, including snow drift effects, of more than 5 percent shall be replaced or altered as needed to carry the gravity loads required by the International Building Code for new structures. Any existing gravity load-carrying structural element whose vertical load-carrying capacity is decreased as part of the addition and its related alterations shall be considered to be an altered element subject to the requirements of Section 502.3. Any existing element that will form part of the lateral load path for any part of the addition shall be considered to be an existing lateral load-carrying structural element subject to the requirements of Section 502.5.

Exception: Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the existing building and the addition together comply with the conventional light-frame construction methods of the International Building Code or the provisions of the International Residential Code.

502.5 Existing structural elements carrying lateral load. Where the addition is structurally independent of the existing structure, existing lateral load-carrying structural elements shall be permitted to remain unaltered. Where the addition is not structurally independent of the existing structure, the existing structure and its addition acting together as a single structure shall be shown to meet the requirements of Sections 1608 and 1613 of the International Building Code using full seismic forces.

Exceptions:
Any existing lateral load-carrying structural element whose demand-capacity ratio with the addition considered is not more than 10 percent greater than its demand-capacity ratio with the addition ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces in accordance with Sections 1609 and 1613 of the International Building Code. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces and capacities shall account for the cumulative effects of additions, alterations and repairs since original construction.

Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the existing building and the addition together comply with the conventional light-frame construction methods of the International Building Code or the provisions of the International Residential Code:

502.6 Smoke alarms in existing portions of a building. Where an addition is made to a building or structure of a Group R or I-1 occupancy, the existing building shall be provided with smoke alarms in accordance with Section 1103.8 of the International Fire Code.

502.7 Carbon monoxide alarms in existing portions of a building. Where an addition is made to a building or structure of Group I-1, I-2, I-4 or R occupancy, the existing building shall be provided with carbon monoxide alarms in accordance with Section 1103.9 of the International Fire Code or Section R315 of the International Residential Code, as applicable:

Exceptions:

1. Work involving the exterior surfaces of buildings, such as the replacement of roofing or siding, the addition or replacement of windows or doors, or the addition of porches or decks.
2. Installation, alteration or repair of plumbing or mechanical systems, other than fuel burning appliances.

502.8 Additions to Group E facilities. For additions to Group E occupancies, storm shelters shall be provided in accordance with Section 1106.1.

SECTION 503
ALTERATIONS

503.1 General: Except as provided by Section 302.4, 302.5 or this section, alterations to any building or structure shall comply with the requirements of the International Building Code for new construction. Alterations shall be such that the existing building or structure is not less complying with the provisions of the International Building Code than the existing building or structure was prior to the alteration.

Exceptions:

1. An existing stairway shall not be required to comply with the requirements of Section 1011 of the International Building Code where the existing space and construction does not allow a reduction in pitch or slope.
2. Handrails otherwise required to comply with Section 1011.11 of the International Building Code shall not be required to comply with the requirements of Section 1014.6 of the International Building Code regarding full extension of the handrails where such extensions would be hazardous because of plan configuration.
3. Where provided in below-grade transportation stations, existing and new escalators shall have a clear width of less than 32 inches (815 mm).

[BS]-503.2 Flood hazard areas. For buildings and structures in flood hazard areas established in Section 1612.3 of the International Building Code, or Section R322 of the International Residential Code, as applicable, any alteration that constitutes substantial improvement of the existing structure shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design.

For buildings and structures in flood hazard areas established in Section 1612.3 of the International Building Code, or Section R322 of the International Residential Code, as applicable, any alterations that do not constitute substantial improvement of the existing structure shall not be required to comply with the flood design requirements for new construction.

[BS]-503.3 Existing structural elements carrying gravity load. Any existing gravity load-carrying structural element for which an alteration causes an increase in design dead, live or snow load, including snow drift effects, of more than 5 percent shall be replaced or altered as needed to carry the gravity loads required by the International Building Code for new structures. Any existing gravity load-carrying structural element whose gravity load carrying capacity is decreased as part of the alteration shall be shown to have the capacity to resist the applicable design dead, live and snow loads including snow drift effects required by the International Building Code for new structures.

Exceptions:

1. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the altered building complies with the conventional light-frame construction methods of the International Building Code or the provisions of the International Residential Code.
2. Buildings in which the increased dead load is due entirely to the addition of a second layer of roof covering weighing 3 pounds per square foot (0.1437 kN/m²), or less over an existing single layer of roof covering.
[BS] 503.4 Existing structural elements carrying lateral load. Except as permitted by Section 503.12, where the alteration increases design lateral loads, results in a prohibited structural irregularity as defined in ASCE 7, or decreases the capacity of any existing lateral load-carrying structural element, the structure of the altered building or structure shall meet the requirements of Sections 1609 and 1613 of the International Building Code. Reduced seismic forces shall be permitted.

Exception: Any existing lateral load-carrying structural element whose demand-capacity ratio with the alteration considered is not more than 10 percent greater than its demand-capacity ratio with the alteration ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces in accordance with Sections 1609 and 1613 of the International Building Code. Reduced seismic forces shall be permitted. For purposes of this exception, comparisons of demand capacity ratios and calculation of design lateral loads, forces and capacities shall account for the cumulative effects of additive and alterations since original construction.

[BS] 503.5 Seismic Design Category F. Where the work area exceeds 50 percent of the building area, and where the building is assigned to Seismic Design Category F, the structure of the altered building shall meet the requirements of Sections 1609 and 1613 of the International Building Code. Reduced seismic forces shall be permitted.

[BS] 503.6 Bracing for unreinforced masonry parapets on reroofing. Where the intended alteration requires a permit for reroofing and involves removal of roofing materials from more than 25 percent of the roof area of a building assigned to Seismic Design Category D, E or F that has parapets constructed of unreinforced masonry, the work shall include installation of parapet bracing to resist out-of-plane seismic forces, unless an evaluation demonstrates compliance of such items. Use of reduced seismic forces shall be permitted.

[BS] 503.7 Anchorage for concrete and reinforced masonry walls. Where the work area exceeds 50 percent of the building area, the building is assigned to Seismic Design Category C, D, E or F and the building’s structural system includes concrete or reinforced masonry walls with a flexible roof diaphragm, the alteration work shall include installation of wall anchors at the roof line, unless an evaluation demonstrates compliance of existing wall anchorage. Use of reduced seismic forces shall be permitted.

[BS] 503.9 Anchorage for unreinforced masonry walls in major alterations. Where the work area exceeds 50 percent of the building area, the building is assigned to Seismic Design Category C, D, E or F and the building’s structural system includes unreinforced masonry bearing walls, the alteration work shall include installation of wall anchors at the floor and roof lines, unless an evaluation demonstrates compliance of existing wall anchorage. Reduced seismic forces shall be permitted.

[BS] 503.10 Anchorage for unreinforced masonry partitions in major alterations. Where the work area exceeds 50 percent of the building area, and where the building is assigned to Seismic Design Category C, D, E or F, unreinforced masonry partitions and nonstructural walls within the work area and adjacent to egress paths from the work area shall be anchored, removed or altered to resist out-of-plane seismic forces, unless an evaluation demonstrates compliance of such items. Reduced seismic forces shall be permitted.

[BS] 503.11 Substantial structural alteration. Where the work area exceeds 50 percent of the building area and where work involves a substantial structural alteration, the lateral load-resisting system of the altered building shall satisfy the requirements of Sections 1609 and 1613 of the International Building Code. Reduced seismic forces shall be permitted.

Exceptions:

1. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes that are altered based on the conventional light-frame construction methods of the International Building Code or in compliance with the provisions of the International Residential Code.

2. Where the intended alteration involves only the lowest story of a building, only the lateral load-resisting components in and below that story need comply with this section.

[BS] 503.12 Roof diaphragme resisting wind loads in high-wind regions. Where the intended alteration requires a permit for reroofing and involves removal of roofing materials from more than 50 percent of the roof diaphragm of a building or section of a building located where the ultimate design wind speed is greater than 115 mph (51 m/s) in accordance with Figure 1609.3(1) of the International Building Code or in a special wind region as defined in Section 1609 of the International Building Code, roof diaphragme, connections of the roof diaphragm to roof framing members, and roof to wall connections shall be evaluated for the wind loads specified in Section 1609 of the International Building Code, including wind uplift. If the diaphragm and connections in their current condition are not capable of resisting 75 percent of those wind loads, they shall be replaced or strengthened in accordance with the loads specified in Section 1609 of the International Building Code.

[BS] 503.13 Voluntary lateral force resisting system alterations. Structural alterations that are intended exclusively to improve the lateral force resisting system and are not required by other sections of this code shall not be required to meet the requirements of Section 1609 or Section 1613 of the International Building Code, provided that all of the following apply:

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1. The capacity of existing structural systems to resist forces is not reduced.
2. New structural elements are detailed and connected to existing or new structural elements as required by the International Building Code for new construction.
3. New or relocated nonstructural elements are detailed and connected to existing or new structural elements as required by the International Building Code for new construction.
4. The alterations do not create a structural irregularity as defined in ASCE 7 or make an existing structural irregularity more severe.

503.14 Smoke alarms. Individual sleeping units and individual dwelling units in Group R and I-1 occupancies shall be provided with smoke alarms in accordance with Section 1103.8 of the International Fire Code.

503.15 Carbon monoxide alarms. Carbon monoxide alarms shall be provided to protect sleeping units and dwelling units in Group I-1, I-2, I-4 and R occupancies in accordance with Section 1103.9 of the International Fire Code.

Exceptions:

1. Work involving the exterior surfaces of buildings, such as the replacement of roofing or siding, the addition or replacement of windows or doors, or the addition of porches or decks.
2. Installation, alteration or repairs of plumbing or mechanical systems, other than fuel-burning appliances.

503.16 Refuge areas. Where alterations affect the configuration of an area utilized as a refuge area, the capacity of the refuge area shall not be reduced below that required in Sections 503.16.1 through 503.16.3.

503.16.1 Smoke compartments. In Group I-2 and I-3 occupancies, the required capacity of the refuge areas for smoke compartments in accordance with Sections 407.5.1 and 408.6.2 of the International Building Code shall be maintained.

503.16.2 Ambulatory care. In ambulatory care facilities required to be separated by Section 422.2 of the International Building Code, the required capacity of the refuge areas for smoke compartments in accordance with Section 422.3.2 of the International Building Code shall be maintained.

503.16.3 Horizontal exits. The required capacity of the refuge area for horizontal exits in accordance with Section 1026.4 of the International Building Code shall be maintained.

SECTION 505
WINDOWS AND EMERGENCY ESCAPE OPENINGS

505.1 Replacement glass. The installation or replacement of glass shall be as required for new installations.

505.2 Replacement window opening control devices. In Group R-2 or R-3 buildings containing dwelling units, and one- and two-family dwellings and townhouses regulated by the International Residential Code, window opening control devices complying with ASTM F2090 shall be installed where an existing window is replaced and where all of the following apply to the replacement window:

1. The window is operable.
2. The window replacement includes replacement of the sash and the frame.
3. One of the following applies:
   2.1. In Group R-2 or R-3 buildings containing dwelling units, the top of the sill of the window opening is at a height less than 36 inches (915 mm) above the finished floor.
   2.2. In one- and two-family dwellings and townhouses regulated by the International Residential Code, the top of the sill of the window opening is at a height less than 24 inches (610 mm) above the finished floor.
4. The window will permit openings that will allow passage of a 4-inch-diameter (102 mm) sphere when the window is in its largest opened position.
5. The vertical distance from the top of the sill of the window opening to the finished grade or other surface below, on the exterior of the building, is greater than 72 inches (1829 mm).

The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by Section 1030.2 of the International Building Code.

Exceptions:

1. Operable windows where the top of the sill of the window opening is located more than 75 feet (22 860 mm) above the finished grade or other surface below, on the exterior of the room, space or building, and that are provided with window fall prevention devices that comply with ASTM F2006.
2. Operable windows with openings that are provided with window fall prevention devices that comply with ASTM F2090.

505.3 Replacement window emergency escape and rescue openings. Where windows are required to provide emergency escape and rescue
openings in Group R-2 and R-3 occupancies and one- and two-family dwellings and townhouses regulated by the International Residential Code, replacement windows shall be exempt from the requirements of Sections 1030.2, 1030.3 and 1030.4 of the International Building Code and Sections R310.2.1, R310.2.2 and R310.2.3 of the International Residential Code, provided that the replacement window meets the following conditions:

1. The replacement window is the manufacturer’s largest standard size window that will fit within the existing frame or existing rough opening. The replacement window shall be permitted to be of the same operating style as the existing window or a style that provides for an equal or greater window opening area than the existing window.

2. The replacement of the window is not part of a change of occupancy.

Window opening control devices complying with ASTM F2090 shall be permitted for use on windows required to provide emergency escape and rescue openings.

506.4 Emergency escape and rescue openings. Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys or tools. Bars, grilles, grates or similar devices are permitted to be placed over emergency escape and rescue openings provided that the minimum net clear opening size complies with the code that was in effect at the time of construction and such devices shall be releasable or removable from the inside without the use of a key, tool or force greater than that which is required for normal operation of the escape and rescue opening. Where such bars, grilles, grates or similar devices are installed, they shall not reduce the net clear opening of the emergency escape and rescue openings. Smoke alarms shall be installed in accordance with Section 907.2.10 of the International Building Code regardless of the valuation of the alteration.

SECTION 506
CHANGE OF OCCUPANCY

506.1 Compliance. A change of occupancy shall not be made in any building unless that building is made to comply with the requirements of the International Building Code for the use or occupancy. Changes of occupancy in a building or portion thereof shall be such that the existing building is not less complying with the provisions of this code than the existing building or structure was prior to the change. Subject to the approval of the building official, changes of occupancy shall be permitted without complying with all of the requirements of this code for the new occupancy, provided that the new occupancy is less hazardous, based on life and fire risk, than the existing occupancy.

Exception: The building need not be made to comply with Chapter 16 of the International Building Code unless required by Section 506.4.

506.1.1 Change in the character of use. A change of occupancy with no change of occupancy classification shall not be made to any structure that will subject the structure to any special provisions of the applicable International Codes, without approval of the code official. Compliance shall be only as necessary to meet the specific provisions and is not intended to require the entire building be brought into compliance.

506.2 Certificate of occupancy. A certificate of occupancy shall be issued where it has been determined that the requirements for the new occupancy classification have been met.

506.3 Stairways. An existing stairway shall not be required to comply with the requirements of Section 1011 of the International Building Code where the existing space and construction does not allow a reduction in pitch or slope.

506.4 Structural. Any building undergoing a change of occupancy shall satisfy the requirements of this section.

506.4.1 Live loads. Structural elements carrying tributary live loads from an area with a change of occupancy shall satisfy the requirements of Section 1607 of the International Building Code. Design live loads for areas of new occupancy shall be based on Section 1607 of the International Building Code. Design live loads for other areas shall be permitted to use previously approved design live loads.

Exception: Structural elements whose demand-capacity ratio considering the change of occupancy is not more than 5 percent greater than the demand-capacity ratio based on previously approved live loads need not comply with this section.

506.4.2 Snow and wind loads. Where a change of occupancy results in a structure being assigned to a higher risk category, the structure shall satisfy the requirements of Sections 1608 and 1609 of the International Building Code for the new risk category.

Exception: Where the area of the new occupancy is less than 10 percent of the building area, compliance with this section is not required. The cumulative effect of occupancy changes over time shall be considered.

506.4.3 Seismic loads (seismic force-resisting system). Where a change of occupancy results in a building being assigned to a higher risk category, the building shall satisfy the requirements of Section 1613 of the International Building Code for the new risk category using full seismic forces.

Exceptions:

1. Where the area of the new occupancy is less than 10 percent of the building area and the new occupancy is not assigned to Risk Category IV, compliance with this section is not required. The cumulative effect of occupancy changes over time shall be considered.
2. Where a change of use results in a building being reclassified from Risk Category I or II to Risk Category III and the seismic coefficient, SDS, is less than 0.33, compliance with this section is not required.

3. Unreinforced masonry bearing wall buildings assigned to Risk Category III and to Seismic Design Category A or B, shall be permitted to use Appendix Chapter A1 of this code.

506.4.4 Access to Risk Category IV. Any structure that provides operational access to an adjacent structure assigned to Risk Category IV as the result of a change of occupancy shall itself satisfy the requirements of Sections 1608, 1609 and 1613 of the International Building Code. For compliance with Section 1613, International Building Code level seismic forces shall be used. Where operational access to the Risk Category IV structure is less than 10 feet (3048 mm) from either an interior lot line or from another structure, access protection from potential falling debris shall be provided.

SECTION 507
HISTORIC BUILDINGS

507.1 Historic buildings. The provisions of this code that require improvements relative to a building’s existing condition or, in the case of repairs, that require improvements relative to a building’s predamage condition, shall not be mandatory for historic buildings unless specifically required by this section.

507.2 Life-safety hazards. The provisions of this code shall apply to historic buildings judged by the building official to constitute a distinct life safety hazard.

[B] 507.3 Flood-hazard areas. Within flood-hazard areas established in accordance with Section 1612.3 of the International Building Code, or Section R132 of the International Residential Code, as applicable, where the work proposed constitutes substantial improvement, the building shall be brought into compliance with Section 1612 of the International Building Code, or Section R132 of the International Residential Code, as applicable.

Exception: Historic buildings meeting any of the following criteria need not be brought into compliance:

1. Listed or preliminarily determined to be eligible for listing in the National Register of Historic Places.
2. Determined by the Secretary of the U.S. Department of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined to qualify as an historic district.
3. Designated as historic under a state or local historic preservation program that is approved by the Department of Interior.

[B] 507.4 Structural. Historic buildings shall comply with the applicable structural provisions in this chapter.

Exceptions:

1. The code official shall be authorized to accept existing floors and existing live loads and to approve operational controls that limit the live load on any floor.
2. Repair of substantial structural damage is not required to comply with Sections 405.2.3 and 405.2.4. Substantial structural damage shall be repaired in accordance with Section 405.2.1.

CHAPTER 6 5 CLASSIFICATION OF WORK ALTERATIONS

Revise as follows:

SECTION 601 501
GENERAL

601.1 501.1 Scope. General. The provisions of this chapter shall be used in conjunction with Chapters 7 through 12 and shall apply to the alteration, addition or change of occupancy of existing structures, including historic and moved structures, as referenced in Section 301.3.2. The work performed on an existing building shall be classified in accordance with this chapter. Except as provided by Chapter 8 or this chapter, alterations to any building or structure shall comply with the requirements of the International Building Code for new construction. Alterations shall be such that the existing building or structure is no less conforming to the provisions of the International Building Code than the existing building or structure was prior to the alteration.

Exceptions:

1. An existing stairway shall not be required to comply with the requirements of Section 1011 of the International Building Code where the existing space and construction does not allow a reduction in pitch or slope.
2. Handrails otherwise required to comply with Section 1011.11 of the International Building Code shall not be required to comply with the requirements of Section 1014.6 of the International Building Code regarding full extension of the handrails where such extensions would be hazardous because of plan configuration.
3. Where provided in below-grade transportation stations, existing and new escalators shall have a clear width of less than 32
4. Where the current level of safety or sanitation is proposed to be reduced, the portion altered shall conform to the requirements of the International Building Code.

Delete without substitution:

601.1 Compliance with other alternatives. Alterations, additions and changes of occupancy to existing structures shall comply with the provisions of Chapters 7 through 12 or with one of the alternatives provided in Section 301.3.

Revise as follows:

601.2 Work area. The work area, as defined in Chapter 2, shall be identified on the construction documents.

Add new text as follows:

501.3 Levels of Alteration. Alterations to any existing building or structure shall be classified as the following:

Revise as follows:

601.3.1 Scope. Level 1. Level 1 alterations include the removal and replacement or the covering of existing materials, elements, equipment, or fixtures using new materials, elements, equipment, or fixtures that serve the same purpose.

601.3.1.1 Application. Level 1 alterations shall comply with the provisions of Chapter 7, Section 502.

601.3.2 Scope. Level 2. Level 2 alterations include the reconfiguration of space, the addition or elimination of any door or window, the reconfiguration or extension of any system, or the installation of any additional equipment.

601.3.2.1 Application. Level 2 alterations shall comply with the provisions of Chapter 7, Sections 502 and 503 for Level 1 alterations as well as the provisions of Chapter 8, Section 504.

601.3.3 Scope. Level 3. Level 3 alterations apply where the work area exceeds 50 percent of the building area.

601.3.3.1 Application. Level 3 alterations shall comply with the provisions of Chapters 7, Sections 502 and 503 for Level 1 and 2 alterations, respectively, as well as the provisions of Chapters 8, Sections 504.

701.4 Flood hazard areas. In flood hazard areas, alterations that constitute substantial improvement shall require that the building comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.

Add new text as follows:

501.6 Accessibility. Accessibility shall be provided in accordance with the applicable provisions of Section 305.

Revise as follows:

605.1 Scope. Change of occupancy. Change of occupancy provisions apply where the activity is classified as a change of occupancy as defined in Chapter 2.

605.1.1 Application. Changes of occupancy shall comply with the provisions of Chapter 40-6.

605.2 Scope. Additions. Provisions for additions shall apply where work is classified as an addition as defined in Chapter 2.

605.2.1 Application. Additions to existing buildings shall comply with the provisions of Chapter 44-7.

605.3 Scope. Historic Buildings. Historic building provisions shall apply to buildings classified as historic as defined in Chapter 2.

605.3.1 Application. Except as specifically provided for in Chapter 40, historic buildings shall comply with applicable provisions of this code for the type of work being performed.

605.4 Scope. Relocated buildings. Relocated building provisions shall apply to relocated or moved buildings.

605.4.1 Application. Relocated buildings shall comply with the provisions of Chapter 14, Chapter 10.

Delete without substitution:
CHAPTER 7 ALTERATIONS—LEVEL 1

Revise as follows:

SECTION 701 502
GENERAL ALTERATION—LEVEL 1

701.4 502.1 Scope. Level 1 alterations as described in Section 602 501.3.1 shall comply with the requirements of this chapter. Level 1 alterations to historic buildings shall comply with this chapter, except as modified in Chapter 48.

Delete without substitution:

701.2 Conformance. An existing building or portion thereof shall not be altered such that the building becomes less safe than its existing condition.

Exception: Where the current level of safety or sanitation is proposed to be reduced, the portion altered shall conform to the requirements of the International Building Code.

Revise as follows:

703.4 502.2 General. Fire Protection. Alterations shall be done in a manner that maintains the level of fire protection provided.

704.1 502.3 General. Means of Egress. Alterations shall be done in a manner that maintains the level of protection provided for the means of egress.

Add new text as follows:

502.4 Building elements and materials. Building elements and materials shall comply with the applicable provisions of Section 502.4.1 through 502.4.5.

Revise as follows:

702.4 502.4.1 Interior finishes. Newly installed interior wall and ceiling finishes shall comply with Chapter 8 of the International Building Code.

702.2 502.4.2 Interior floor finish. New interior floor finish, including new carpeting used as an interior floor finish material, shall comply with Section 804 of the International Building Code.

702.3 502.4.3 Interior trim. Newly installed interior trim materials shall comply with Section 806 of the International Building Code.

702.6 502.4.4 Materials and methods. New work shall comply with the materials and methods requirements in the International Building Code, International Energy Conservation Code, International Mechanical Code, and International Plumbing Code, as applicable, that specify material standards, detail of installation and connection, joints, penetrations, and continuity of any element, component, or system in the building.

[FG] 702.6.1 502.4.5 International Fuel Gas Code. The following sections of the International Fuel Gas Code shall constitute the fuel gas materials and methods requirements for Level 1 alterations.

1. Chapter 3, entitled “General Regulations,” except Sections 303.7 and 306.
2. Chapter 4, entitled “Gas Piping Installations,” except Sections 401.8 and 402.3.
   2.1. Sections 401.8 and 402.3 shall apply where the work being performed increases the load on the system such that the existing pipe does not meet the size required by code. Existing systems that are modified shall not require resizing as long as the load on the system is not increased and the system length is not increased even if the altered system does not meet code minimums.
3. Chapter 5, entitled “Chimneys and Vents.”
4. Chapter 6, entitled “Specific Appliances.”

Delete without substitution:

CHAPTER 8 ALTERATIONS—LEVEL 2

Add new text as follows:

SECTION 503
ALTERATIONS—LEVEL 2

Revise as follows:

801.4 503.1 Scope. Level 2 alterations as described in Section 602 501.3 shall comply with the requirements of this chapter.
Exception: Buildings in which the reconfiguration is exclusively the result of compliance with the accessibility requirements of Section 305.7 shall be permitted to comply with Chapter 7, Section 602.

**801.3 503.2 Alteration Level 1 compliance.** In addition to the requirements of this chapter, all work shall comply with the requirements of Chapter 7, Section 502.

**801.3 503.3 Compliance.** New construction elements, components, systems, and spaces shall comply with the requirements of the International Building Code.

**Exceptions:**

1. Where windows are added they are not required to comply with the light and ventilation requirements of the International Building Code.
2. Newly installed electrical equipment shall comply with the requirements of Section 807.
3. The length of dead-end corridors in newly constructed spaces shall only be required to comply with the provisions of Section 805.6.
4. The minimum ceiling height of the newly created habitable and occupiable spaces and corridors shall be 7 feet (2134 mm).
5. Where provided in below-grade transportation stations, existing and new escalators shall be permitted to have a clear width of less than 32 inches (815 mm).
6. New structural members and connections shall be permitted to comply with alternative design criteria in accordance with Section 302.

**802.1 503.4 Scope. Building elements and materials.** The requirements of this section are limited to work areas in which Level 2 alterations are being performed and shall apply beyond the work area where specified.

**802.2 503.4.1 Vertical openings.** Existing vertical openings shall comply with the provisions of Sections 802.2.1, 503.4.1.1, 802.2.2, 503.4.1.2, and 802.2.3, 503.4.1.3.

**802.2.1 503.4.1.1 Existing vertical openings.** Existing interior vertical openings connecting two or more floors shall be enclosed with approved assemblies having a fire-resistance rating of not less than 1 hour with approved opening protectives.

**Exceptions:**

1. Where vertical opening enclosure is not required by the International Building Code or the International Fire Code.
2. Interior vertical openings other than stairways may be blocked at the floor and ceiling of the work area by installation of not less than 2 inches (51 mm) of solid wood or equivalent construction.
3. The enclosure shall not be required where:
   3.1. Connecting the main floor and mezzanines; or
   3.2. All of the following conditions are met:
      3.2.1. The communicating area has a low-hazard occupancy or has a moderate-hazard occupancy that is protected throughout by an automatic sprinkler system.
      3.2.2. The lowest or next-to-the-lowest level is a street floor.
      3.2.3. The entire area is open and unobstructed in a manner such that it is reasonable to assume that a fire in any part of the interconnected spaces will be readily obvious to all of the occupants.
      3.2.4. Exit capacity is sufficient to provide egress simultaneously for all occupants of all levels by considering all areas to be a single floor area for the determination of required exit capacity.
      3.2.5. Each floor level, considered separately, has not less than one-half of its individual required exit capacity provided by an exit or exits leading directly out of that level without having to traverse another communicating floor level or be exposed to the smoke or fire spreading from another communicating floor level.
4. In Group A occupancies, a minimum 30-minute enclosure shall be provided to protect all vertical openings not exceeding three stories.
5. In Group B occupancies, a minimum 30-minute enclosure shall be provided to protect all vertical openings not exceeding three stories. This enclosure, or the enclosure specified in Section 802.2.1, 503.4.1.1, shall not be required in the following locations:
   5.1. Buildings not exceeding 3,000 square feet (279 m²) per floor.
   5.2. Buildings protected throughout by an approved automatic fire sprinkler system.
6. In Group E occupancies, the enclosure shall not be required for vertical openings not exceeding three stories where the building is protected throughout by an approved automatic fire sprinkler system.
7. In Group F occupancies, the enclosure shall not be required in the following locations:
   7.1. Vertical openings not exceeding three stories.
   7.2. Special-purpose occupancies where necessary for manufacturing operations and direct access is provided to not fewer than one protected stairway.
   7.3. Buildings protected throughout by an approved automatic fire sprinkler system.
8. In Group H occupancies, the enclosure shall not be required for vertical openings not exceeding three stories where necessary.
for manufacturing operations and every floor level has direct access to not fewer than two remote enclosed stairways or other approved exits.

9. In Group M occupancies, a minimum 30-minute enclosure shall be provided to protect all vertical openings not exceeding three stories. This enclosure, or the enclosure specified in Section 802.4.1.1, shall not be required in the following locations:
   9.1. Openings connecting only two floor levels.
   9.2. Occupancies protected throughout by an approved automatic sprinkler system.

10. In Group R-1 occupancies, the enclosure shall not be required for vertical openings not exceeding three stories in the following locations:
   10.1. Buildings protected throughout by an approved automatic sprinkler system.
   10.2. Buildings with less than 25 dwelling units or sleeping units where every sleeping room above the second floor is provided with direct access to a fire escape or other approved second exit by means of an approved exterior door or window having a sill height of not greater than 44 inches (1118 mm) and where both of the following conditions are met:
   10.2.1. Any exit access corridor exceeding 8 feet (2438 mm) in length that serves two means of egress, one of which is an unprotected vertical opening, shall have not fewer than one of the means of egress separated from the vertical opening by a 1-hour fire barrier.
   10.2.2. The building is protected throughout by an automatic fire alarm system, installed and supervised in accordance with the International Building Code.

11. In Group R-2 occupancies, a minimum 30-minute enclosure shall be provided to protect all vertical openings not exceeding three stories. This enclosure, or the enclosure specified in Section 802.4.1.1, shall not be required in the following locations:
   11.1. Vertical openings not exceeding two stories with not more than four dwelling units per floor.
   11.2. Buildings protected throughout by an approved automatic sprinkler system.
   11.3. Buildings with not more than four dwelling units per floor where every sleeping room above the second floor is provided with direct access to a fire escape or other approved second exit by means of an approved exterior door or window having a sill height of not greater than 44 inches (1118 mm) and the building is protected throughout by an automatic fire alarm system complying with Section 803.4.

12. One- and two-family dwellings.
13. Group S occupancies where connecting not more than two floor levels or where connecting not more than three floor levels and the structure is equipped throughout with an approved automatic sprinkler system.
14. Group S occupancies where vertical opening protection is not required for open parking garages and ramps.

802.2.5.1 802.3.1 802.4.4.1.2 Supplemental shaft and floor opening enclosure requirements. Where the work area on any floor exceeds 50 percent of that floor area, the enclosure requirements of Section 802.4.1 shall apply to vertical openings other than stairways throughout the floor.

Exception: Vertical openings located in tenant spaces that are entirely outside the work area.

802.4.4.1.3 Supplemental stairway enclosure requirements. Where the work area on any floor exceeds 50 percent of that floor area, stairways that are part of the means of egress serving the work area shall, at a minimum, be enclosed with smoke-tight construction on the highest work area floor and all floors below.

Exception: Where stairway enclosure is not required by the International Building Code or the International Fire Code.

802.4.2 Smoke compartments. In Group I-2 occupancies where the work area is on a story used for sleeping rooms for more than 30 patients, the story shall be divided into not less than two compartments by smoke barrier walls in accordance with Section 407.5 of the International Building Code as required for new construction.

802.4.3 Interior finish. The interior finish of walls and ceilings in exits and corridors in any work area shall comply with the requirements of the International Building Code.

Exception: Existing interior finish materials that do not comply with the interior finish requirements of the International Building Code shall be permitted to be treated with an approved fire-retardant coating in accordance with the manufacturer’s instructions to achieve the required rating.

802.4.4.1 503.4.3.1 Supplemental interior finish requirements. Where the work area on any floor exceeds 50 percent of the floor area, Section 802.4.3 shall apply to the interior finish in exits and corridors serving the work area throughout the floor.

Exception: Interior finish within tenant spaces that are entirely outside the work area.

802.5.4.4 Guards. The requirements of Sections 802.5.4.1 and 802.5.4.2 shall apply in all work areas.

802.5.4.4.1 Minimum requirement. Every portion of a floor, such as a balcony or a loading dock, that is more than 30 inches (762 mm) above the floor or grade below and is not provided with guards, or those in which the existing guards are judged to be in danger of collapsing, shall be provided with guards.

802.5.4.4.2 Design. Where there are no guards or where existing guards must be replaced, the guards shall be designed and installed in accordance with the International Building Code.
803.2.4 Fire-resistance ratings. Where approved by the code official, buildings where an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 of the International Building Code has been added, and the building is now sprinklered throughout, the required fire-resistance ratings of building elements and materials shall be permitted to meet the requirements of the current building code. The building is required to meet all of the applicable requirements of the International Building Code. Plans, investigation and evaluation reports, and other data shall be submitted indicating which building elements and materials the applicant is requesting the code official to review and approve for determination of applying the current building code fire-resistance ratings. Any special construction features, including fire-resistance-rated assemblies and smoke-resistive assemblies, conditions of occupancy, means-of-egress conditions, fire code deficiencies, approved modifications or approved alternative materials, design and methods of construction, and equipment applying to the building that impact required fire-resistance ratings shall be identified in the evaluation reports submitted.

803.5 Seepe: Fire Protection. The requirements of this section shall be limited to work areas in which Level 2 alterations are being performed, and where specified they shall apply throughout the floor on which the work areas are located or otherwise beyond the work area.

803.5.1 Corridor ratings. Where an approved automatic sprinkler system is installed throughout the story, the required fire-resistance rating for any corridor located on the story shall be permitted to be reduced in accordance with the International Building Code. In order to be considered for a corridor rating reduction, such system shall provide coverage for the stairway landings serving the floor and the intermediate landings immediately below.

803.2 Automatic sprinkler systems. Automatic sprinkler systems shall be provided in accordance with the requirements of Sections 803.2.1 through 803.2.4. Installation requirements shall be in accordance with the International Building Code.

803.2.1 High-rise buildings. In high-rise buildings, work areas that have exits or corridors shared by more than one tenant or that have exits or corridors serving an occupant load greater than 30 shall be provided with automatic sprinkler protection in the entire work area where the work area is located on a floor that has a sufficient sprinkler water supply system from an existing standpipe or a sprinkler riser serving that floor.

803.2.1.1 Supplemental automatic sprinkler system requirements. Where the work area on any floor exceeds 50 percent of that floor area, Section 803.2.1 shall apply to the entire floor on which the work area is located.

Exception: Occupied tenant spaces that are entirely outside the work area.

803.2.2 Groups A, B, E, F-1, H, I, M, R-1, R-2, R-4, S-1 and S-2. In buildings with occupancies in Groups A, B, E, F-1, H, I, M, R-1, R-2, R-4, S-1 and S-2, work areas that have exits or corridors shared by more than one tenant or that have exits or corridors serving an occupant load greater than 30 shall be provided with automatic sprinkler protection where both of the following conditions occur:

1. The work area is required to be provided with automatic sprinkler protection in accordance with the International Building Code as applicable to new construction.
2. The work area exceeds 50 percent of the floor area.

Exception: If the building does not have sufficient municipal water supply for design of a fire sprinkler system available to the floor without installation of a new fire pump, work areas shall be protected by an automatic smoke detection system throughout all occupable spaces other than sleeping units or individual dwelling units that activates the occupant notification system in accordance with Sections 907.4, 907.5 and 907.6 of the International Building Code.

803.2.2.1 Mixed uses. In work areas containing mixed uses, one or more of which requires automatic sprinkler protection in accordance with Section 803.2.2, such protection shall not be required throughout the work area provided that the uses requiring such protection are separated from those not requiring protection by fire-resistance-rated construction having a minimum 2-hour rating for Group H and a minimum 1-hour rating for all other occupancy groups.

803.2.3 Windowless stories. Work located in a windowless story, as determined in accordance with the International Building Code, shall be sprinklered where the work area is required to be sprinklered under the provisions of the International Building Code for newly constructed buildings and the building has a sufficient municipal water supply without installation of a new fire pump.

803.4 Supervision. Fire sprinkler systems required by this section shall be supervised by one of the following methods:

1. Approved central station system in accordance with NFPA 72.
2. Approved proprietary system in accordance with NFPA 72.
3. Approved remote station system of the jurisdiction in accordance with NFPA 72.
4. Where approved by the code official, approved local alarm service that will cause the sounding of an alarm in accordance with NFPA 72.

Exception: Supervision is not required for the following:

1. Underground gate valve with roadway boxes.
2. Halogenated extinguishing systems.
3. Carbon dioxide extinguishing systems.
4. Dry- and wet-chemical extinguishing systems.
5. Automatic sprinkler systems installed in accordance with NFPA 13R where a common supply main is used to supply both domestic and automatic sprinkler systems and a separate shutoff valve for the automatic sprinkler system is not provided.

803.3 503.5.3 Standpipes. Where the work area includes exits or corridors shared by more than one tenant and is located more than 50 feet (15 240 mm) above or below the lowest level of fire department access, a standpipe system shall be provided. Standpipes shall have an approved fire department connection with hose connections at each floor level above or below the lowest level of fire department access. Standpipe systems shall be installed in accordance with the International Building Code.

Exceptions:

1. A pump shall not be required provided that the standpipes are capable of accepting delivery by fire department apparatus of not less than 250 gallons per minute (gpm) at 65 pounds per square inch (psi) (946 L/m at 448KPa) to the topmost floor in buildings equipped throughout with an automatic sprinkler system or not less than 500 gpm at 65 psi (1892 L/m at 448KPa) to the topmost floor in all other buildings. Where the standpipe terminates below the topmost floor, the standpipe shall be designed to meet (gpm/psi) (L/m/KPa) requirements of this exception for possible future extension of the standpipe.
2. The interconnection of multiple standpipe risers shall not be required.

803.4 503.5.4 Fire alarm and detection. An approved fire alarm system shall be installed in accordance with Sections 803.4.1 through 803.5.4.3. Where automatic sprinkler protection is provided in accordance with Section 803.2 and is connected to the building fire alarm system, automatic heat detection shall not be required. An approved automatic fire detection system shall be installed in accordance with the provisions of this code and NFPA 72. Devices, combinations of devices, appliances, and equipment shall be approved. The automatic fire detectors shall be smoke detectors, except that an approved alternative type of detector shall be installed in spaces such as boiler rooms, where products of combustion are present during normal operation in sufficient quantity to actuate a smoke detector.

803.4.1 503.5.4.1 Occupancy requirements. A fire alarm system shall be installed in accordance with Sections 803.4.1 through 803.5.4.1.6. Existing alarm-notification appliances shall be automatically activated throughout the building. Where the building is not equipped with a fire alarm system, alarm-notification appliances within the work area shall be provided and automatically activated.

Exceptions:

1. Occupancies with an existing, previously approved fire alarm system.
2. Where selective notification is permitted, alarm-notification appliances shall be automatically activated in the areas selected.

803.4.1.1 503.5.4.1.1 Group E. A fire alarm system shall be installed in work areas of Group E occupancies as required by the International Fire Code for existing Group E occupancies.

803.4.1.2 503.5.4.1.2 Group I-1. A fire alarm system shall be installed in work areas of Group I-1 residential care/assisted living facilities as required by the International Fire Code for existing Group I-1 occupancies.

803.4.1.3 503.5.4.1.3 Group I-2. A fire alarm system shall be installed throughout Group I-2 occupancies as required by the International Fire Code.

803.4.1.4 503.5.4.1.4 Group I-3. A fire alarm system shall be installed in work areas of Group I-3 occupancies as required by the International Fire Code.

803.4.1.5 503.5.4.1.5 Group R-1. A fire alarm system shall be installed in Group R-1 occupancies as required by the International Fire Code for existing Group R-1 occupancies.

803.4.1.6 503.5.4.1.6 Group R-2. A fire alarm system shall be installed in work areas of Group R-2 apartment buildings as required by the International Fire Code for existing Group R-2 occupancies.

803.4.2 503.5.4.2 Supplemental fire alarm system requirements. Where the work area on any floor exceeds 50 percent of that floor area, Section 803.4.1.1 shall apply throughout the floor.

Exception: Alarm-initiating and notification appliances shall not be required to be installed in tenant spaces outside of the work area.

803.4.3 503.5.4.3 Smoke alarms. Individual sleeping units and individual dwelling units in any work area in Group R and I-1 occupancies shall be provided with smoke alarms in accordance with the International Fire Code.

Exception: Interconnection of smoke alarms outside of the work area shall not be required.

804.4 503.6 Carbon monoxide alarms. Any work area in Group I-1, I-2, I-4 and R occupancies shall be equipped with carbon monoxide alarms in accordance with Section 1103.9 of the International Fire Code.
Exceptions:

1. Work involving the exterior surfaces of buildings, such as the replacement of roofing or siding, the addition or replacement of windows or doors, or the addition of porches or decks.
2. Installation, alteration or repairs of plumbing or mechanical systems, other than fuel-burning appliances.

805.2 503.7 General. Means of egress. The means of egress shall comply with the requirements of this section. Section 503.7.

Exceptions:

1. Where the work area and the means of egress serving it complies with NFPA 101.
2. Means of egress complying with the requirements of the building code under which the building was constructed shall be considered to be compliant means of egress if, in the opinion of the code official, they do not constitute a distinct hazard to life.

805.3 503.7.1 Scope. General. The requirements of this section shall be limited to work areas that include exits or corridors shared by more than one tenant within the work area in which Level 2 alterations are being performed, and where specified they shall apply throughout the floor on which the work areas are located or otherwise beyond the work area.

805.3 503.7.2 Number of exits. The number of exits shall be in accordance with Sections 805.3.1-503.7.2.1 through 805.3.3-503.7.2.3.

805.3.4 503.7.2.1 Minimum number. Every story utilized for human occupancy on which there is a work area that includes exits or corridors shared by more than one tenant within the work area shall be provided with the minimum number of exits based on the occupancy and the occupant load in accordance with the International Building Code. In addition, the exits shall comply with Sections 805.3.1-503.7.2.1.1 and 805.3.1-503.7.2.1.2.

805.3.1-503.7.2.1.1 Single-exit buildings. A single exit or access to a single exit shall be permitted from spaces, any story or any occupied roof where one of the following conditions exists:

1. The occupant load, number of dwelling units and unit access travel distance do not exceed the values in Table 805.3.1.1-503.7.2.1.1 or 805.3.1.1-503.7.2.1.2.
2. In Group R-1 or R-2, nonsprinklered buildings, individual single-story or multiple-story dwelling or sleeping units shall be permitted to have a single exit or access to a single exit from the dwelling or sleeping unit provided one of the following criteria are met:
   2.1. The occupant load is not greater than 10 and the exit access travel distance within the unit does not exceed 75 feet (22 860 mm).
   2.2. The building is not more than three stories in height; all third-story space is part of dwelling with an exit access doorway on the second story; and the portion of the exit access travel distance from the door to any habitable room within any such unit to the unit entrance doors does not exceed 50 feet (15 240 mm).
3. In buildings of Group R-2 occupancy of any number of stories with not more than four dwelling units per floor served by an interior exit stairway; with a smokeproof enclosure in accordance with Sections 909.20 and 1023.11 of the International Building Code or an exterior stairway as an exit; and where the portion of the exit access travel distance from the dwelling unit entrance door to the exit is not greater than 20 feet (6096 mm).

<table>
<thead>
<tr>
<th>STORY</th>
<th>OCCUPANCY</th>
<th>MAXIMUM NUMBER OF DWELLING UNITS</th>
<th>MAXIMUM EXIT ACCESS TRAVEL DISTANCE (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basement, first or second story above grade plane</td>
<td>R-2a</td>
<td>4 dwelling units</td>
<td>50</td>
</tr>
<tr>
<td>Third story above grade plane and higher</td>
<td>NP</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

For SI: 1 foot = 304.8 mm.

NP = Not Permitted.

NA = Not Applicable.

a. Group R-2, nonsprinklered and provided with emergency escape and rescue openings in accordance with Section 1030 of the International Building Code.

<table>
<thead>
<tr>
<th>TABLE 805.3.1-503.7.2.1.1(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>STORY</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>Basement, first or second story above grade plane</td>
</tr>
<tr>
<td>Third story above grade plane and higher</td>
</tr>
</tbody>
</table>

For SI: 1 foot = 304.8 mm.

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a. Group R-2, nonsprinklered and provided with emergency escape and rescue openings in accordance with Section 1030 of the International Building Code.
<table>
<thead>
<tr>
<th>STORY</th>
<th>OCCUPANCY</th>
<th>MAXIMUM OCCUPANT LOAD PER STORY</th>
<th>MAXIMUM EXIT ACCESS TRAVEL DISTANCE (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First story above or below grade plane</td>
<td>B, F-2, S-2⁺</td>
<td>35</td>
<td>75</td>
</tr>
<tr>
<td>Second story above grade plane</td>
<td>B, F-2, S-2⁺</td>
<td>35</td>
<td>75</td>
</tr>
<tr>
<td>Third story above grade plane and higher</td>
<td>NP</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

For SI: 1 foot = 304.8 mm.

NP = Not Permitted.

NA = Not Applicable.

a. The length of exit access travel distance in a Group S-2 open parking garage shall be not more than 100 feet.

Delete without substitution:

805.3.1.2 Fire escapes required. For other than Group I-2, where more than one exit is required, an existing or newly constructed fire escape complying with Section 805.3.1.2.1 shall be accepted as providing one of the required means of egress.

805.3.1.2.1 Fire escape access and details. Fire escapes shall comply with all of the following requirements:

1. Occupants shall have unobstructed access to the fire escape without having to pass through a room subject to locking.

2. Access to a new fire escape shall be through a door, except that windows shall be permitted to provide access from single dwelling units or sleeping units in Group R-1, R-2 and I-1 occupancies or to provide access from spaces having a maximum occupant load of 10 in other occupancy classifications.

2.1. The window shall have a minimum net clear opening of 5.7 square feet (0.53 m²) or 5 square feet (0.46 m²) where located at grade.

2.2. The minimum net clear opening height shall be 24 inches (610 mm) and net clear opening width shall be 20 inches (508 mm).

2.3. The bottom of the clear opening shall not be greater than 44 inches (1118 mm) above the floor.

2.4. The operation of the window shall comply with the operational constraints of the International Building Code.

3. Newly constructed fire escapes shall be permitted only where exterior stairways cannot be utilized because of lot lines limiting the stairway size or because of the sidewalks, alleys, or roads at grade level.

4. Openings within 10 feet (3048 mm) of fire escape stairways shall be protected by fire assemblies having minimum 2½-hour fire-resistance ratings.

Exception: Opening protection shall not be required in buildings equipped throughout with an approved automatic sprinkler system.

805.3.3 Construction. The fire escape shall be designed to support a live load of 100 pounds per square foot (4788 Pa) and shall be constructed of steel or other approved noncombustible materials. Fire escapes constructed of wood not less than nominal 2 inches (51 mm) thick are permitted on buildings of Type V construction. Walkways and railings located over or supported by combustible roofs in buildings of Types III and IV construction are permitted to be of wood not less than nominal 2 inches (51 mm) thick.

805.3.1.2.3 Dimensions. Stairways shall be not less than 22 inches (559 mm) wide with risers not more than, and treads not less than, 8 inches (203 mm). Landings at the foot of stairways shall be not less than 40 inches (1016 mm) wide by 36 inches (914 mm) long and located not more than 8 inches (203 mm) below the door.

Revise as follows:

805.3.2 503.7.2.2 Mezzanines. Mezzanines in the work area and with an occupant load of more than 50 or in which the travel distance to an exit exceeds 75 feet (22 860 mm) shall have access to not fewer than two independent means of egress.

Exception: Two independent means of egress are not required where the travel distance to an exit does not exceed 100 feet (30 480 mm) and the building is protected throughout with an automatic sprinkler system.

805.3.3 503.7.2.3 Main entrance—Group A. Buildings of Group A with an occupant load of 300 or more shall be provided with a main entrance capable of serving as the main exit with an egress capacity of not less than one-half of the total occupant load. The remaining exits shall be capable
of providing one-half of the total required exit capacity.

Exception: Where a main exit is not well defined or where multiple main exits are provided, exits shall be permitted to be distributed around the perimeter of the building provided that the total width of egress is not less than 100 percent of the required width.

805.4 503.7.3 Egress doorways. Egress doorways in any work area shall comply with Sections 805.4.1-503.7.3.1 through 805.4.5-503.7.3.5.

805.4.1 503.7.3.1 Two egress doorways required. Work areas shall be provided with two egress doorways in accordance with the requirements of Sections 805.4.1.1-503.7.3.1.1 and 805.4.1.2-503.7.3.1.2.

805.4.1.1 503.7.3.1.1 Occupant load and travel distance. In any work area, all rooms and spaces having an occupant load greater than 50 or in which the travel distance to an exit exceeds 75 feet (22 860 mm) shall have not fewer than two egress doorways.

Exceptions:

1. Storage rooms having a maximum occupant load of 10.
2. Where the work area is served by a single exit in accordance with Section 805.3.1.1.

805.4.1.2 503.7.3.1.2 Group I-2. In buildings of Group I-2 occupancy, any patient sleeping room or suite of patient rooms greater than 1,000 square feet (93 m²) within the work area shall have not fewer than two egress doorways.

805.4.2 503.7.3.2 Door swing. In the work area and in the egress path from any work area to the exit discharge, all egress doors serving an occupant load greater than 50 shall swing in the direction of exit travel.

805.4.3 503.7.3.3 Door closing. In any work area, all doors opening onto an exit passageway at grade or an exit stairway shall be self-closing or automatic-closing by listed closing devices.

Exceptions:

1. Where exit enclosure is not required by the International Building Code.
2. Means of egress within or serving only a tenant space that is entirely outside the work area.

805.4.4 503.7.3.4 Panic hardware. In any work area, and in the egress path from any work area to the exit discharge, in buildings or portions thereof of Group A assembly occupancies with an occupant load greater than 100, all required exit doors equipped with latching devices shall be equipped with approved panic hardware.

805.4.5 503.7.3.4.1 Supplemental requirements for panic hardware. Where the work area exceeds 50 percent of the floor area, panic hardware shall comply with Section 805.4.4-503.7.3 throughout the floor.

Exception: Means of egress within a tenant space that is entirely outside the work area.

805.4.6 503.7.3.5 Emergency power source in Group I-3. Power operated sliding doors or power operated locks for swinging doors shall be operable by a manual release mechanism at the door. Emergency power shall be provided for the doors and locks in accordance with Section 2702 of the International Building Code.

Exceptions:

1. Emergency power is not required in facilities with 10 or fewer locks complying with the exception to Section 408.4.1 of the International Building Code.
2. Emergency power is not required where remote mechanical operating releases are provided.

805.5 503.7.4 Openings in corridor walls. Openings in corridor walls in any work area shall comply with Sections 805.5.1-503.7.4.1 through 805.5.4-503.7.4.4.

Exception: Openings in corridors where such corridors are not required to be rated in accordance with the International Building Code.

805.6 503.7.4.1 Corridor doors. Corridor doors in the work area shall not be constructed of hollow core wood and shall not contain louvers. Dwelling unit or sleeping unit corridor doors in work areas in buildings of Groups R-1, R-2, and I-1 shall be not less than 1⅞-inch (35 mm) solid core
wood or approved equivalent and shall not have any glass panels, other than approved wired glass or other approved glazing material in metal frames. Dwelling unit or sleeping unit corridor doors in work areas in buildings of Groups R-1, R-2, and I-1 shall be equipped with approved door closers. Replacement doors shall be 1\(\frac{3}{8}\)-inch (35 mm) solid bonded wood core or approved equivalent, unless the existing frame will accommodate only a 1\(\frac{3}{8}\)-inch (35 mm) door.

**Exceptions:**

1. Corridor doors within a dwelling unit or sleeping unit.
2. Existing doors meeting the requirements of Guidelines on Fire Ratings of Archaic Materials and Assemblies (IEBC Resource A) for a rating of 15 minutes or more shall be accepted as meeting the provisions of this requirement.
3. Existing doors in buildings protected throughout with an approved automatic sprinkler system shall be required only to resist smoke, be reasonably tight fitting, and shall not contain louvers.
4. In group homes with not more than 15 occupants and that are protected with an approved automatic detection system, closing devices are not required.
5. Door assemblies having a fire protection rating of not less than 20 minutes.

### 805.6.2 503.7.4.2 Transoms

In all buildings of Group I-1, I-2, R-1 and R-2 occupancies, all transoms in corridor walls in work areas shall be either glazed with \(\frac{1}{4}\)-inch (6.4 mm) wired glass set in metal frames or other glazing assemblies having a fire protection rating as required for the door and permanently secured in the closed position or sealed with materials consistent with the corridor construction.

### 805.6.3 503.7.4.3 Other corridor openings

In any work area, any other sash, grille, or opening in a corridor and any window in a corridor not opening to the outside air shall be sealed with materials consistent with the corridor construction.

### 805.6.4 503.7.4.4 Supplemental requirements for corridor openings

Where the work area on any floor exceeds 50 percent of the floor area, the requirements of Sections 805.5.1-503.7.4.1 through 805.5.9-503.7.4.3 shall apply throughout the floor.

### 805.6.5 503.7.5 Dead-end corridors

Dead-end corridors in any work area shall not exceed 35 feet (10 670 mm).

**Exceptions:**

1. Where dead-end corridors of greater length are permitted by the International Building Code.
2. In other than Group A and H occupancies, the maximum length of an existing dead-end corridor shall be 50 feet (15 240 mm) in buildings equipped throughout with an automatic fire alarm system installed in accordance with the International Building Code.
3. In other than Group A and H occupancies, the maximum length of an existing dead-end corridor shall be 70 feet (21 356 mm) in buildings equipped throughout with an automatic sprinkler system installed in accordance with the International Building Code.
4. In other than Group A and H occupancies, the maximum length of an existing, newly constructed, or extended dead-end corridor shall not exceed 50 feet (15 240 mm) on floors equipped with an automatic sprinkler system installed in accordance with the International Building Code.

### 805.7 503.7.6 Means-of-egress lighting

Means-of-egress lighting shall be in accordance with this section, as applicable.

### 805.7.1 503.7.6.1 Artificial lighting required

Means of egress in all work areas shall be provided with artificial lighting in accordance with the requirements of the International Building Code.

### 805.7.2 503.7.6.2 Supplemental requirements for means-of-egress lighting

Where the work area on any floor exceeds 50 percent of that floor area, means of egress throughout the floor shall comply with Section 805.7.1-503.7.6.1.

**Exception:** Means of egress within or serving only a tenant space that is entirely outside the work area.

### 805.8 503.7.7 Exit signs

Exit signs shall be in accordance with this section, as applicable.

### 805.8.1 503.7.7.1 Work areas

Means of egress in all work areas shall be provided with exit signs in accordance with the requirements of the International Building Code.

### 805.8.2 503.7.7.2 Supplemental requirements for exit signs

Where the work area on any floor exceeds 50 percent of that floor area, means of egress throughout the floor shall comply with Section 805.8.1-503.7.7.1.

**Exception:** Means of egress within a tenant space that is entirely outside the work area.

### 805.9 503.7.8 Handrails

The requirements of Sections 805.9-503.7.8.1 and 805.9-503.7.8.2 shall apply to handrails from the work area floor to, and including, the level of exit discharge.
**805.9.1 503.7.8.1 Minimum requirement.** Every required exit stairway that is part of the means of egress for any work area and that has three or more risers and is not provided with not fewer than one handrail, or in which the existing handrails are judged to be in danger of collapsing, shall be provided with handrails for the full length of the stairway on not fewer than one side. Exit stairways with a required egress width of more than 66 inches (1676 mm) shall have handrails on both sides.

**805.9.2 503.7.8.2 Design.** Handrails required in accordance with Section 805.9.1 shall be designed and installed in accordance with the provisions of the International Building Code.

**806.3 503.7.9.9 Refuge areas.** Where alterations affect the configuration of an area utilized as a refuge area, the capacity of the refuge area shall not be reduced below that required by Sections 805.10.1, 805.10.2, and 805.10.3.

**806.4 503.7.9.1 Capacity.** The required capacity of refuge areas shall be in accordance with Sections 805.10.1, 805.10.2, and 805.10.3.

**806.10.1 503.7.9.1.1 Group I-2.** In Group I-2 occupancies, the required capacity of the refuge areas for smoke compartments in accordance with Section 407.5.1 of the International Building Code shall be maintained.

**806.10.1.2 503.7.9.1.2 Group I-3.** In Group I-3 occupancies, the required capacity of the refuge areas for smoke compartments in accordance with Section 408.6.2 of the International Building Code shall be maintained.

**806.10.3.3 503.7.9.1.3 Ambulatory care.** In ambulatory care facilities required to be separated by Section 422.2 of the International Building Code, the required capacity of the refuge areas for smoke compartments in accordance with Section 422.3.2 of the International Building Code shall be maintained.

**806.10.2 503.7.9.2 Horizontal exits.** The required capacity of the refuge area for horizontal exits in accordance with Section 1026.4 of the International Building Code shall be maintained.

**806.14 503.7.10 Guards.** The requirements of Sections 806.11.1 and 806.11.2 shall apply to guards from the work area floor to, and including, the level of exit discharge but shall be confined to the egress path of any work area.

**806.11.1 503.7.10.1 Minimum requirement.** Every open portion of a stairway, landing, or balcony that is more than 30 inches (762 mm) above the floor or grade below and is not provided with guards, or those portions in which existing guards are judged to be in danger of collapsing, shall be provided with guards.

**806.11.2 503.7.10.2 Design.** Guards required in accordance with Section 806.11.1 shall be designed and installed in accordance with the International Building Code.

**[BS] 806.1 503.8 General Structural.** Structural elements and systems within buildings undergoing Level 2 alterations shall comply with this section, Sections 3.8.1 through 503.8.3.

**[BS] 806.2 503.8.1 Existing structural elements carrying gravity loads.** Any existing gravity load-carrying structural element for which an alteration causes an increase in design dead, live or snow load, including snow drift effects, of more than 5 percent shall be replaced or altered as needed to carry the gravity loads required by the International Building Code for new structures. Any existing gravity load-carrying structural element whose gravity load-carrying capacity is decreased as part of the alteration shall be shown to have the capacity to resist the applicable design dead, live and snow loads, including snow drift effects, required by the International Building Code for new structures.

**Exceptions:**

1. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the altered building complies with the conventional light-frame construction methods of the International Building Code or the provisions of the International Residential Code.

2. Buildings in which the increased dead load is attributable to the addition of a second layer of roof covering weighing 3 pounds per square foot (0.1437 kN/m²) or less over an existing single layer of roof covering.

**[BS] 806.3 503.8.2 Existing structural elements resisting lateral loads.** Except as permitted by Section 806.4, where the alteration increases design lateral loads, or where the alteration results in prohibited structural irregularity as defined in ASCE 7, or where the alteration decreases the capacity of any existing lateral load-carrying structural element, the structure of the altered building or structure shall meet the requirements of Sections 1609 and 1613 of the International Building Code. Reduced seismic forces shall be permitted.

**Exception:** Any existing lateral load-carrying structural element whose demand-capacity ratio with the alteration considered is not more than 10 percent greater than its demand-capacity ratio with the alteration ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces in accordance with Sections 1609 and 1613 of the International Building Code. Reduced seismic forces shall be permitted. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces and capacities shall account for the cumulative effects of additions and alterations since original construction.
[BS] 806.4 503.8.3 Voluntary lateral force-resisting system alterations. Structural alterations that are intended exclusively to improve the lateral force-resisting system and are not required by other sections of this code shall not be required to meet the requirements of Section 1609 or Section 1613 of the International Building Code, provided that the following conditions are met:

1. The capacity of existing structural systems to resist forces is not reduced.
2. New structural elements are detailed and connected to existing or new structural elements as required by the International Building Code for new construction.
3. New or relocated nonstructural elements are detailed and connected to existing or new structural elements as required by the International Building Code for new construction.
4. The alterations do not create a structural irregularity as defined in ASCE 7 or make an existing structural irregularity more severe.

Add new text as follows:

503.9 Electrical Electrical elements and systems within a building undergoing Level 2 alterations shall comply with Section 503.9.1 through 503.9.3.

Revise as follows:

807-1 503.9.1 New installations. Newly installed electrical equipment and wiring relating to work done in any work area shall comply with all applicable requirements of NFPA 70 except as provided for in Section 807-3-503.9.3.

807-2 503.9.2 Existing installations. Existing wiring in all work areas in Group A-1, A-2, A-5, H and I occupancies shall be upgraded to meet the materials and methods requirements of Chapter 7, Section 502.

807-3 503.9.3 Residential occupancies. In Group R-2, R-3 and R-4 occupancies and buildings regulated by the International Residential Code, the requirements of Sections 807.2.1-503.9.3.1 through 807.2.7-503.9.3.7 shall be applicable only to work areas located within a dwelling unit.

807-3.1 503.9.3.1 Enclosed areas. Enclosed areas, other than closets, kitchens, basements, garages, hallways, laundry areas, utility areas, storage areas and bathrooms shall have not fewer than two duplex receptacle outlets or one duplex receptacle outlet and one ceiling or wall-type lighting outlet.

807-3.2 503.9.3.2 Kitchens. Kitchen areas shall have not fewer than two duplex receptacle outlets.

807-3.3 503.9.3.3 Laundry areas. Laundry areas shall have not fewer than one duplex receptacle outlet located near the laundry equipment and installed on an independent circuit.

807-3.4 503.9.3.4 Ground fault circuit interruption. Newly installed receptacle outlets shall be provided with ground fault circuit interruption as required by NFPA 70.

807-3.6 503.9.3.5 Minimum lighting outlets. Not fewer than one lighting outlet shall be provided in every bathroom, hallway, stairway, attached garage, and detached garage with electric power, and to illuminate outdoor entrances and exits.

807-3.6 503.9.3.6 Utility rooms and basements. Not fewer than one lighting outlet shall be provided in utility rooms and basements where such spaces are used for storage or contain equipment requiring service.

807-3.7 503.9.3.7 Clearance for equipment. Clearance for electrical service equipment shall be provided in accordance with the NFPA 70.

808-1 503.10 Reconfigured or converted spaces. Mechanical. Reconfigured spaces intended for occupancy and spaces converted to habitable or occupiable space in any work area shall be provided with natural or mechanical ventilation in accordance with the International Mechanical Code.

Exception: Existing mechanical ventilation systems shall comply with the requirements of Section 808.2-503.10.1.

808-2 503.10.1 Altered existing systems. In mechanically ventilated spaces, existing mechanical ventilation systems that are altered, reconfigured, or extended shall provide not less than 5 cubic feet per minute (cfm) (0.0024 m$^3$/s) per person of outdoor air and not less than 15 cfm (0.0071 m$^3$/s) of ventilation air per person; or not less than the amount of ventilation air determined by the Indoor Air Quality Procedure of ASHRAE 62.1.

808-3 503.10.2 Local exhaust. Newly introduced devices, equipment, or operations that produce airborne particulate matter, odors, fumes, vapor, combustion products, gaseous contaminants, pathogenic and allergenic organisms, and microbial contaminants in such quantities as to affect adversely or impair health or cause discomfort to occupants shall be provided with local exhaust.

809-1 503.10.2 Minimum fixtures. Plumbing. Where the occupant load of the story is increased by more than 20 percent, plumbing fixtures for the story shall be provided in quantities specified in the International Plumbing Code based on the increased occupant load.

Delete without substitution:

CHAPTER 9 ALTERATIONS—LEVEL 3
SECTION 504
ALTERATION-LEVEL 3

Revise as follows:

901.1 Scope. Level 3 alterations as described in Section 604.501.3 shall comply with the requirements of this chapter.

904.2 Alteration Level 1 and 2 Compliance. In addition to the provisions of this chapter, work shall comply with all of the requirements of Chapters 7 and 8. The requirements of Sections 604.503.4 and 604.503.5. and 604.503.6 shall apply within all work areas whether or not they include exits and corridors shared by more than one tenant and regardless of the occupant load.

Exception: Buildings in which the reconfiguration of space affecting exits or shared egress access is exclusively the result of compliance with the accessibility requirements of Section 305.7 shall not be required to comply with this chapter.

Add new text as follows:

504.3 Special Use and Occupancy The following special uses and occupancies shall comply with the requirements of Sections 604.3.1 and 604.3.2.

Revise as follows:

902.1.1 Recirculating air or exhaust systems. Where a floor is served by a recirculating air or exhaust system with a capacity greater than 15,000 cubic feet per minute (701 m³/s), that system shall be equipped with approved smoke and heat detection devices installed in accordance with the International Mechanical Code.

902.1.2 Elevators. Where there is an elevator or elevators for public use, not fewer than one elevator serving the work area shall comply with this section. Existing elevators with a travel distance of 25 feet (7620 mm) or more above or below the main floor or other level of a building and intended to serve the needs of emergency personnel for fire-fighting or rescue purposes shall be provided with emergency operation in accordance with ASME A17.3. New elevators shall be provided with Phase I emergency recall operation and Phase II emergency in-car operation in accordance with ASME A17.1/CSA B44.1.

902.2 Boiler and furnace equipment rooms. Boiler and furnace equipment rooms adjacent to or within Group I-1, I-2, I-4, R-1, R-2 and R-4 occupancies shall be enclosed by 1-hour fire-resistance-rated construction.

Exceptions:

1. Steam boiler equipment operating at pressures of 15 pounds per square inch gauge (psig) (103.4 kPa) or less is not required to be enclosed.
2. Hot water boilers operating at pressures of 170 psig (1171 kPa) or less are not required to be enclosed.
3. Furnace and boiler equipment with 400,000 British thermal units (Btu) (4.22×108 J) per hour input rating or less is not required to be enclosed.
4. Furnace rooms protected with an automatic sprinkler system are not required to be enclosed.

Add new text as follows:

504.4 Building elements and materials. Building elements and materials shall comply with the requirements of Section 503.4 except as specifically required in Sections 504.4.1 through 504.4.3.

Revise as follows:

903.4 Existing shafts and vertical openings. Existing stairways that are part of the means of egress shall be enclosed in accordance with Section 602.2.1.1 from the highest work area floor to, and including, the level of exit discharge and all floors below.

903.2.4 Fire partitions in Group R-3. Fire separation in Group R-3 occupancies shall be in accordance with Section 903.2.1.

903.4.2.1 Separation required. Where the work area is in any attached dwelling unit in Group R-3 or any multiple single-family dwelling (townhouse), walls separating the dwelling units that are not continuous from the foundation to the underside of the roof sheathing shall be constructed to provide a continuous fire separation using construction materials consistent with the existing wall or complying with the requirements for new structures. Work shall be performed on the side of the dwelling unit wall that is part of the work area.

Exception: Where alterations or repairs do not result in the removal of wall or ceiling finishes exposing the structure, walls are not required to be
continuous through concealed floor spaces.

903.4.3 Interior finish. Interior finish in exits serving the work area shall comply with Section 902.4.503.4.3 between the highest floor on which there is a work area to the floor of exit discharge.

Add new text as follows:

504.5 Fire Protection. Fire protection shall comply with the requirements of Section 503.5 except as specifically required in Sections 504.5.1 through 504.5.3

Revise as follows:

904.4 504.5.1 Automatic sprinkler systems. An automatic sprinkler system shall be provided in a work area where required by Section 902.904.1.1 or this section.

904.4.1 504.5.1.1 High-rise buildings. An automatic sprinkler system shall be provided in work areas where the high-rise building has a sufficient municipal water supply for the design and installation of an automatic sprinkler system at the site.

904.4.2 504.5.1.2 Rubbish and linen chutes. Rubbish and linen chutes located in the work area shall be provided with automatic sprinkler system protection or an approved automatic fire-extinguishing system where protection of the rubbish and linen chute would be required under the provisions of the International Building Code for new construction.

904.4.3 504.5.1.3 Upholstered furniture or mattresses. Work areas shall be provided with an automatic sprinkler system in accordance with the International Building Code where any of the following conditions exist:

1. A Group F-1 occupancy used for the manufacture of upholstered furniture or mattresses exceeds 2,500 square feet (232 m²).
2. A Group M occupancy used for the display and sale of upholstered furniture or mattresses exceeds 5,000 square feet (464 m²).
3. A Group S-1 occupancy used for the storage of upholstered furniture or mattresses exceeds 2,500 square feet (232 m²).

904.4.4 504.5.1.4 Other required automatic sprinkler systems. In buildings and areas listed in Table 903.2.11.6 of the International Building Code, work areas that have exits or corridors shared by more than one tenant or that have exits or corridors serving an occupant load greater than 30 shall be provided with an automatic sprinkler system under the following conditions:

1. The work area is required to be provided with an automatic sprinkler system in accordance with the International Building Code applicable to new construction.
2. The building site has sufficient municipal water supply for design and installation of an automatic sprinkler system.

904.2 504.5.2 Fire alarm and detection systems. Fire alarm and detection shall be provided in accordance with Section 907 of the International Building Code as required for new construction.

904.2.1 504.5.2.1 Manual fire alarm systems. Where required by the International Building Code, a manual fire alarm system shall be provided throughout the work area. Alarm notification appliances shall be provided on such floors and shall be automatically activated as required by the International Building Code.

Exceptions:

1. Alarm-initiating and notification appliances shall not be required to be installed in tenant spaces outside of the work area.
2. Visual alarm notification appliances are not required, except where an existing alarm system is upgraded or replaced or where a new fire alarm system is installed.

904.2.2 504.5.2.2 Automatic fire detection. Where required by the International Building Code for new buildings, automatic fire detection systems shall be provided throughout the work area.

504.6 General. Means of Egress. The means of egress shall comply with the requirements of Section 504.6.1 except as specifically required in Sections 504.6.1.1 and 504.6.2

504.6.1 Means-of-egress lighting. Means of egress from the highest work area floor to the floor of exit discharge shall be provided with artificial lighting within the exit enclosure in accordance with the requirements of the International Building Code.

504.6.2 Exit signs. Means of egress from the highest work area floor to the floor of exit discharge shall be provided with exit signs in accordance with the requirements of the International Building Code.

[BS] 904.7 General. Where buildings are undergoing Level 3 alterations, the provisions of this section shall apply.

[BS] 504.7.1 Existing structural elements resisting lateral loads. Where work involves a substantial structural alteration, the lateral load-resisting system of the altered building shall be shown to satisfy the requirements of Sections 1609 and 1613 of the International Building Code.
Reduced seismic forces shall be permitted.

**Exceptions:**

1. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes that are altered based on the conventional light-frame construction methods of the International Building Code or in compliance with the provisions of the International Residential Code.
2. Where the intended alteration involves only the lowest story of a building, only the lateral load resisting components in and below that story need comply with this section.

**[BS] 906.3 504.7.2 Seismic Design Category F.** Where the building is assigned to Seismic Design Category F, the structure of the altered building shall meet the requirements of Sections 1609 and 1613 of the International Building Code. Reduced seismic forces shall be permitted.

**[BS] 906.4 504.7.3 Anchorage for concrete and masonry buildings.** For any building assigned to Seismic Design Category D, E or F with a structural system that includes concrete or reinforced masonry walls with a flexible roof diaphragm, the alteration work shall include installation of wall anchors at the roof line of all subject buildings and at the floor lines of unreinforced masonry buildings unless an evaluation demonstrates compliance of existing wall anchorage. Reduced seismic forces shall be permitted.

**[BS] 906.5 504.7.4 Anchorage for unreinforced masonry walls.** For any building assigned to Seismic Design Category C, D, E or F with a structural system that includes unreinforced masonry bearing walls, the alteration work shall include installation of wall anchors at the roof line, unless an evaluation demonstrates compliance of existing wall anchorage. Reduced seismic forces shall be permitted.

**[BS] 906.6 504.7.5 Bracing for unreinforced masonry parapets.** Parapets constructed of unreinforced masonry in buildings assigned to Seismic Design Category C, D, E or F shall have bracing installed as needed to resist the reduced International Building Code -level seismic forces in accordance with Section 303.3, unless an evaluation demonstrates compliance of such items. Use of reduced seismic forces shall be permitted.

**[BS] 906.7 504.7.6 Anchorage of unreinforced masonry parapets.** Where the building is assigned to Seismic Design Category C, D, E or F, unreinforced masonry parapets and nonstructural walls within the work area and adjacent to egress paths from the work area shall be anchored, removed, or altered to resist out-of-plane seismic forces, unless an evaluation demonstrates compliance of such items. Use of reduced seismic forces shall be permitted.

### CHAPTER 10 CHANGE OF OCCUPANCY

**Revise as follows:**

**401.2.4 601.2.1 Change of use.** Any work undertaken in connection with a change in use that does not involve a change of occupancy classification or a change to another group within an occupancy classification shall conform to the applicable requirements for the work as classified in Chapter 5, Section 501 and to the requirements of Sections 4002 through 4040. 610.

**Exception: As modified in Section 404. 804 for historic buildings.**

**401.1.1.1 611.1.1 Change of occupancy classification without separation.** Where a portion of an existing building is changed to a new occupancy classification or where there is a change of occupancy within a space where there is a different fire protection system threshold requirement in Chapter 9 of the International Building Code, and that portion is not separated from the remainder of the building with fire barriers having a fire-resistance rating as required in the International Building Code for the separate occupancy, the entire building shall comply with all of the requirements of Chapter 9 of Section 504 of this code applied throughout the building for the most restrictive occupancy classification in the building and with the requirements of this chapter.

**401.1.1.2 611.1.2 Change of occupancy classification with separation.** Where a portion of an existing building is changed to a new occupancy classification or where there is a change of occupancy within a space where there is a different fire protection system threshold requirement in Chapter 9 of the International Building Code, and that portion is separated from the remainder of the building with fire barriers having a fire-resistance rating as required in the International Building Code for the separate occupancy, that portion shall comply with all of the requirements of Chapter 9 of Section 504 of this code for the new occupancy classification and with the requirements of this chapter.

**401.4.4 611.4.1 Means of egress for change to a higher-hazard category.** Where a change of occupancy classification is made to a higher-hazard category (lower number) as shown in Table 401.4.611.4, the means of egress shall comply with the requirements of Chapter 10 of the International Building Code.

**Exceptions:**

1. Stairways shall be enclosed in compliance with the applicable provisions of Section 909.4. 504.4.1.
2. Existing stairways including handrails and guards complying with the requirements of Chapter 5, Section 504 shall be permitted for continued use subject to approval of the code official.
3. Any stairway replacing an existing stairway within a space where the pitch or slope cannot be reduced because of existing construction shall not be required to comply with the maximum riser height and minimum tread depth requirements.
4. Existing corridor walls constructed on both sides of wood lath and plaster in good condition or 1/2 inch-thick (12.7 mm) gypsum wallboard shall be permitted. Such walls shall either terminate at the underside of a ceiling of equivalent construction or extend to the underside of the floor or roof next above.

5. Existing corridor doorways, transoms and other corridor openings shall comply with the requirements in Sections 805.5.1, 805.5.2, 503.7.4.1 and 503.7.4.2 and 805.5.3, 503.7.4.3.

6. Existing dead-end corridors shall comply with the requirements in Section 805.6, 503.7.5.

7. An existing operable window with clear opening area not less than 4 square feet (0.38 m²) and minimum opening height and width of 22 inches (559 mm) and 20 inches (508 mm), respectively, shall be accepted as an emergency escape and rescue opening.

4011.4.4 611.4.4 Handrails. Existing stairways shall comply with the handrail requirements of Section 805.9, 503.7.8 in the area of the change of occupancy classification.

4011.4.5 611.4.5 Guards. Existing guards shall comply with the requirements in Section 805.11, 503.7.10 in the area of the change of occupancy classification.

CHAPTER 12 ADDITIONS

Revise as follows:

4104.3 701.3 Other work. Any repair or alteration work within an existing building to which an addition is being made shall comply with the applicable requirements for the work as classified in Chapter 6.5.

[BS] 4105.1 Additional gravity loads. Any existing gravity load-carrying structural element for which an addition and its related alterations cause an increase in design dead, live or snow load, including snow drift effects, of more than 5 percent shall be replaced or altered as needed to carry the gravity loads required by the International Building Code for new structures. Any existing gravity load-carrying structural element whose gravity load-carrying capacity is decreased as part of the addition and its related alterations shall be considered to be an altered element subject to the requirements of Section 806.2, 503.6.1. Any existing element that will form part of the lateral load path for any part of the addition shall be considered to be an existing lateral load-carrying structural element subject to the requirements of Section 4103.3, 703.3.

Exception: Buildings of Group R occupancy with not more than five dwelling units or sleeping units used solely for residential purposes where the existing building and the addition together comply with the conventional lightframe construction methods of the International Building Code or the provisions of the International Residential Code.

CHAPTER 13 HISTORIC BUILDINGS

Revise as follows:

4203.10.1 803.10.1 Height. Existing guards shall comply with the requirements of Section 704, 502.3.

4204.1 804.1 General. Historic buildings undergoing a change of occupancy shall comply with the applicable provisions of Chapter 10, except as specifically permitted in this chapter. Where Chapter 10 requires compliance with specific requirements of Chapter 7, Chapter 8 or Chapter 9 and where those requirements are subject to the exceptions in Section 4203, 802, the same exceptions shall apply to this section.

4204.3 804.3 Location on property. Historic structures undergoing a change of use to a higher-hazard category in accordance with Section 4201.6, 611.6 may use alternative methods to comply with the fire-resistance and exterior opening protective requirements. Such alternatives shall comply with Section 4201.2.

4204.14 804.14 Natural light. Where it is determined by the code official that compliance with the natural light requirements of Section 4201.1, 610.1 will lead to loss of historic character or historic materials in the building, the existing level of natural lighting shall be considered to be acceptable.

CHAPTER 14 PERFORMANCE COMPLIANCE METHODS

CHAPTER 14.10 RELOCATED OR MOVED BUILDINGS

CHAPTER 15.11 CONSTRUCTION SAFEGUARDS

CHAPTER 16.12 REFERENCED STANDARDS

Reason: This proposal reformats the majority of the code to basically eliminate the need for the three (3) main compliance methods (Prescriptive, Work Area, and Performance) by eliminating the prescriptive method and restructuring the Work Area Method. In so doing, we are able to reduce the number of chapters from 16 to 12. Why does there need to be three different ways to do: Repairs, Alterations, Change of Occupancy, and Additions?

In addition, the reformat moves Fire Escapes, Glass Replacement and Window Replacement, and Reroofing and Repairs into Chapter 3. Why should we debate over whether a roof replacement is a repair or an alteration? Why do we need to duplicate the same text in multiple chapters?
Worse – in some sections the text is repeated across different chapters, but not exactly the same text (even though the intent was to be the same).

With the above in mind, the reformatting goes like this:

**Chapter 1 SCOPE AND ADMINISTRATION:** Remains the same

**Chapter 2 DEFINITIONS:** Remains the same

**Chapter 3 GENERAL PROVISIONS AND SPECIAL DETAILED REQUIREMENTS:** Currently “PROVISIONS FOR ALL COMPLIANCE METHODS”, proposal to rename this chapter to “GENERAL PROVISIONS AND SPECIAL DETAILED REQUIREMENTS”

This is like Chapter 4 in the IBC where there may be “special” construction that may need additional requirements to those elsewhere in the code. This is serving the same purpose as the original Chapter 3 of the IEBC where conditions that apply to ALL compliance methods would appear here. Fire escapes, glass replacement and window openings, and reroofing and roof repair have been relocated here. Seismic force and Accessibility were already located in this Chapter.

**Chapter 4 REPAIRS:** Remain the same

**Chapter 5 PRESCRIPTIVE METHOD.** Deleted title and contents

**New Chapter 5 ALTERATIONS** revised from current title “CLASSIFICATION OF WORK”

All things “alterations” have been located here. The chapter is made from the work area compliance methods (IEBC Chapters 6, 7, 8, and 9) and portions of Chapter 5.

**Chapter 6 CHANGE OF OCCUPANCY:** Currently “PRESCRIPTIVE COMPLIANCE METHODS”, proposal to rename this chapter and relocate all content of Chapter 10 CHANGE OF OCCUPANCY to Chapter 6 due to the reformat of Chapters 6, 7, 8, and 9 into a new Chapter 5

**Chapter 7 ADDITIONS:** Currently “ALTERATIONS-LEVEL 1”, proposal to rename this chapter and relocate all content of Chapter 11 ADDITIONS to Chapter 7 due to the reformat of Chapters 6, 7, 8, and 9 into a new Chapter 5.

**Chapter 8 HISTORIC BUILDINGS:** Currently “ALTERATIONS-LEVEL 2”, proposal to rename this chapter and relocate all content of Chapter 12 HISTORIC BUILDINGS to Chapter 8 due to the reformat of Chapters 6, 7, 8, and 9 into a new Chapter 5.

**Chapter 9 PERFORMANCE COMPLIANCE METHODS:** Currently “ALTERATIONS-LEVEL 3”, proposal to rename this chapter and relocate all content of Chapter 13 PERFORMANCE COMPLIANCE METHODS to Chapter 9 due to the reformat of Chapters 6, 7, 8, and 9 into a new Chapter 5.

**Chapter 10 RELOCATED OR MOVED BUILDINGS:** Currently “CHANGE OF OCCUPANCY”, proposal to rename this chapter and relocate all content of Chapter 14 RELOCATED OR MOVED BUILDINGS to Chapter 10 due to the reformat of Chapters 6, 7, 8, and 9 into a new Chapter 5.

**Chapter 11 CONSTRUCTION SAFEGUARDS:** Currently “ADDITIONS”, proposal to rename this chapter and relocate all content of Chapter 15 CONSTRUCTION SAFEGUARDS to Chapter 11 due to the reformat of Chapters 6, 7, 8, and 9 into a new Chapter 5.

**Chapter 12 REFERENCED STANDARDS:** Currently “HISTORIC BUILDINGS”, proposal to rename this chapter and relocate all content of Chapter 16 REFERENCED STANDARDS to Chapter 12 due to the reformat of Chapters 6, 7, 8, and 9 into a new Chapter 5.

**Cost Impact:** The code change proposal will not increase or decrease the cost of construction. This change is to reformat the code to be easier to use. It should not increase or decrease the cost of construction.

**Staff Analysis:** Please note for clarity the intended layout of Chapters is as follows:

Chapter 1 SCOPE AND ADMINISTRATION:

Chapter 2 DEFINITIONS:

Chapter 3 GENERAL PROVISIONS AND SPECIAL DETAILED REQUIREMENTS

Chapter 4 REPAIRS

Chapter 5 ALTERATIONS
CHAPTER 6 CLASSIFICATION OF WORK ALTERATIONS (Contains current Chapters 6, 7, 8 and 9)

CHAPTER 7 ALTERATIONS LEVEL 1

CHAPTER 8 ALTERATIONS LEVEL 2

CHAPTER 9 ALTERATION LEVEL 3

Chapter 49.6 CHANGE OF OCCUPANCY

Chapter 49.7 ADDITIONS

Chapter 49.8 HISTORIC BUILDINGS

Chapter 49.9 PERFORMANCE COMPLIANCE METHODS

Chapter 49.10 RELOCATED OR MOVED BUILDINGS

Chapter 49.11 CONSTRUCTION SAFEGUARDS

Chapter 49.12 REFERENCED STANDARDS

Proposal #: 5230
EB5-19

IEBC®: SECTION 305, 305.1, 305.2, 305.3, 305.4, 305.4.1, 305.5, 305.6, 305.7, 305.8, 305.8.1, 305.8.2, 305.8.3, 305.8.4, 305.8.5, TABLE 305.8.5, 305.8.6, 305.8.7, 305.8.8, 305.8.9, 305.8.10, 305.8.11, 305.8.12, 305.8.13, 305.8.14, 305.8.15, 305.9, 305.9.1, 305.9.2, 305.9.3, 305.9.4, SECTION 405 (New), 405.1 (New), SECTION 705 (New), 705.1 (New), 705.2 (New), 705.3 (New), 705.3.1 (New), 705.3.2 (New), 705.3.3 (New), 705.3.4 (New), 705.3.5 (New), 705.3.6 (New), 705.3.7 (New), 705.3.8 (New), 705.3.9 (New), 705.3.10 (New), 705.3.11 (New), 705.3.12 (New), 705.3.13 (New), 705.3.14 (New), 705.3.15 (New), 705.4 (New), SECTION 806 (New), 806.1 (New), 806.2 (New), SECTION 906 (New), 906.1 (New), 906.2 (New), SECTION 1006 (New), 1006.1 (New), 1006.2 (New), 1006.3 (New), 1006.4 (New), 1006.5 (New), SECTION 1105 (New), 1105.1 (New), 1105.2 (New), 1105.3 (New), 1105.4 (New), SECTION 1204 (New), 1204.1 (New), 1301.2.6 (New)

Proponent: Eirene Knott, representing Metropolitan Kansas City Chapter of the ICC (Eirene.Knott@brrarch.com)

2018 International Existing Building Code
Revise as follows:

SECTION 305

ACCESSIBILITY FOR EXISTING BUILDINGS

305.1 Scope. The provisions of Sections 305.1 through 305.9 apply to maintenance, change of occupancy, additions and alterations to existing buildings, including those identified as historic buildings.

305.2 Maintenance of facilities. A facility that is constructed or altered to be accessible shall be maintained accessible during occupancy.

305.3 Extent of application. An alteration of an existing facility shall not impose a requirement for greater accessibility than that which would be required for new construction. Alterations shall not reduce or have the effect of reducing accessibility of a facility or portion of a facility.

305.4 Change of occupancy. Existing buildings that undergo a change of group or occupancy shall comply with this section.

Exception: Type B dwelling or sleeping units required by Section 1107 of the International Building Code are not required to be provided in existing buildings and facilities undergoing a change of occupancy in conjunction with alterations where the work area is 50 percent or less of the aggregate area of the building.

305.4.1 Partial change of occupancy. Where a portion of the building is changed to a new occupancy classification, any alterations shall comply with Sections 305.6, 305.7, and 305.8.

305.4.2 Complete change of occupancy. Where an entire building undergoes a change of occupancy, it shall comply with Section 305.4.1 and shall have all of the following accessible features:

1. Not fewer than one accessible building entrance.
2. Not fewer than one accessible route from an accessible building entrance to primary function areas.
4. Accessible parking, where parking is being provided.
5. Not fewer than one accessible passenger loading zone, where loading zones are provided.
6. Not fewer than one accessible route connecting accessible parking and accessible passenger loading zones to an accessible entrance.

Where it is technically infeasible to comply with the new construction standards for any of these requirements for a change of group or occupancy, Items 1 through 6 shall conform to the requirements to the maximum extent technically feasible.

Exception: The accessible features listed in Items 1 through 6 are not required for an accessible route to Type B units.

305.6 Additions. Provisions for new construction shall apply to additions. An addition that affects the accessibility to, or contains an area of, a primary function shall comply with the requirements in Section 305.7.

305.6 Alterations. A facility that is altered shall comply with the applicable provisions in Chapter 11 of the International Building Code, unless technically infeasible. Where compliance with this section is technically infeasible, the alteration shall provide access to the maximum extent technically feasible.

Exceptions:

1. The altered element or space is not required to be on an accessible route, unless required by Section 305.7.
2. Accessible means of egress required by Chapter 10 of the International Building Code are not required to be provided in existing facilities.
3. The alteration to Type A individually owned dwelling units within a Group R-2 occupancy shall be permitted to meet the provision...
for a Type B dwelling unit.

4. Type B dwelling or sleeping units required by Section 1107 of the International Building Code are not required to be provided in existing buildings and facilities undergoing alterations where the work area is 50 percent or less of the aggregate area of the building.

305.7.508.7 Allocations affecting an area containing a primary function. Where an alteration affects the accessibility to, or contains an area of primary function, the route to the primary function area shall be accessible. The accessible route to the primary function area shall include toilet facilities and drinking fountains serving the area of primary function.

Exceptions:

1. The costs of providing the accessible route are not required to exceed 20 percent of the costs of the alterations affecting the area of primary function.
2. This provision does not apply to alterations limited solely to windows, hardware, operating controls, electrical outlets and signs.
3. This provision does not apply to alterations limited solely to mechanical systems, electrical systems, installation or alteration of fire protection systems and abatement of hazardous materials.
4. This provision does not apply to alterations undertaken for the primary purpose of increasing the accessibility of a facility.
5. This provision does not apply to altered areas limited to Type B dwelling and sleeping units.

305.8.508.8 Scoping for alterations. The provisions of Sections 305.8.1-508.8.1 through 305.8.15-508.8.15 shall apply to alterations to existing buildings and facilities.

305.8.1.508.8.1 Entrances. Where an alteration includes alterations to an entrance that is not accessible, and the facility has an accessible entrance, the altered entrance is not required to be accessible unless required by Section 305.7. Section 508.7. Signs complying with Section 1111 of the International Building Code shall be provided.

305.8.2.508.8.2 Elevators. Altered elements of existing elevators shall comply with ASME A17.1 and ICC A117.1. Such elements shall also be altered in elevators programmed to respond to the same hall call control as the altered elevator.

305.8.3.508.8.3 Platform lifts. Platform (wheelchair) lifts complying with ICC A117.1 and installed in accordance with ASME A18.1 shall be permitted as a component of an accessible route.

305.8.4.508.8.4 Stairways and escalators in existing buildings. Where an escalator or stairway is added where none existed previously and major structural modifications are necessary for installation, an accessible route shall be provided between the levels served by the escalator or stairways in accordance with Section 1104.4 of the International Building Code.

305.8.5.508.8.5 Ramps. Where slopes steeper than allowed by Section 1012.2 of the International Building Code are necessitated by space limitations, the slope of ramps in or providing access to existing facilities shall comply with Table 305.8.5.805.8.5.

<table>
<thead>
<tr>
<th>SLOPE</th>
<th>MAXIMUM RISE</th>
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<tbody>
<tr>
<td>Steeper than 1:10 but not steeper than 1:8</td>
<td>3 inches</td>
</tr>
<tr>
<td>Steeper than 1:12 but not steeper than 1:10</td>
<td>6 inches</td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4 mm.

305.8.6.508.8.6 Accessible dwelling or sleeping units. Where Group I-1, I-2, I-3, R-1, R-2 or R-4 dwelling or sleeping units are being altered or added, the requirements of Section 1107 of the International Building Code for Accessible units apply only to the quantity of spaces being altered or added.

305.8.7.508.8.7 Type A dwelling or sleeping units. Where more than 20 Group R-2 dwelling or sleeping units are being altered or added, the requirements of Section 1107 of the International Building Code for Type A units apply only to the quantity of the spaces being altered or added.

305.8.8.508.8.8 Type B dwelling or sleeping units. Where four or more Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being added, the requirements of Section 1107 of the International Building Code for Type B units apply only to the quantity of the spaces being added. Where Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being added and where the work area is greater than 50 percent of the aggregate area of the building, the requirements of Section 1107 of the International Building Code for Type B units apply only to the quantity of the spaces being altered.

305.8.9.508.8.9 Jury boxes and witness stands. In alterations, accessible wheelchair spaces are not required to be located within the defined area of raised jury boxes or witness stands and shall be permitted to be located outside these spaces where the ramp or lift access restricts or
projects into the required means of egress.

305.8.10 Toilet rooms. Where it is technically infeasible to alter existing toilet and bathing rooms to be accessible, an accessible family or assisted-use toilet or bathing room constructed in accordance with Section 1109.2.1 of the International Building Code is permitted. The family or assisted-use toilet or bathing room shall be located on the same floor and in the same area as the existing toilet or bathing rooms. At the inaccessible toilet and bathing rooms, directional signs indicating the location of the nearest family or assisted-use toilet room or bathing room shall be provided. These directional signs shall include the International Symbol of Accessibility and sign characters shall meet the visual character requirements in accordance with ICC A117.1.

305.8.11 Additional toilet and bathing facilities. In assembly and mercantile occupancies, where additional toilet fixtures are added, not fewer than one accessible family or assisted-use toilet room shall be provided where required by Section 1109.2.1 of the International Building Code. In recreational facilities, where additional bathing rooms are being added, not fewer than one family or assisted-use bathing room shall be provided where required by Section 1109.2.1 of the International Building Code.

305.8.12 Dressing, fitting and locker rooms. Where it is technically infeasible to provide accessible dressing, fitting or locker rooms at the same location as similar types of rooms, one accessible room on the same level shall be provided. Where separate-sex facilities are provided, accessible rooms for each sex shall be provided. Separate-sex facilities are not required where only unisex rooms are provided.

305.8.13 Fuel dispensers. Operable parts of replacement fuel dispensers shall be permitted to be 54 inches (1370 mm) maximum, measuring from the surface of the vehicular way where fuel dispensers are installed on existing curbs.

305.8.14 Thresholds. The maximum height of thresholds at doorways shall be 3/4 inch (19.1 mm). Such thresholds shall have beveled edges on each side.

305.8.15 Amusement rides. Where the structural or operational characteristics of an amusement ride are altered to the extent that the amusement ride’s performance differs from that specified by the manufacturer or the original design, the amusement ride shall comply with requirements for new construction in Section 1110.4.8 of the International Building Code.

305.8 Historic buildings. These provisions shall apply to facilities designated as historic structures that undergo alterations or a change of occupancy, unless technically infeasible. Where compliance with the requirements for accessible routes, entrances or toilet rooms would threaten or destroy the historic significance of the facility, as determined by the authority having jurisdiction, the alternative requirements of Sections 305.9.1 through 305.9.4 for that element shall be permitted.

Exception: Type B dwelling or sleeping units required by Section 1107 of the International Building Code are not required to be provided in historic buildings.

305.9.1 Site arrival points. Not fewer than one accessible route from a site arrival point to an accessible entrance shall be provided.

305.9.2 Multiple-level buildings and facilities. An accessible route from an accessible entrance to public spaces on the level of the accessible entrance shall be provided.

305.9.3 Entrances. Not fewer than one main entrance shall be accessible.

Exception: If a public entrance cannot be made accessible, an accessible entrance that is unlocked while the building is occupied shall be provided; or, a locked accessible entrance with a notification system or remote monitoring shall be provided.

Signs complying with Section 1111 of the International Building Code shall be provided at the public entrance and the accessible entrance.

305.9.4 Toilet and bathing facilities. Where toilet rooms are provided, not fewer than one accessible family or assisted-use toilet room complying with Section 1109.2.1 of the International Building Code shall be provided.

Add new text as follows:

SECTION 405
Accessibility

405.1 General. Repairs shall be done in a manner that maintains the level of accessibility provided.

SECTION 705
Accessibility

705.1 General. Where compliance with this section is technically infeasible, the alteration shall provide access to the maximum extent that is technically feasible. A facility that is constructed or altered to be accessible shall be maintained accessible during construction.

Exceptions:
1. The altered element or space is not required to be on an accessible route unless required by Section 705.2.
2. Accessible means of egress required by Chapter 10 of the International Building Code are not required to be provided in existing facilities.
3. Type B dwelling or sleeping units required by Section 1107 of the International Building Code are not required to be provided in existing facilities undergoing less than a Level 3 alteration.
4. The alteration of Type A individually owned dwelling units within a Group R-2 occupancy shall meet the provisions for Type B dwelling units.

705.2 Extent of application. An alteration of an existing element, space or area of a facility shall not impose a requirement for greater accessibility than that which would be required for new construction. Alterations shall not reduce or have the effect of reducing accessibility of a facility or portion of a facility.

705.3 Scoping. A facility that is altered shall comply with the applicable provisions of Sections 705.3.1 through 705.3.15, and Chapter 11 of the International Building Code unless it is technically infeasible.

705.3.1 Entrances. Where an alteration includes alterations to an entrance that is not accessible, and the facility has an accessible entrance, the altered entrance is not required to be accessible unless required by Section 705.4. Signs complying with Section 1111 of the International Building Code shall be provided.

705.3.2 Elevators. Altered elements of existing elevators shall comply with ASME A17.1 and ICC A117.1. Such elements shall also be altered in elevators programmed to respond to the same hall call control as the altered elevator.

705.3.3 Platform lifts. Platform (wheelchair) lifts complying with ICC A117.1 and installed in accordance with ASME A18.1 shall be permitted as a component of an accessible route.

705.3.4 Ramps. Where slopes steeper than allowed by Section 1012.2 of the International Building Code are necessitated by space limitations, the slope of ramps in or providing access to existing facilities shall comply with Table 705.3.4.

**TABLE 705.3.4**  
**Ramps**

<table>
<thead>
<tr>
<th>SLOPE</th>
<th>MAXIMUM RISE</th>
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</tbody>
</table>

For SI: inch = 25.4 mm

705.3.5 Dining areas. An accessible route shall be provided throughout the dining area.

**Exception:** An accessible route to raised or sunken areas or to outdoor seating areas is not required provided the same services and decor are provided in an accessible space.

705.3.6 Accessible dwelling and sleeping units. Where Group I-1, I-2, I-3, R-1, R-2 or R-4 dwelling or sleeping units are being altered or added, the requirements of Section 1107 of the International Building Code for Accessible units apply only to the quantity of spaces being altered or added.

705.3.7 Type A dwelling or sleeping units. Where more than 20 Group R-2 dwelling or sleeping units are being altered or added, the requirements of Section 1107 of the International Building Code for Type A units apply only to the quantity of the spaces being altered or added.

705.3.8 Type B dwelling or sleeping units. Where four or more Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being added, the requirements of Section 1107 of the International Building Code for Type B units apply only to the quantity of the spaces being added. Where Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being altered and where the work area is greater than 50 percent of the aggregate area of the building, the requirements of Section 1107 of the International Building Code for Type B units apply only to the quantity of the spaces being altered.

705.3.9 Jury boxes and witness stands. In alterations, accessible wheelchair spaces are not required to be located within the defined area of raised jury boxes or witness stands and shall be permitted to be located outside these spaces where the ramp or lift access restricts or projects into the required means of egress.

705.3.10 Toilet rooms. Where it is technically infeasible to alter existing toilet and bathing rooms to be accessible, an accessible family or assisted-use toilet or bathing room constructed in accordance with Section 1109.2.1 of the International Building Code is permitted. The family or assisted-use toilet or bathing room shall be located on the same floor and in the same area as the existing toilet or bathing rooms. At the inaccessible toilet and bathing rooms, directional signs indicating the location of the nearest family or assisted-use toilet room or bathing room shall be provided. These directional signs shall include the International Symbol of Accessibility and sign characters shall meet the visual character requirements in accordance with ICC A117.1.
Additional toilet and bathing facilities. In assembly and mercantile occupancies, where additional toilet fixtures are added, not fewer than one accessible family or assisted-use toilet room shall be provided where required by Section 1109.2.1 of the International Building Code. In recreational facilities, where additional bathing rooms are being added, not fewer than one family or assisted-use bathing room shall be provided where required by Section 1109.2.1 of the International Building Code.

Dressing, fitting and locker rooms. Where it is technically infeasible to provide accessible dressing, fitting or locker rooms at the same location as similar types of rooms, one accessible room on the same level shall be provided. Where separate-sex facilities are provided, accessible rooms for each sex shall be provided. Separate-sex facilities are not required where only unisex rooms are provided.

Fuel dispensers. Operable parts of replacement fuel dispensers shall be permitted to be 54 inches (1370 mm) maximum, measuring from the surface of the vehicular way where fuel dispensers are installed on existing curbs.

Thresholds The maximum height of thresholds at doorways shall be 3/4 inch (19.1 mm). Such thresholds shall have beveled edges on each side.

Amusement rides. Where the structural or operational characteristics of an amusement ride are altered to the extent that the amusement ride's performance differs from that specified by the manufacturer or the original design, the amusement ride shall comply with requirements for new construction in Section 1110.4.8 of the International Building Code.

Alterations affecting an area containing a primary function. Where an alteration affects the accessibility to, or contains an area of primary function, the route to the primary function area shall be accessible. The accessible route to the primary function area shall include toilet facilities and drinking fountains serving the area of primary function.

Exceptions:
1. The costs of providing the accessible route are not required to exceed 20 percent of the costs of the alterations affecting the area of primary function.
2. This provision does not apply to alterations limited solely to windows, hardware, operating controls, electrical outlets and signs.
3. This provision does not apply to alterations limited solely to mechanical systems, electrical systems, installation or alteration of fire protection systems and abatement of hazardous materials.
4. This provision does not apply to alterations undertaken for the primary purpose of increasing the accessibility of a facility.
5. This provision does not apply to altered areas limited to Type B dwelling and sleeping units.

SECTION 806
Accessibility

General. A building, facility, or element that is altered shall comply with this section and Section 705.

Stairways and escalators in existing buildings. In alterations where an escalator or stairway is added where none existed previously, an accessible route shall be provided in accordance with Sections 1104.4 and 1104.5 of the International Building Code.

SECTION 906
Accessibility

Type B dwelling or sleeping units. Where four or more Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being altered, the requirements of Section 1107 of the International Building Code for Type B units and Chapter 9 of the International Building Code for visible alarms apply only to the quantity of the spaces being altered.

Exception: Group I-1, I-2, R-2, R-3 and R-4 dwelling or sleeping units where the first certificate of occupancy was issued before March 15, 1991 are not required to provide Type B dwelling or sleeping units.

SECTION 1006
Accessibility

General. Accessibility in portions of buildings undergoing a change of occupancy classification shall comply with Section 1011.

SECTION 1105
Accessibility

Minimum requirements. Accessibility provisions for new construction shall apply to additions. An addition that affects the accessibility to, or contains an area of primary function, shall comply with the requirements of Sections 705, 806 and 906 as applicable.

Accessible dwelling units and sleeping units. Where Group I-1, I-2, I-3, R-1, R-2 or R-4 dwelling or sleeping units are being added, the
requirements of Section 1107 of the International Building Code for accessible units apply only to the quantity of spaces being added.

1105.3 Type A dwelling or sleeping units. Where more than 20 Group R-2 dwelling or sleeping units are being added, the requirements of Section 1107 of the International Building Code for Type A units and Chapter 9 of the International Building Code for visible alarms apply only to the quantity of the spaces being added.

1105.4 Type B dwelling or sleeping units. Where four or more Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being added, the requirements of Section 1107 of the International Building Code for Type B units and Chapter 9 of the International Building Code for visible alarms apply only to the quantity of spaces being added.

SECTION 1204
Accessibility

1204.1 Accessibility requirements. The provisions of Sections 705, 806 and 906, as applicable, shall apply to facilities designated as historic structures that undergo alterations or a change of occupancy, unless technically infeasible. Where compliance with the requirements for accessible routes, entrances or toilet rooms would threaten or destroy the historic significance of the facility, as determined by the authority having jurisdiction, the alternative requirements of Sections 1204.1.1 through 1204.4.4 for that element shall be permitted.

Exception: Type B dwelling or sleeping units required by Section 1107 of the International Building Code are not required to be provided in historical buildings.

Revise as follows:

305.9.1 1204.1.1 Site arrival points. Not fewer than one accessible route from a site arrival point to an accessible entrance shall be provided.

305.9.2 1204.1.2 Multiple-level buildings and facilities. An accessible route from an accessible entrance to public spaces on the level of the accessible entrance shall be provided.

305.9.3 1204.1.3 Entrances. Not fewer than one main entrance shall be accessible.

Exception: If a public entrance cannot be made accessible, an accessible entrance that is unlocked while the building is occupied shall be provided; or, a locked accessible entrance with a notification system or remote monitoring shall be provided.

Signs complying with Section 1111 of the International Building Code shall be provided at the public entrance and the accessible entrance.

305.9.4 1204.1.4 Toilet and bathing facilities. Where toilet rooms are provided, not fewer than one accessible family or assisted-use toilet room complying with Section 1109.2.1 of the International Building Code shall be provided.

Add new text as follows:

1301.2.6 Accessibility requirements. Accessibility shall be provided in accordance with Section 410 or 605.

Reason: The IEBC was set up many code cycles ago to offer three distinct options for compliance of existing buildings. By lumping all of the accessibility requirements into one chapter, there is no distinction for accessibility under any of the compliance methods. Previous editions of the IEBC offered code requirements for accessibility under each distinct compliance method. Those requirements should remain with each distinct compliance method as each method is designed to stand on its own merits.

This proposal is relocating the contents of Section 305 to the various chapters, depending on the compliance method. For the prescriptive method, the language in 305 has been moved to a new Section 508. For the work area compliance method, the language in 305 has been moved to Section 705. In addition to the language in Section 705, language has been added to cover the other work area options including repairs, Level 2 alterations, Level 3 alterations, change of occupancy, additions and historic buildings. For the performance compliance method, a section has been added to direct the user to comply with either the prescriptive method or the language for repairs.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is just reformatting current language so there is no impact to the construction cost.

Proposal # 5080

EB5-19
EB6-19


Proponent: Eirene Knott, representing Metropolitan Kansas City Chapter of the ICC (Eirene.Knott@brrarch.com)

2018 International Existing Building Code

Revise as follows:

4 306 REPAIRS

Delete without substitution:

SECTION 401
GENERAL

Revise as follows:

401.1 Scope. Repairs shall comply with the requirements of this chapter. Section 306. Repairs to historic buildings need only comply with Chapter 12.

401.2 Compliance. The work shall not make the building less complying than it was before the repair was undertaken.

[BS] 401.3 Flood hazard areas. In flood hazard areas, repairs that constitute substantial improvement shall require that the building comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.

Delete without substitution:

SECTION 402
BUILDING ELEMENTS AND MATERIALS

Revise as follows:

402.4 Glazing in hazardous locations. Replacement glazing in hazardous locations shall comply with the safety glazing requirements of the International Building Code or International Residential Code as applicable.

Exception: Glass block walls, louvered windows and jalousies repaired with like materials.

Delete without substitution:

SECTION 403
FIRE PROTECTION

Revise as follows:

403.5 General. Fire Protection. Repairs shall be done in a manner that maintains the level of fire protection provided.

Delete without substitution:

SECTION 404
MEANS OF EGRESS

Revise as follows:

404.6 General. Means of Egress. Repairs shall be done in a manner that maintains the level of protection provided for the means of egress.

Delete without substitution:

SECTION 405
STRUCTURAL

[BS] 405.7 General. Structural. Repairs shall be in compliance with this section and Section 401.2-306.2
[BS] 406.2 306.7.1 Repairs to damaged buildings. Repairs to damaged buildings shall comply with this section.

[BS] 406.2.4 306.7.1.1 Repairs for less than substantial structural damage. Unless otherwise required by this section, for damage less than substantial structural damage, the damaged elements shall be permitted to be restored to their predamage condition.

[BS] 406.2.4.1 306.7.1.1.1 Snow damage. Structural components whose damage was caused by or related to snow load effects shall be repaired, replaced or altered to satisfy the requirements of Section 1608 of the International Building Code.

[BS] 406.2.2 306.7.1.2 Disproportionate earthquake damage. A building assigned to Seismic Design Category D, E or F that has sustained disproportionate earthquake damage shall be subject to the requirements for buildings with substantial structural damage to vertical elements of the lateral force-resisting system.

[BS] 406.2.3 306.7.1.3 Substantial structural damage to vertical elements of the lateral force-resisting system. A building that has sustained substantial structural damage to the vertical elements of its lateral force-resisting system shall be evaluated in accordance with Section 405.2.3.3, repaired and retrofitted in accordance with Section 405.2.3.3, depending on the results of the evaluation.

Exceptions:

1. Buildings assigned to Seismic Design Category A, B or C whose substantial structural damage was not caused by earthquake need not be evaluated or retrofitted for load combinations that include earthquake effects.
2. One- and two-family dwellings need not be evaluated or retrofitted for load combinations that include earthquake effects.

[BS] 406.2.3.1 306.7.1.3.1 Evaluation. The building shall be evaluated by a registered design professional, and the evaluation findings shall be submitted to the code official. The evaluation shall establish whether the damaged building, if repaired to its predamage state, would comply with the provisions of the International Building Code for load combinations that include wind or earthquake effects, except that the seismic forces shall be the reduced seismic forces.

[BS] 406.2.3.2 306.7.1.3.2 Extent of repair for compliant buildings. If the evaluation establishes that the building in its predamage condition complies with the provisions of Section 405.2.3.3, then the damaged elements shall be permitted to be restored to their predamage condition.

[BS] 406.2.3.3 306.7.1.3.3 Extent of repair for noncompliant buildings. If the evaluation does not establish that the building in its predamage condition complies with the provisions of Section 405.2.3.3, then the building shall be retrofitted to comply with the provisions of this section. The wind loads for the repair and retrofit shall be those required by the building code in effect at the time of original construction, unless the damage was caused by wind, in which case the wind loads shall be in accordance with the International Building Code. The seismic loads for this retrofit design shall be those required by the building code in effect at the time of original construction, but not less than the reduced seismic forces.

[BS] 406.2.4 306.7.1.4 Substantial structural damage to gravity load-carrying components. Gravity load-carrying components that have sustained substantial structural damage shall be rehabilitated to comply with the applicable provisions for dead and live loads in the International Building Code. Snow loads shall be considered if the substantial structural damage was caused by or related to snow load effects. Undamaged gravity load-carrying components that receive dead, live or snow loads from rehabilitated components shall also be rehabilitated if required to comply with the design loads of the rehabilitation design.

[BS] 406.2.4.1 306.7.1.4.1 Lateral force-resisting elements. Regardless of the level of damage to vertical elements of the lateral force-resisting system, if substantial structural damage to gravity load-carrying components was caused primarily by wind or seismic effects, then the building shall be evaluated in accordance with Section 405.2.3.3 and, if noncompliant, retrofitted in accordance with Section 405.2.3.3.3.

Exceptions:

1. Buildings assigned to Seismic Design Category A, B, or C whose substantial structural damage was not caused by earthquake need not be evaluated or retrofitted for load combinations that include earthquake effects.
2. One- and two-family dwellings need not be evaluated or retrofitted for load combinations that include earthquake effects.

[BS] 406.2.5 306.7.1.5 Flood hazard areas. In flood hazard areas, buildings that have sustained substantial damage shall be brought into compliance with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.

Delete without substitution:

SECTION 406
ELECTRICAL

Revise as follows:

406.4 306.8 Material: Electrical. Existing electrical wiring and equipment undergoing repair shall be allowed to be repaired or replaced with like
406.1.1 Receptacles. Replacement of electrical receptacles shall comply with the applicable requirements of Section 406.4(D) of NFPA 70.

406.1.2 Plug fuses. Plug fuses of the Edison-base type shall be used for replacements only where there is no evidence of over fusing or tampering per applicable requirements of Section 240.51(B) of NFPA 70.

406.1.3 Nongrounding-type receptacles. For replacement of nongrounding-type receptacles with grounding-type receptacles and for branch circuits that do not have an equipment grounding conductor in the branch circuitry, the grounding conductor of a grounding-type receptacle outlet shall be permitted to be grounded to any accessible point on the grounding electrode system or to any accessible point on the grounding electrode conductor in accordance with Section 250.130(C) of NFPA 70.

406.1.4 Group I-2 receptacles. Receptacles in patient bed locations of Group I-2 that are not “hospital grade” shall be replaced with “hospital grade” receptacles, as required by NFPA 99 and Article 517 of NFPA 70.

406.1.5 Grounding of appliances. Frames of electric ranges, wall-mounted ovens, counter-mounted cooking units, clothes dryers and outlet or junction boxes that are part of the existing branch circuit for these appliances shall be permitted to be grounded to the grounded circuit conductor in accordance with Section 250.140 of NFPA 70.

Delete without substitution:

SECTION 407
MECHANICAL

Revise as follows:

407.1 General. Mechanical. Existing mechanical systems undergoing repair shall not make the building less complying than it was before the damaged occurred.

407.2 Mechanical draft systems for manually fired appliances and fireplaces. A mechanical draft system shall be permitted to be used with manually fired appliances and fireplaces where such a system complies with all of the following requirements:

1. The mechanical draft device shall be listed and installed in accordance with the manufacturer’s installation instructions.
2. A device shall be installed that produces visible and audible warning upon failure of the mechanical draft device or loss of electrical power at any time that the mechanical draft device is turned on. This device shall be equipped with a battery backup if it receives power from the building wiring.
3. A smoke detector shall be installed in the room with the appliance or fireplace. This device shall be equipped with a battery backup if it receives power from the building wiring.

Delete without substitution:

SECTION 408
PLUMBING

Revise as follows:

408.1 Materials. Plumbing. Plumbing materials and supplies shall not be used for repairs that are prohibited in the International Plumbing Code.

408.2 Water closet replacement. The maximum water consumption flow rates and quantities for all replaced water closets shall be 1.6 gallons (6 L) per flushing cycle.

Exception: Blowout-design water closets [3.5 gallons (13 L) per flushing cycle].

Reason: The purpose of this code change is to pull the provisions for repairs from Chapter 4 and put them in Chapter 3 which covers general provisions as repairs can occur using any of the compliance methods with the requirements being the same for each method.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. There is no cost impact as this is just moving current language to another location within the body of the code.

Proposal # 3972

EB6-19
2018 International Existing Building Code

CHAPTER 5-4 PRESCRIPTIVE COMPLIANCE METHOD

SECTION 501 401
GENERAL

Revise as follows:

501.1 Scope. The provisions of this chapter shall control the alteration, repair, addition and change of occupancy of existing buildings and structures, including historic buildings and structures as referenced in Section 301.3.2.

Exception: Existing bleachers, grandstands and folding and telescopic seating shall comply with ICC 300.

501.1.1 Compliance with other methods. Alterations, repairs, additions and changes of occupancy to existing buildings and structures shall comply with the provisions of this chapter or with one of the methods provided in Section 301.3.

SECTION 502 402
ADDITIONS

SECTION 503 403
ALTERATIONS

Add new text as follows:

SECTION 404
REPAIRS

404.1 General. Buildings and structures, and parts thereof, shall be repaired in compliance with Section 404.

404.2 Repairs to damaged buildings. Repairs to damaged buildings shall comply with this section.

404.2.1 Repairs for less than substantial structural damage. Unless otherwise required by this section, for damage less than substantial structural damage, the damaged elements shall be permitted to be restored to their predamaged condition.

404.2.1.1 Snow damage. Structural components whose damage was caused by or related to snow load effects shall be repaired, replaced or altered to satisfy the requirements of Section 1608 of the International Building Code.

404.2.2 Disproportionate earthquake damage. A building assigned to Seismic Design Category D, E or F that has sustained disproportionate earthquake damage shall be subject to the requirements for buildings with substantial structural damage to vertical elements of the lateral force-resisting system.

404.2.3 Substantial structural damage to vertical elements of the lateral force-resisting system. A building that has sustained substantial structural damage to the vertical elements of its lateral force resisting system shall be evaluated in accordance with Section 404.2.3.1, and either repaired in accordance with Section 404.2.3.2 or repaired and retrofitted in accordance with Section 404.2.3.3, depending on the results of the evaluation.

Exceptions:

1. Buildings assigned to Seismic Design Category A, B or C whose substantial structural damage was not caused by earthquake need not be evaluated or retrofitted for load combinations that include earthquake effects.

2. One- and two-family dwellings need not be evaluated or retrofitted for load combinations that include earthquake effects.

Proponent: Eirene Knott, representing Metropolitan Kansas City Chapter of the ICC (Eirene.Knott@brrarch.com)
404.2.3.1 Evaluation. The building shall be evaluated by a registered design professional, and the evaluation findings shall be submitted to the code official. The evaluation shall establish whether the damaged building, if repaired to its predamage state, would comply with the provisions of the International Building Code for load combinations that include wind or earthquake effects, except that the seismic forces shall be the reduced seismic forces.

404.2.3.2 Extent of repair for compliant buildings. If the evaluation establishes that the building in its predamage condition complies with the provisions of Section 404.2.3.1, then the damaged elements shall be permitted to be restored to their predamage condition.

404.2.3.3 Extent of repair for noncompliant buildings. If the evaluation does not establish that the building in its predamage condition complies with the provisions of Section 404.2.3.1, then the building shall be retrofitted to comply with the provisions of this section. The wind loads for the repair and retrofit shall be those required by the building code in effect at the time of original construction, unless the damage was caused by wind, in which case the wind loads shall be in accordance with the International Building Code. The seismic loads for this retrofit design shall be those required by the building code in effect at the time of original construction, but not less than the reduced seismic forces.

404.2.4 Substantial structural damage to gravity load-carrying components. Gravity load-carrying components that have sustained substantial structural damage shall be rehabilitated to comply with the applicable provisions for dead and live loads in the International Building Code. Snow loads shall be considered if the substantial structural damages was caused by or related to snow load effects. Undamaged gravity load-carrying components that receive dead, live or snow loads from rehabilitated components shall also be rehabilitated if required to comply with the design loads of the rehabilitation design.

404.2.4.1 Lateral force-resisting elements. Regardless of the level of damage to vertical elements of the lateral force-resisting system, if substantial structural damage to gravity load-carrying components was caused primarily by wind or seismic effects, then the building shall be evaluated in accordance with Section 404.2.3.1 and, if noncompliant, retrofitted in accordance with Section 404.2.3.3.

Exceptions:

1. Buildings assigned to Seismic Design Category A, B or C whose substantial structural damage was not caused by earthquake need not be evaluated or retrofitted for load combinations that include earthquake effects.
2. One-and two-family dwellings need not be evaluated or retrofitted for load combinations that include earthquake effects.

404.2.5 Flood hazard areas. In flood hazard areas, buildings that have sustained substantial damage shall be brought into compliance with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.

Add new text as follows:

SECTION 502 REPAIRS

502.1 Scope. Repairs, as defined in Chapter 2, include the patching or restoration or replacement of damaged materials, elements, equipment or fixtures for the purpose of maintaining such components in good or sound condition with respect to existing loads or performance requirements.

502.2 Application. Repairs shall comply with the provisions of Chapter 6.

502.3 Related Work. Work on nondamaged components that is necessary for the required repair of damaged components shall be considered part of the repair and shall not be subject to the provisions of Chapter 7, 8, 9, 10 or 11.
Revis as follows:

401.601.1 Scope. Repairs as described in Section 502 shall comply with the requirements of this chapter. Repairs to historic buildings need only comply with Chapter 12.

401.601.2 Compliance. The work shall not make the building less complying than it was before the repair was undertaken.

[BS] 401.601.3 Flood hazard areas. In flood hazard areas, repairs that constitute substantial improvement shall require that the building comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.

SECTION 402 602
BUILDING ELEMENTS AND MATERIALS

402.602.1 Glazing in hazardous locations. Replacement glazing in hazardous locations shall comply with the safety glazing requirements of the International Building Code or International Residential Code as applicable.

Exception: Glass block walls, louvered windows and jalousies repaired with like materials.

SECTION 403 603
FIRE PROTECTION

403.603.1 General. Repairs shall be done in a manner that maintains the level of fire protection provided.

SECTION 404 604
MEANS OF EGRESS

404.604.1 General. Repairs shall be done in a manner that maintains the level of protection provided for the means of egress.

SECTION 405 605
STRUCTURAL

[BS] 405.605.1 General. Structural repairs shall be in compliance with this section and Section 401.601.2.

[BS] 405.605.2 Repairs to damaged buildings. Repairs to damaged buildings shall comply with this section.

[BS] 405.605.2.1 Repairs for less than substantial structural damage. Unless otherwise required by this section, for damage less than substantial structural damage, the damaged elements shall be permitted to be restored to their predamage condition.
[BS] 405.2.1.1 Snow damage. Structural components whose damage was caused by or related to snow load effects shall be repaired, replaced or altered to satisfy the requirements of Section 1608 of the International Building Code.

[BS] 405.2.2 Disproportionate earthquake damage. A building assigned to Seismic Design Category D, E or F that has sustained disproportionate earthquake damage shall be subject to the requirements for buildings with substantial structural damage to vertical elements of the lateral force-resisting system.

[BS] 405.2.3 Substantial structural damage to vertical elements of the lateral force-resisting system. A building that has sustained substantial structural damage to the vertical elements of its lateral force-resisting system shall be evaluated in accordance with Section 405.2.3.1 and, either repaired in accordance with Section 405.2.3.2 or repaired and retrofitted in accordance with Section 405.2.3.3, depending on the results of the evaluation.

Exceptions:

1. Buildings assigned to Seismic Design Category A, B or C whose substantial structural damage was not caused by earthquake need not be evaluated or retrofitted for load combinations that include earthquake effects.
2. One- and two-family dwellings need not be evaluated or retrofitted for load combinations that include earthquake effects.

[BS] 405.2.4.1 Evaluation. The building shall be evaluated by a registered design professional, and the evaluation findings shall be submitted to the code official. The evaluation shall establish whether the damaged building, if repaired to its predamage state, would comply with the provisions of the International Building Code for load combinations that include wind or earthquake effects, except that the seismic forces shall be the reduced seismic forces.

[BS] 405.2.3.2 Extent of repair for compliant buildings. If the evaluation establishes that the building in its predamage condition complies with the provisions of Section 405.2.2.1 + 605.2.3.1, then the damaged elements shall be permitted to be restored to their predamage condition.

[BS] 405.2.3.3 Extent of repair for noncompliant buildings. If the evaluation does not establish that the building in its predamage condition complies with the provisions of Section 405.2.2.1 + 605.2.3.1, then the building shall be retrofitted to comply with the provisions of this section. The wind loads for the repair and retrofit shall be those required by the building code in effect at the time of original construction, unless the damage was caused by wind, in which case the wind loads shall be in accordance with the International Building Code. The seismic loads for this retrofit design shall be those required by the building code in effect at the time of original construction, but not less than the reduced seismic forces.

[BS] 405.2.4 Substantial structural damage to gravity load-carrying components. Gravity load-carrying components that have sustained substantial structural damage shall be rehabilitated to comply with the applicable provisions for dead and live loads in the International Building Code. Snow loads shall be considered if the substantial structural damage was caused by or related to snow load effects. Undamaged gravity load-carrying components that receive dead, live or snow loads from rehabilitated components shall also be rehabilitated if required to comply with the design loads of the rehabilitation design.

[BS] 405.2.4.1 Lateral force-resisting elements. Regardless of the level of damage to vertical elements of the lateral force-resisting system, if substantial structural damage to gravity load-carrying components was caused primarily by wind or seismic effects, then the building shall be evaluated in accordance with Section 405.2.2.1 + 605.2.3.1 and, if noncompliant, retrofitted in accordance with Section 405.2.3.3.

Exceptions:

1. Buildings assigned to Seismic Design Category A, B or C whose substantial structural damage was not caused by earthquake need not be evaluated or retrofitted for load combinations that include earthquake effects.
2. One- and two-family dwellings need not be evaluated or retrofitted for load combinations that include earthquake effects.

[BS] 405.2.5 Flood hazard areas. In flood hazard areas, buildings that have sustained substantial damage shall be brought into compliance with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.

SECTION 406 ELECTRICAL

406.1 Material. Existing electrical wiring and equipment undergoing repair shall be allowed to be repaired or replaced with like material.

406.1.1 Receptacles. Replacement of electrical receptacles shall comply with the applicable requirements of Section 406.4(D) of NFPA 70.

406.1.2 Plug fuses. Plug fuses of the Edison-base type shall be used for replacements only where there is no evidence of over fusing or tampering per applicable requirements of Section 240.51(B) of NFPA 70.

406.1.3 Nongrounding-type receptacles. For replacement of nongrounding-type receptacles with grounding-type receptacles and for branch circuits that do not have an equipment grounding conductor in the branch circuitry, the grounding conductor of a grounding-type receptacle outlet shall be permitted to be grounded to any accessible point on the grounding electrode system or to any accessible point on the grounding
electrode conductor in accordance with Section 250.130(C) of NFPA 70.

**406.1.4 Group I-2 receptacles.** Receptacles in patient bed locations of Group I-2 that are not “hospital grade” shall be replaced with “hospital grade” receptacles, as required by NFPA 99 and Article 517 of NFPA 70.

**406.1.5 Grounding of appliances.** Frames of electric ranges, wall-mounted ovens, counter-mounted cooking units, clothes dryers and outlet or junction boxes that are part of the existing branch circuit for these appliances shall be permitted to be grounded to the grounded circuit conductor in accordance with Section 250.140 of NFPA 70.

**SECTION 407 607 MECHANICAL**

**407-1 General.** Existing mechanical systems undergoing repair shall not make the building less complying than it was before the damaged occurred.

**407-2 Mechanical draft systems for manually fired appliances and fireplaces.** A mechanical draft system shall be permitted to be used with manually fired appliances and fireplaces where such a system complies with all of the following requirements:

1. The mechanical draft device shall be listed and installed in accordance with the manufacturer’s installation instructions.
2. A device shall be installed that produces visible and audible warning upon failure of the mechanical draft device or loss of electrical power at any time that the mechanical draft device is turned on. This device shall be equipped with a battery backup if it receives power from the building wiring.
3. A smoke detector shall be installed in the room with the appliance or fireplace. This device shall be equipped with a battery backup if it receives power from the building wiring.

**SECTION 408 608 PLUMBING**

**408-1 Materials.** Plumbing materials and supplies shall not be used for repairs that are prohibited in the International Plumbing Code.

**408-2 Water closet replacement.** The maximum water consumption flow rates and quantities for all replaced water closets shall be 1.6 gallons (6 L) per flushing cycle.

Exception: Blowout-design water closets [3.5 gallons (13 L) per flushing cycle].

**1301.2.4 Alterations.** Alterations and repairs. An existing building or portion thereof shall not be altered or repaired in such a manner that results in the building being less safe or sanitary than such building is currently. Exception: Where the current level of safety or sanitation is proposed to be reduced, the portion altered or repaired shall conform to the requirements of the International Building Code.

**Reason:** The IEBC was set up many code cycles ago to offer three distinct options for compliance of existing buildings. By lumping all of the repair requirements into one chapter, there is no distinction for repairs under any of the compliance methods. Previous editions of the IEBC offered code requirements for repairs under each distinct compliance method. Those requirements should remain with each distinct compliance method as each method is designed to stand on its own merits.

This proposed code change is moving the language from Chapter 4, Repairs, to become its own Chapter under the Work Area Compliance Method as well as providing language in the Prescriptive Method and the Compliance Method. The intention is that this relocation puts the repair language in the appropriate compliance method, depending on which method is utilized by the designer.

**Cost Impact:** The code change proposal will not increase or decrease the cost of construction.

There is no cost impact with this code change as it is only relocating language.

Proposal # 4024
301.5, 305.2 (New), 305.8.3

**Proponent:** Dawn Anderson, representing self (gonedawning@yahoo.com); Gene Boecker, representing Code Consultants, Inc. (geneb@codeconsultants.com); Dan Buuck, representing National Association of Home Builders (dbuuck@nahb.org); David Collins, representing the American Institute of Architects (dcollins@preview-group.com); Marsha Mazz, representing United Spinal Association (m.mazz@verizon.net).

2018 International Existing Building Code

**SECTION 301**

**ADMINISTRATION**

Delete without substitution:

301.5 Compliance with accessibility. Accessibility requirements for existing buildings shall comply with the 2009 edition of ICC A117.1.

**SECTION 305 ACCESSIBILITY FOR EXISTING BUILDINGS**

305.1 Scope. The provisions of Sections 305.1 through 305.9 apply to maintenance, change of occupancy, additions and alterations to existing buildings, including those identified as historic buildings.

Add new text as follows:

305.2 Design. Buildings and facilities shall be designed and constructed to be accessible in accordance with this code and the alteration and existing building provisions in ICC A117.1, as applicable.

Revise as follows:

305.8.2 Elevators. Altered elements of existing elevators shall comply with ASME A17.1 and ICC A117.1. Such elements shall also be altered in elevators programmed to respond to the same hall call control as the altered elevator.

305.8.3 Platform lifts. Platform (wheelchair) lifts complying with ICC A117.1 and installed in accordance with ASME A18.1 shall be permitted as a component of an accessible route.

**Reason:** The 2017 A117.1 has separate requirements for new and existing construction. The concern that brought out this change originally that existing buildings would have to automatically upgrade to the new sizes has been resolved. In addition, by stating that the “existing building” provisions apply, it will be clear which of the technical requirements to include in the standard. “Existing buildings” is defined in the 2017 A117.1 the same as in the IEBC.

**existing building:** A building erected prior to the date of adoption of this standard, or one for which a legal building permit has been issued.

A few places in the A117.1 use ‘alterations’ instead of ‘existing buildings’. To make sure that it is understood that both apply to existing buildings, both term are called out in this reference.

The “as applicable” is added for the sections that do not have separate provisions for new and existing buildings/alterations.

The references to ICC A117.1 in Section 305.8.2 and 305.8.3 are redundant with this modification and no longer needed.

**Cost Impact:** The code change proposal will not increase or decrease the cost of construction. Since this update to new standard has allowances for existing buildings, this is mostly editorial.
2018 International Existing Building Code
Revise as follows:

SECTION 301
ADMINISTRATION

301.1 General. The repair, alteration, change of occupancy, addition or relocation of all existing buildings shall comply with Section 301.2, 301.3, or 301.4.

301.2 Repairs. Repairs shall comply with the requirements of Chapter 4.

301.3 Alteration, addition or change of occupancy. The alteration, addition or change of occupancy of all existing buildings shall comply with one of the methods listed in Section 301.3.1, 301.3.2 or 301.3.3 as selected by the applicant. Sections 301.3.1 through 301.3.3 shall not be applied in combination with each other.

Exception: Subject to the approval of the code official, alterations complying with the laws in existence at the time the building or the affected portion of the building was built shall be considered in compliance with the provisions of this code. New structural members added as part of the alteration shall comply with the International Building Code. This exception shall not apply to alterations that constitute the following:

1. Alterations that constitute accessibility improvements, which shall comply with Section 305.
2. Alterations that constitute substantial improvement in flood hazard areas, which shall comply with Section 503.2, 701.3 or 1301.3.3.

2. This exception shall not apply to the structural provisions of Section 303, Chapter 5 or to the structural provisions of Sections 706, 806 and 906.

Reason: Essentially besides from some structural and flood issues the code official could allow complete exemption from this code. The largest concern is the accessibility pieces which we address in this code because of the ADA will affect them in either case. Without this link we are potentially causing legal issues for many building owners by not requiring compliance with the accessibility provisions of the IEBC for alterations. The change to the structural provisions is a correlation piece since part of the structural provisions was relocated to Section 303 in the 2018 IEBC.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. Since 2017 the BCAC has held 6 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: https://www.iccsafe.org/codes-tech-support/codes/codedevelopment-process/building-code-actioncommittee-bcac.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is already required by the American’s with Disabilities Act. It was always the intent of the requirements to apply to existing buildings so that accessibility is improved over time.
EB10-19
IEBC: 301.1.1 (New), 401.1.1 (New), 501.1, 1401.1.1 (New)

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

2018 International Existing Building Code
Revise as follows:

3 PROVISIONS FOR ALL COMPLIANCE METHODS
SECTION 301
ADMINISTRATION

301.1 General. The repair, alteration, change of occupancy, addition or relocation of all existing buildings shall comply with Section 301.2, 301.3, or 301.4.

Add new text as follows:

301.1.1 Bleachers, grandstands and folding and telescopic seating. Existing bleachers, grandstands and folding and telescopic seating shall comply with ICC 300.

Revise as follows:

4 REPAIRS
SECTION 401
GENERAL

401.1 Scope. Repairs shall comply with the requirements of this chapter. Repairs to historic buildings need only comply with Chapter 12.

Add new text as follows:

401.1.1 Bleachers, grandstands and folding and telescopic seating. Repairs to existing bleachers, grandstands and folding and telescopic seating shall comply with ICC 300.

Revise as follows:

5 PRESCRIPTIVE COMPLIANCE METHOD
SECTION 501
GENERAL

501.1 Scope. The provisions of this chapter shall control the alteration, addition and change of occupancy of existing buildings and structures, including historic buildings and structures as referenced in Section 301.3.2.

Exception: Existing bleachers, grandstands and folding and telescopic seating shall comply with ICC 300.

14 RELOCATED OR MOVED BUILDINGS
SECTION 1401
GENERAL

1401.1 Scope. This chapter provides requirements for relocated or moved structures, including relocatable buildings as defined in Chapter 2.

Add new text as follows:

1401.1.1 Bleachers, grandstands and folding and telescopic seating. Relocated or moved bleachers, grandstands and folding and telescopic seating shall comply with ICC 300.

Reason: The bleacher safety standard includes provisions for new construction as well as maintenance, repair, alterations and relocation of bleachers. The current reference for alterations is only in the prescriptive method. It should be applicable for all methods, thus the addition to Chapter 3. In addition, this is a requirement, not an exception – currently Section 501.1 has this as an exception. ICC 300 includes provisions for repairs and moved bleachers. Therefore, a reference should be added into the chapter for repairs (Chapter 4) and relocated buildings (Chapter 14). These chapters are not covered by Chapter 3.
This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. Since 2017 the BCAC has held 6 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: https://www.iccsafe.org/codes-tech-support/codes/codedevelopment-process/building-code-actioncommittee-bcac.

**Cost Impact:** The code change proposal will not increase or decrease the cost of construction
As the proposed change is only affecting the location of the pointer for greater clarity, there is no cost impact to the proposed change.

Proposal # 4229

EB10-19
2018 International Existing Building Code

Revise as follows:

302.3 Additional codes. Alterations, repairs, additions and changes of occupancy to, or relocation of, existing buildings and structures shall comply with the provisions for alterations, repairs, additions and changes of occupancy or relocation, respectively, in this code and the International Energy Conservation Code, International Fire Code, International Fuel Gas Code, International Mechanical Code, International Plumbing Code, International Private Sewage Disposal Code, International Property Maintenance Code, International Residential Code and NFPA 70. Where provisions of the other codes conflict with provisions of this code, the provisions of this code shall take precedence.

Add new text as follows:

302.3.1 Additional Codes in Healthcare. In existing Group I-2 occupancies, ambulatory healthcare facilities, outpatient clinics and hyperbaric facilities, alterations, repairs, additions and changes of occupancy to, or relocation of, existing buildings and structures shall comply with the provisions for alterations, repairs, additions and changes of occupancy in NFPA 99.

Reason: NFPA 99 is currently in the IFC for maintenance and repair. NFPA 99 specifies additional requirements for building systems in health care facilities than just NFPA 70. In order to meet federal conditions of participation health care facilities must comply with system and equipment according to the requirements listed in NFPA 99, Health Care Facilities Code (K901, K902, K904, K905, K911, K906, K912, K914, K915 and K916). This change will align the electrical systems installation requirements for Outpatient Clinics, Group B Ambulatory Care and Group I-2 facilities. NFPA 99 uses a risk based approach to system design, installation and maintenance in healthcare facilities (Group I-2 facilities, ambulatory care facilities and outpatient clinics). Four levels of systems categories are defined in NFPA 99, based on the risks to patients and caregivers in the facilities. The categories are as follows:

(1) Category 1: Systems that are expected to be functional at all times. Failure of these systems is likely to cause major injury or death.

(2) Category 2: Systems are expected to have a high level of reliability. Failures of these systems are likely to cause minor injury to patients or caregivers, however, limited short durations of equipment downtime can be tolerated. Category 2 systems are not critical for life support.

(3) Category 3: Normal building system reliabilities are expected. Such systems support patient needs, but failure of such equipment or systems would not immediately affect patient care and are not critical for life support.

(4) Category 4: Such systems have no impact on patient care and would not be noticeable to patients in the event of failure.

The category definitions apply to equipment and systems operations.

A risk assessment should be conducted to evaluate the risk to the patients, staff, and visitors in all healthcare facilities. These categories are not always aligned to occupancy classification. Potential examples of areas/systems and their categories of risk:

(1) Ambulatory surgical center, where patients undergo general anesthesia, Category 1

(2) Reconstructive surgeon’s office with general anesthesia, Category 1

(3) Procedural sedation site for outpatient services, Category 2

(4) Cooling systems in Houston, TX, Category 2

(5) Cooling systems in Seattle, WA, Category 3

(6) Heating systems in Chicago, IL Category 2

(7) Dental office, no general anesthesia, Category 3

(8) Typical doctor’s office/exam room, Category 4

(9) Group I-2 Condition 2 facilities most systems would be Category 1

This approach more closely aligns system design, performance and maintenance to the safety risk to the public. It does not create significant
This proposal is submitted by the ICC Committee on Healthcare (CHC). The CHC was established by the ICC Board to evaluate and assess contemporary code issues relating to 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. In 2017 and 2018 the CHC held 4 open meetings and numerous conference calls, which included members of the committees as well as any interested parties, to discuss and debate the proposed changes. Information on the CHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CHC effort can be downloaded from the CHC website at: https://www.iccsafe.org/codes-tech-support/cs/icc-committee-on-healthcare/.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This change aligns with existing federal requirements for the healthcare industry.
EB12-19

IEBC®: 302.5.2 (New), (New)

Proponent: Marcelo M Hirschler, GBH International, representing GBH International (mmh@gbhint.com)

2018 International Existing Building Code

Add new text as follows:

302.5.2 Replacement of exterior wall covering or exterior wall envelope Materials and methods of application used to add or replace an exterior wall covering or exterior wall envelope shall comply with the requirements of Chapter 14 and Chapter 26 of the International Building Code.

Add new definition as follows:

[BF] EXTERIOR WALL COVERING. A material or assembly of materials applied on the exterior side of exterior walls for the purpose of providing a weather-resistant barrier, insulation or for aesthetics, including but not limited to, veneers, siding, exterior insulation and finish systems, architectural trim and embellishments such as cornices, soffits, facias, gutters and leaders.

[BF] EXTERIOR WALL ENVELOPE. A system or assembly of exterior wall components, including exterior wall finish materials, that provides protection of the building structural members, including framing and sheathing materials, and conditioned interior space, from the detrimental effects of the exterior environment.

Reason: Where either replacement of the exterior wall covering or envelope is done for any reason (or where an exterior wall assembly or an exterior wall envelope is being added); either voluntarily by the building owner or because the system no longer performs its required function to protect the building structure and interior from the weather and external environment, this proposal simply requires the new or replaced exterior wall system to meet the minimum performance and safety requirements in IBC Chapters 14 and 26 as applicable. There were a number of proposals in Group A that were approved for IBC Chapter 14 and 26 to clarify the performance and fire safety testing of exterior walls in response to several fatal fires related to exterior façade/curtain wall fires. These requirements are necessary for the IEBC to ensure the safety of existing buildings when replacement of the exterior wall covering or envelope is performed for any reason. Recent international fires have shown the potential of exterior wall systems to cause severe destruction and potential life loss.

The intent of this proposal is to require a reasonable set of minimum code requirements to ensure fire safety and weather protection for building exterior walls that contain a new building exterior wall envelope; the same requirements that apply to such systems in the IBC Chapters 14 and 26.

This proposal also adds two definitions for clarity. These same definitions are currently included in the IBC.

Cost Impact: The code change proposal will not increase or decrease the cost of construction.

No cost increase to construction as this proposal does not specify that an exterior wall covering or envelope must be replaced. When an addition or replacement is necessary because the system does not exist or no longer performs its required function to protect the building structure and interior from the weather and external environment, this proposal simply requires the replacement to meet the minimum performance and safety requirements in IBC Chapters 14 and 26, as applicable.

Proposal # 4724
Add new text as follows:

302.5.2 High rise buildings Where an exterior wall envelope is added to, or replaced, in a building with an occupied floor exceeding 75 feet above the lowest level of fire department vehicle access, an automatic sprinkler system complying with Section 903.3.1.1 of the International Building Code shall be required throughout the building.

Reason: Many existing high-rise buildings were constructed before automatic fire sprinkler systems were required. Many of these buildings would have been constructed without an exterior wall envelope and would not have had possible flame spread outside the exterior wall. If an exterior wall envelope is being added the fire hazard is increased and the protection offered by an automatic fire sprinkler system would be important to lower the increased fire hazard.

This proposal would require that the high-rise building now be protected with an automatic fire sprinkler system. It is recognized that fire sprinklers would not suppress or control a fire in the building exterior, but they would help control interior fires and thereby reduce the hazard resulting from those fires venting out windows or other openings and be a source of flame spread along the exterior wall system, or even ignition of the system (if it contains combustible components, such as foam plastic insulation).

Where an existing exterior wall envelope is being replaced by a new system, the potential still exists for increased fire hazard. This proposal would also require that the building now be protected by an automatic fire sprinkler system.

Cost Impact: The code change proposal will increase the cost of construction
This proposal would add to the cost of construction for any building undergoing an exterior wall envelopment addition or replacement if the building is not already equipped with an automatic fire sprinkler system. There would be no added cost of construction for buildings that are protected with an automatic fire sprinkler system.
2018 International Existing Building Code

Add new text as follows:

SECTION 303
STORM SHELTERS

303.1 Storm shelters. This section applies to the construction of storm shelters constructed as rooms or spaces within existing buildings for the purpose of providing protection during storms that produce high winds, such as tornadoes and hurricanes. Such structures shall be designated to be hurricane shelters, tornado shelters, or combined hurricane and tornado shelters. Such structures shall be constructed in accordance with this code and ICC 500.

SECTION 502
ADDITIONS

Delete without substitution:

502.8 Additions to Group E facilities. For additions to Group E occupancies, storm shelters shall be provided in accordance with Section 1106.1.

SECTION 1106
STORM SHELTERS

Revise as follows:

1106.1.1 303.2.1 Required occupant capacity. The required occupant capacity of the storm shelter shall include all buildings on the site, and shall be the greater of the following:

1. The total occupant load of the classrooms, vocational rooms and offices in the Group E occupancy.
2. The occupant load of any indoor assembly space that is associated with the Group E occupancy.

Exceptions:

1. Where an addition is being added on an existing Group E site, and where the addition is not of sufficient size to accommodate the required occupant capacity of the storm shelter for all of the buildings on-site, the storm shelter shall at a minimum accommodate the required capacity for the addition.
2. Where approved by the code official, the required occupant capacity of the shelter shall be permitted to be reduced by the occupant capacity of any existing storm shelters on the site.

SECTION 1301
GENERAL

1301.2.3 Additions. Additions to existing buildings shall comply with the requirements of the International Building Code or the International Residential Code for new construction. The combined height and area of the existing building and the new addition shall not exceed the height and area allowed by Chapter 5 of the International Building Code. Where a fire wall that complies with Section 706 of the International Building Code is
provided between the addition and the existing building, the addition shall be considered a separate building.

Delete without substitution:

1301.2.3.1 Additions to Group E facilities. For additions to Group E occupancies, storm shelters shall be provided in accordance with Section 1106.1.

Reason: Where storm shelters are required in Group E additions was added to the 2018 IEBC Section 502.8, 1106 and 1301.2.3.1. There needs to be a reference to ICC 500 if someone builds a storm shelter inside an existing building – either voluntarily or to meet the occupant capacity requirement or travel distances set up in 1106. This new text is not a requirement for a shelter, but instead what to do if one is provided. The language is similar to Section IBC Section 423. The last sentence in Section 303.1 would also clarify the difference between and shelters for after the storm and a storm shelter. This is consistent with IBC Section 423 and the revisions in G59-18. Since this requirement is in the prescriptive method and the work area method, it is suggested to move all the requirements to Chapter 3 as a new section on storm shelters.

This proposal is submitted by the ICC Building Code Action Committee (BCAC) and the ICC 500 Code Development Committee.

BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. Since 2017 the BCAC has held 6 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: https://www.iccsafe.org/codes-tech-support/codes/develop-process/building-code-action-committee-bcac.

The ICC 500 Standards Development committee is responsible for the development of the ICC/NSSA Standard for the Design and Construction of Storm Shelters. The committee is currently working on the development of the 2020 edition. In 2017 the ICC 500 committee held 7 open conference calls. In addition, there were numerous Working Group meetings and conference calls, 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: https://www.iccsafe.org/codes-tech-support/codes/develop-process/standards-development/is-stm.

Cost Impact: The code change proposal will increase the cost of construction
If someone builds a shelter voluntarily in an existing building, this might increase the cost over a shelter that did not comply with ICC 500. However, this is a necessary safety requirement for all storm shelters.
EB15-19

IEBC®: [BS] 303.3

Proponent: Terry Kozlowski, representing Southern Nevada Chapter; Amanda Moss, representing SN-ICC Member; Cassidy Wilson, representing SN-ICC Member; Nenad Mirkovic, representing City of Las Vegas; Valarie Evans, representing Southern Nevada Chapter

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

2018 International Existing Building Code

Revise as follows:

[BS] 303.3 Seismic evaluation and design procedures. Where required, seismic evaluation or design shall be based on the procedures and criteria in this section, regardless of which compliance method is used.

Exception: Where a Change of occupancy to Group A with an occupant load not to exceed 500 occurs in an existing one-story building a seismic evaluation is not required.

Reason: More than 12,000 stores in 2018 and 50% of the 1,200 shopping malls across the U.S. are expected to close by 2023. This alarming trend will impact future redevelopment efforts in these existing structures. This proposal will promote the redevelopment efforts of municipalities, by reducing the construction cost without compromising security and safety of the occupants. This proposal does not adversely impact any of the architectural and/or fire design requirements. This proposal will increase the threshold from 300 to 500 occupants.

The 300 occupant load threshold may be based on the 1942 Boston fire (Exhibit D) due to the number of fatalities. Fire sprinkler, fire alarm, interior finish and structural design provisions in the code provide more protection in today’s structures.

We looked to the life safety egress provisions where 500 is the threshold for when a 3rd exit is required as a good point to upgrade the structural threshold. 500 is also consistent with the current Risk Category III threshold for post 12th grade educational occupancies.

The following link states the IBC and/or IEBC: “is a model code that provides minimum requirements to safeguard the public health, safety and general welfare of the occupants of new and existing buildings and structures…” https://en.wikipedia.org/wiki/List_of_earthquakes_in_the_United_States

When reviewing a list of notable earthquakes and fatalities associated with events from January 26, 1700 to January 23, 2018 (318 years), there have been approximately 3,919 fatalities https://en.wikipedia.org/wiki/List_of_earthquakes_in_the_United_States. In comparison, the following link shows motor vehicle deaths in the U.S. for the last 11 years. https://en.wikipedia.org/wiki/Motor_vehicle_fatalities_in_U.S._by_year. In 2017 alone, there were 37,133 vehicle deaths. The following link (2007-2016) show there were 145 fire-related fatalities and 1,550 injuries in non-residential fires. https://www.usfa.fema.gov/downloads/pdf/statistics/nonres_bldg_fire_estimates.pdf These statistics provide comparison in historical data as to the number of deaths in structures during earthquakes.
EXHIBIT “A”
**EXHIBIT "B"**

### FIRE SEPARATIONS REQUIRED FOR MIXED OCCUPANCY

<table>
<thead>
<tr>
<th>OCCLUSION</th>
<th>GROUP AND SEPARATION OF OCCUPANCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>B</td>
<td>A</td>
</tr>
<tr>
<td>C</td>
<td>A</td>
</tr>
<tr>
<td>D</td>
<td>A</td>
</tr>
<tr>
<td>E</td>
<td>A</td>
</tr>
<tr>
<td>F</td>
<td>A</td>
</tr>
<tr>
<td>G</td>
<td>A</td>
</tr>
<tr>
<td>H</td>
<td>A</td>
</tr>
</tbody>
</table>

**Legend:**
- X—Ordinary Separation
- O—Ordinary Separation
- S—No Separation

**Note:**
- "Group O" (over for Group I) shall be for the occupied building in accordance with the separation of the building.
- "Group O" (over for Group II) shall be for the occupied building in accordance with the separation of the building.
- "Group O" (over for Group III) shall be for the occupied building in accordance with the separation of the building.
- "Group O" (over for Group IV) shall be for the occupied building in accordance with the separation of the building.
- "Group O" (over for Group V) shall be for the occupied building in accordance with the separation of the building.
- "Group O" (over for Group VI) shall be for the occupied building in accordance with the separation of the building.
- "Group O" (over for Group VII) shall be for the occupied building in accordance with the separation of the building.
- "Group O" (over for Group VIII) shall be for the occupied building in accordance with the separation of the building.
- "Group O" (over for Group IX) shall be for the occupied building in accordance with the separation of the building.
- "Group O" (over for Group X) shall be for the occupied building in accordance with the separation of the building.
### TABLE NO. 5-A—GROUPS OF OCCUPANCY

| Group | DIVISION | Work- 
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6 A</td>
<td>Assembly Buildings</td>
<td>Yes 1000 or more</td>
</tr>
<tr>
<td>7 B</td>
<td>Assembly Buildings</td>
<td>Yes 1500 or more</td>
</tr>
<tr>
<td>8 C</td>
<td>Any building used for school purposes, including classrooms, libraries, auditoriums, or recreation...</td>
<td></td>
</tr>
<tr>
<td>9 D</td>
<td>1-Juvenile institutions, houses of correction, and buildings where persons are generally admitted...</td>
<td></td>
</tr>
<tr>
<td>10 E</td>
<td>Public garages, sales or parking stations, dry cleaning plants using flammable solvents, paint shops...</td>
<td></td>
</tr>
<tr>
<td>11 F</td>
<td>Wholesale and retail stores, retail buildings, restaurants, and store...</td>
<td></td>
</tr>
<tr>
<td>12 G</td>
<td>Ice plants, power plants, pumping facilities, boiler rooms, and steam...</td>
<td></td>
</tr>
<tr>
<td>13 H</td>
<td>Flats, apartments, townhouses, dormitories, bunkhouse...</td>
<td></td>
</tr>
<tr>
<td>14 I</td>
<td>Dwelling...</td>
<td></td>
</tr>
<tr>
<td>15 J</td>
<td>Private garages, shops and similar buildings used as accessory only when not over 1000 square feet (93 sq. m) in area...</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** The table continues with additional groups and divisions, but the above are the first few entries.
### Table 5-A: Uniform Building Code

#### Table No. 5-A—Groups of Occupancy

<table>
<thead>
<tr>
<th>Group</th>
<th>DIVISION</th>
<th>Statute Capacity</th>
<th>In Any One Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>assemble buildings</td>
<td>Yes</td>
<td>Less than 1000</td>
</tr>
<tr>
<td></td>
<td>assembly buildings</td>
<td>Yes</td>
<td>Less than 1000</td>
</tr>
<tr>
<td></td>
<td>assembly buildings</td>
<td>Yes</td>
<td>Less than 1000</td>
</tr>
<tr>
<td></td>
<td>assembly buildings</td>
<td>Yes</td>
<td>Less than 1000</td>
</tr>
<tr>
<td>A</td>
<td>Office, commercial, and amusement park structures not included within Groups A and Divisions 1, 2, and 3, of Group B.</td>
<td>Yes</td>
<td>Less than 1000</td>
</tr>
<tr>
<td>B</td>
<td>Public storage, switch or protective storage, dry cleaning plants using flammable liquids, paint shops, and spray painting stands and booths.</td>
<td>Yes</td>
<td>Less than 1000</td>
</tr>
<tr>
<td>C</td>
<td>Industrial and warehouse buildings using materials not highly flammable or explosive materials and liquids.</td>
<td>Yes</td>
<td>Less than 1000</td>
</tr>
<tr>
<td>D</td>
<td>Industrial and warehouse buildings using materials not highly flammable or explosive materials and liquids.</td>
<td>Yes</td>
<td>Less than 1000</td>
</tr>
<tr>
<td>E</td>
<td>Industrial and warehouse buildings using materials not highly flammable or explosive materials and liquids.</td>
<td>Yes</td>
<td>Less than 1000</td>
</tr>
<tr>
<td>F</td>
<td>Industrial and warehouse buildings using materials not highly flammable or explosive materials and liquids.</td>
<td>Yes</td>
<td>Less than 1000</td>
</tr>
<tr>
<td>G</td>
<td>Industrial and warehouse buildings using materials not highly flammable or explosive materials and liquids.</td>
<td>Yes</td>
<td>Less than 1000</td>
</tr>
<tr>
<td>H</td>
<td>Industrial and warehouse buildings using materials not highly flammable or explosive materials and liquids.</td>
<td>Yes</td>
<td>Less than 1000</td>
</tr>
<tr>
<td>I</td>
<td>Industrial and warehouse buildings using materials not highly flammable or explosive materials and liquids.</td>
<td>Yes</td>
<td>Less than 1000</td>
</tr>
<tr>
<td>J</td>
<td>Industrial and warehouse buildings using materials not highly flammable or explosive materials and liquids.</td>
<td>Yes</td>
<td>Less than 1000</td>
</tr>
</tbody>
</table>
Bibliography:
1. 1927 UBC (occupancy Group C-1) it is seating capacity in any one room of less than 500 (Exhibit "B");
2. 1943 UBC (occupancy Group B-2) it is seating capacity in any one room of 100 or more (Exhibit “B”);
3. November 1942 Boston Night Club Fire (see LA Times form 11/29/1942, Exhibit “A”) It should be noted that the 1943 UBC was approved for printing on 10/1942, prior to the fire);
4. 1946 UBC, occupancy Group B-2 with seating capacity in any one room of 300 or more and occupancy Group B-3 with seating capacity in any one room of less than 300 (Exhibit “B”);
5. 1949 IBC occupancy Group B-2 with an occupant load in the building of 300 or more and occupancy Group B-3 with an occupant load in the building of less than 300 (Exhibit “B”).

Cost Impact: The code change proposal will decrease the cost of construction
This proposal will decrease the cost of construction for structures with an occupant load of less than 500 by eliminating the requirement of seismic analysis and potential additional costs associated with improvements to existing structures.
EB16-19
IEBC®: 303.4 (New); IBC®: ACI Chapter 35 (New)

Proponent: Stephen Szoke, American Concrete Institute, representing American Concrete Institute (steve.szoke@concrete.org); Kenneth Lozen, International Concrete Repair Institute, representing International Concrete Repair Institute (kenl@icri.org); Charles Hanskat, American Shotcrete Association, representing American Shotcrete Association (charles.hanskat@shotcrete.org); Randy Shackelford, P.E., Simpson Strong-Tie Co., representing Simpson Strong-Tie Co. (rshackelford@strongtie.com); Keith Kesner, CVM Engineers, representing CVM Professional; David Whitmore, Vector Corrosion Technologies Ltd., representing Vector Corrosion Technologies Ltd. (davidw@vector-corrosion.com); Kyle Stanish, Klein & Hoffman, representing Klein & Hoffman (kstanish@kleinandhoffman.com); Garth Fal le, Vector Construction Ltd., representing Vector Construction Ltd. (garth@vector-construction.com); Matt Miltenberger, Vector Corrosion Services Inc., representing Vector Corrosion Services Inc. 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THIS CODE CHANGE WILL BE HEARD BY THE IBC STRUCTURAL COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.

2018 International Existing Building Code

Add new text as follows:

303.4 Concrete evaluation and design procedures. Evaluation and design of repairs of structural concrete in compliance with ACI 562 and this code shall be permitted. ACI 562 shall not be used to comply with provisions of this code that involve the classification of earthquake damage or the evaluation or retrofit of structures using load combinations that include earthquake load effects. The following Sections of ACI 562 are not applicable:

1. Section 1.3.8 for seismic resistance
2. Section 4.1.4 for determining the rehabilitation category of work
3. Section 4.7 for additions
4. Section 4.8 for alterations
5. Section 4.9 for change in occupancy
2018 International Building Code
Add new standard(s) as follows:

ACI

562-19: Code Requirements for Assessment, Repair, and Rehabilitation of Existing Concrete Structures

Reason: Concept – This code change proposal adds ACI 562: Code Requirements for Assessment, Repair, and Rehabilitation of Existing Concrete Structures, to establish minimum requirements for the design, construction, repair, and rehabilitation of concrete structural elements in buildings for various levels of desired performance as deemed appropriate for the project. In addition to improved life safety, the requirements clearly define objectives and anticipated performance for the code official, owners, designers, contractors and installers. The proposed language is permissive, allowing other methods to be used to comply with the intent of the building code. Further Section 104.11 of the IEBC allows for alternative design methods:

"104.11 Alternative materials, design and methods of construction, and equipment. The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternative material, design, or method of construction shall be approved where the code official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method, or work offered is, for the purpose intended, not less than the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety. Where the alternative material, design or method of construction is not approved, the code official shall respond in writing, stating the reasons why the alternative was not approved."

The public discussion version of this standards is available at: www.concrete.org/publications/standards/upcomingstandards.aspx

Background – In 2006, the repair industry approached ACI asking for a concrete repair and rehabilitation code that would improve the overall quality of concrete repairs by establishing common requirements and establishing clear responsibilities between owners, designers, and contractors. This code would also provide building code officials with a reference by which to evaluate rehabilitated concrete structures. ACI, following its rigorous American National Standards Institute accredited standards development process assembled a code committee with balanced representation and produced the first official code in 2012. The committee members reviewed and considered numerous reports and publications related to concrete repair and rehabilitation to identify and develop requirements consistent with current industry practice. The committee has received feedback from users of the code and are now completing their third version of this code, ACI 562-19.

Scope – ACI 562-19 complements the IEBC by providing specific direction on how to design concrete repairs and how to handle the unique construction problems associated with repair. This standard helps the designer assess the existing structure in accordance with the IEBC. The standard then provides the requirements that bridge the inconsistencies and gaps in acceptable criteria that occur from the two following situations that a designer must solve: one, repairing a structure according to the original building code used at the time it was built using today's construction methods and materials; or, repairing a structure built according to an older building code but repaired according to the latest building code. Note that ACI 562 does not directly address the evaluation of lateral-force resisting systems in high seismic areas. ASCE 41 is the appropriate standard for this situation as stated in the IEBC and ACI 562.

Benefits – There are many benefits that ACI 562 provides for the designer, owner, contractor, materials providers, building code official and the public. A few of these benefits are:

- Provides a level of expectation of life safety to the public in buildings where repairs or rehabilitation is performed on concrete structural elements.
- Provides clearly defined, uniform requirements aimed at extending the service life of existing structures.
- Provides minimum requirements for safety and quality of concrete repair.
- Establishes clear responsibilities between owners, designers, and contractors.
- Provides building code officials with a means to evaluate rehabilitation designs.
- Provides specific repair requirements that often result in less costly repairs compared to repairs required to meet only new construction requirements.

Flexibility – ACI 562 permits flexibility in evaluation, design, construction and repair materials to provide economies while establishing expected performance for the service-life of the rehabilitation or repairs.

Resources – Also, there many resources that complement ACI 562. Among these are:

- ACI 563-18, Specifications for Repair of Structural Concrete in Buildings
- MNL-3(16) Guide to the Code for Assessment, Repair, and Rehabilitation of Existing Concrete Structures
These resources are readily available to provide greater understanding of assessment, repair and rehabilitation of concrete structural elements. ACI MNL-3 provides case studies demonstrating the ease of use of ACI 562. Numerous technical notes, reports, guides, and specifications that provide background information and technical support are available through other organizations, such as American Society of Civil Engineers, British Research Establishment, Concrete Society, International Concrete Repair Institute, National Association of Corrosion Engineers, Post-Tensioning Institute, Society for Protective Coatings, and US Army Corps of Engineers. Many of these organizations publications related to concrete repair can be found in the Concrete Repair Manual.

Sustainability - Reference of ACI 562 in the IEBC will help improve the confidence of owners, builders, and developers regarding effective repairs, upgrades, and reuse of existing buildings in lieu of demolition and replacement. Typically, extending the life of existing buildings is substantially more sustainable than demolition and new construction. Adoption of ACI 562 by reference is needed to help facilitate efforts that conserve energy and resources while maintaining a minimum level of requirements to ensure reasonable levels of life safety, and welfare are afforded to the public.

State and Local Adoptions – Jurisdictions see the need for these requirements. As the model for state and local adoptions, the IEBC should include this reference with appropriate charging language. ACI 562 is already being used in several jurisdictions:

Hawaii: Hawaii was the first state to adopt ACI 562 by reference. The following provisions are included in the State Building Code Council HAWAII STATE BUILDING CODE, which became effective on November 13, 2018:

“3401.6 Alternative compliance.

1) Work performed in accordance with the International Existing Building Code shall be deemed to comply with the provisions of this chapter.

2) Work performed in accordance with the 2016 version of the American Concrete Institute Committee 562, “Code Requirements for Assessment, Repair, and Rehabilitation of Existing Concrete Structures” shall be deemed to comply with this chapter when used as a supplement to the requirements of this chapter or the International Existing Building Code. Wherever the term International Existing Building Code (IEBC) is used in ACI 562-16, it shall mean International Existing Building Code or Chapter 34 of the International Building Code.”

Ohio: The Ohio Board of Building Standards Ohio adopted rule changes identified as Amendments Group 95. Included in this group is:

3401.6 Concrete evaluation and design procedures. Evaluation and design of structural concrete repairs and rehabilitation shall be in compliance with Chapter 34 and ACI 562.

ACI, a professional technical society, has developed this standard in response to industry needs and to help assure minimum levels of life safety results where repairs and rehabilitation are associated with concrete structural elements. For this reason and the other benefits identified in this reason statement, ACI recommends this code change proposal for committee approval as submitted.

New York City: The New York City Buildings Department issued BUILDINGS BULLETIN 2015-017 in December 2017 Conditions of Acceptance for Fiber Reinforced Cementitious Matrix strengthening systems.

FRCM shall comply with the NYC Construction Codes and the following applicable provisions:

A. Design

1. FRCM system shall be designed in accordance with the ACI 549.4R-132 Guide for the Design and Construction of Externally Bonded Fabric-Reinforced Cementitious Matrix (FRCM) Systems for Repair and Strengthening Concrete and Masonry Structures with properties used for design obtained from tests performed in accordance with AC 434. Fire-resistance-rating and interior finish requirements shall be in accordance with the NYC Construction Codes, manufacturer’s recommendations and the conditions of the required listing.

2. For repairs and upgrade achieved with unprotected external FRCM, the increase in flexural or shear strength provided by the external reinforcing system shall not exceed 50% of the existing structural capacity of the member prior to strengthening. This increase should be checked before applying the strength reduction factor.

3. Careful consideration should be given to determine reasonable strengthening limits. These limits are imposed to guard against collapse of the structure should bond or other failure of the FRCM system occur due to damage, vandalism, or other causes. The required strength of a structure without repair should be as specified in accordance with ACI 562 Code Requirements for Assessment, Repair, and Rehabilitation of Existing Concrete Structures Section 5.5.

Recommendation – ACI, a professional technical society, has developed this ACI 562 in response to industry needs and to help assure minimum levels of life safety, health, and welfare for the public. For this reason and the other benefits identified in this reason statement, ACI recommends this code change proposal for committee approval as submitted.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. The use of this referenced standard should in many cases reduce the cost of repair. Too often in the process of repair, there is insufficient information to determine acceptance criteria that is amicable to both the owner and the building code official. The result is the determination that the repair must meet the latest building code requirements for new construction. This standard increases the options available for repair and provides the acceptance criteria necessary to permit these options. A case study that illustrates this point: "ACI 562 has been referenced in expert reports for litigation cases, resulting in significantly reduced financial settlements. Denver-based J. R. Harris & Company recently used the code as a standard in several litigation reports assessing damages in existing concrete structures. As an approved consensus standard, according to American National Standards Institute (ANSI) procedures, ACI 562-13 has been accepted as the source standard to use for damage assessment and repair on individual projects by Greenwood Village and Pikes Peak Regional Building Departments in Colorado. Based on this acceptance, the consulting engineer was able to cite the code in their recommendation for structural remediation and determination of damages. In one case involving rehabilitation work on four buildings with faulty construction, J.R. Harris was able to reduce the repair costs from $12 million to $3 million, with a repair plan based on the lesser of the demand-capacity ratio based on either the original or current building code per ACI 562."

Staff Analysis: A review of the standard proposed for inclusion in the code, ACI 562-19, 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, 2018.
2018 International Existing Building Code

CHAPTER 3 PROVISIONS FOR ALL COMPLIANCE METHODS

Revise as follows:

SECTION 301
ADMINISTRATION SCOPE

301.1 General. Applicability. The repair, alteration, change of occupancy, addition or relocation of all existing buildings shall comply with Section 301.2, 301.3, or 301.4. The provisions of Sections 302 through 305 shall apply to all alterations, repairs, additions, relocation of structures and changes of occupancy regardless of compliance method.

SECTION 302
GENERAL PROVISIONS

Delete without substitution:

302.1 Applicability. The provisions of Section 302 apply to all alterations, repairs, additions, relocations of structures and changes of occupancy regardless of compliance method.

SECTION 503
ALTERATIONS

Revise as follows:

503.1 General. Except as provided by Section 302.4, 302.5 or this section, alterations. Alterations to any building or structure shall comply with the requirements of the International Building Code for new construction. Alterations shall be such that the existing building or structure is not less complying with the provisions of the International Building Code than the existing building or structure was prior to the alteration.

 Exceptions:

1. An existing stairway shall not be required to comply with the requirements of Section 1011 of the International Building Code where the existing space and construction does not allow a reduction in pitch or slope.
2. Handrails otherwise required to comply with Section 1011.11 of the International Building Code shall not be required to comply with the requirements of Section 1014.6 of the International Building Code regarding full extension of the handrails where such extensions would be hazardous because of plan configuration.
3. Where provided in below-grade transportation stations, existing and new escalators shall have a clear width of less than 32 inches (815 mm).

Reason: An intent of the IEBC changes creating the 2018 edition was to make the provisions of Chapter 3 applicable to all existing building work regardless of the compliance method chosen. Our group's concern was that the route a code user must follow to get to requirements of Section 305 was unclear. Section 305 contains provisions which are 'exceptions' from compliance with the IBC and the ICC A117.1 standard; thus the text of 503.1 is incomplete because it doesn't like you to exceptions in Section 305. Section 305 is similar to 302.4 and 302.5 in that something less than full compliance with IBC is allowed. We noticed that the other compliance methods had no link within them to Chapter 3. The real problem, and the solution, is in the beginning of Chapter 3 where it fails to clearly state its purpose except in the title to the chapter. Titles are not code. It is essential that Section 301.1 state that Chapter 3 applies to all compliance methods as the title states.

We further noticed that 302.1 had such language covering Section 302 – but the rest of the chapter has no such statement. This proposal fixes it. Once stated in Section 301.1, it isn't needed in 302. Once stated in 301, exceptions aren't needed in 503 or in any of the other compliance methods. We also recommend the title of 301 be changed to either Scope or Applicability. Administration is something for Chapter 1 and not appropriate here.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. The change provides an editorial correction to make sure the user understands that Section 305 also allows construction of alterations to a different and lesser technical requirement. And to make sure that the text of the Chapter is corrected to reflect the title – provisions for All Compliance Methods.
EB18-19

IEBC®: 303.4 (New), [BS] 401.3

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

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

2018 International Existing Building Code

Add new text as follows:

303.4 Flood Loads Within flood hazard areas as established in Chapter 16 of the IBC, all existing buildings, structures and portions of buildings and structures, including substantial improvement and restoration of substantial damage to buildings and structures, shall be designed and constructed to resist the effects of flood hazards and flood loads. For buildings that are located in more than one flood hazard area, the provisions associated with the most restrictive flood hazard area shall apply.

[BS] 401.3 Flood hazard areas. In flood hazard areas, repairs that constitute substantial improvement shall require that the building comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.

Reason: The IEBC does not include specific criteria for structures damaged by flood. New Section 303.4 will provide guidance and specific limitations on how flood loads must be addressed in existing buildings within flood hazard areas when undergoing substantial improvements and restoration of substantial damage.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

This change will clarify how the code is to be applied when existing structures are undergoing restoration or renovations due to flood damage when located in a flood zone. Currently the code is silent.
**EB19-19**

IEBC®: SECTION 305, 305.1, 305.2, 305.3, 305.4, 305.4.1, 305.4.2, 305.5, 305.6, 305.8, 305.8.1, 305.8.2, 305.8.3, 305.8.4, 305.8.5, TABLE 305.8.5, 305.8.6, 305.8.7, 305.8.8, 305.8.9, 305.8.10, 305.8.11, 305.8.12, 305.8.13, 305.8.14, 305.8.15, 305.7.16 (New), 305.7, 305.9, 305.9.1, 305.9.2, 305.9.3, 305.9.4

Proponent: Eirene Knott, representing Metropolitan Kansas City Chapter of the ICC (Eirene.Knott@brrarch.com)

**2018 International Existing Building Code**

Revise as follows:

**SECTION 305**

**ACCESSIBILITY FOR EXISTING BUILDINGS**

305.1 Scope. The provisions of Sections 305.1 through 305.9 apply to maintenance, *change of occupancy*, *additions* and *alterations* to existing buildings, including those identified as *historic buildings*.

305.2 Maintenance of facilities. A *facility* that is constructed or altered to be *accessible* shall be maintained *accessible* during occupancy.

305.3 Extent of application. An *alteration* of an existing *facility* shall not impose a requirement for greater accessibility than that which would be required for new construction. *Alterations* shall not reduce or have the effect of reducing accessibility of a *facility* or portion of a *facility*.

305.4 Change of occupancy. *Existing buildings* that undergo a change of group or occupancy shall comply with this section.

   **Exception:** Type B dwelling or sleeping units required by Section 1107 of the International Building Code are not required to be provided in existing buildings and facilities undergoing a *change of occupancy* in conjunction with *alterations* where the *work area* is 50 percent or less of the aggregate area of the building.

305.4.1 Partial change of occupancy. Where a portion of the building is changed to a new occupancy classification, any *alterations* shall comply with Sections 305.6, 305.7 and 305.8.

305.4.2 Complete change of occupancy. Where an entire building undergoes a *change of occupancy*, it shall comply with Section 305.4.1 and shall have all of the following accessible features:

1. Not fewer than one accessible building entrance.
2. Not fewer than one accessible route from an accessible building entrance to *primary function* areas.
4. Accessible parking, where parking is being provided.
5. Not fewer than one accessible passenger loading zone, where loading zones are provided.
6. Not fewer than one accessible route connecting accessible parking and accessible passenger loading zones to an accessible entrance.

Where it is *technically infeasible* to comply with the new construction standards for any of these requirements for a change of group or occupancy, Items 1 through 6 shall conform to the requirements to the maximum extent technically feasible.

   **Exception:** The accessible features listed in Items 1 through 6 are not required for an accessible route to Type B units.

305.5 Additions. Provisions for new construction shall apply to *additions*. An *addition* that affects the accessibility to, or contains an area of, a *primary function* shall comply with the requirements in Section 305.7–305.8.

305.6 Alterations. A *facility* that is altered shall comply with the applicable provisions in Chapter 11 of the International Building Code, unless *technically infeasible*. Where compliance with this section is *technically infeasible*, the *alteration* shall provide access to the maximum extent technically feasible.

   **Exceptions:**

1. The altered element or space is not required to be on an accessible route, unless required by Section 305.7–305.8.
2. Accessible means of egress required by Chapter 10 of the International Building Code are not required to be provided in existing facilities.
3. The *alteration* to Type A individually owned dwelling units within a Group R-2 occupancy shall be permitted to meet the provision for a Type B dwelling unit.
4. Type B dwelling or sleeping units required by Section 1107 of the International Building Code are not required to be provided in *existing buildings* and facilities undergoing *alterations* where the *work area* is 50 percent or less of the aggregate area of the building.
305.8.3 Scoping for alterations. The provisions of Sections 305.8.1 through 305.8.15 shall apply to alterations to existing buildings and facilities.

305.8.4.1 305.7.1 Entrances. Where an alteration includes alterations to an entrance that is not accessible, and the facility has an accessible entrance, the altered entrance is not required to be accessible unless required by Section 305.7. Signs complying with Section 1111 of the International Building Code shall be provided.

305.8.4.2 305.7.2 Elevators. Altered elements of existing elevators shall comply with ASME A17.1 and ICC A117.1. Such elements shall also be altered in elevators programmed to respond to the same hall call control as the altered elevator.

305.8.4.3 305.7.3 Platform lifts. Platform (wheelchair) lifts complying with ICC A117.1 and installed in accordance with ASME A18.1 shall be permitted as a component of an accessible route.

305.8.4.4 305.7.4 Stairways and escalators in existing buildings. Where an escalator or stairway is added where none existed previously and major structural modifications are necessary for installation, an accessible route shall be provided between the levels served by the escalator or stairways in accordance with Section 1104.4 of the International Building Code.

305.8.4.5 305.7.5 Ramps. Where slopes steeper than allowed by Section 1012.2 of the International Building Code are necessitated by space limitations, the slope of ramps in or providing access to existing facilities shall comply with Table 305.8.5-305.7.5.

<table>
<thead>
<tr>
<th>SLOPE</th>
<th>MAXIMUM RISE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steeper than 1:10 but not steeper than 1:8</td>
<td>3 inches</td>
</tr>
<tr>
<td>Steeper than 1:12 but not steeper than 1:10</td>
<td>6 inches</td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4 mm.

305.8.6 305.7.6 Accessible dwelling or sleeping units. Where Group I-1, I-2, I-3, R-1, R-2 or R-4 dwelling or sleeping units are being altered or added, the requirements of Section 1107 of the International Building Code for Accessible units apply only to the quantity of spaces being altered or added.

305.8.7 305.7.7 Type A dwelling or sleeping units. Where more than 20 Group R-2 dwelling or sleeping units are being altered or added, the requirements of Section 1107 of the International Building Code for Type A units apply only to the quantity of spaces being altered or added.

305.8.8 305.7.8 Type B dwelling or sleeping units. Where four or more Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being added, the requirements of Section 1107 of the International Building Code for Type B units apply only to the quantity of the spaces being added. Where Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being altered and where the work area is greater than 50 percent of the aggregate area of the building, the requirements of Section 1107 of the International Building Code for Type B units apply only to the quantity of the spaces being altered.

305.8.9 305.7.9 Jury boxes and witness stands. In alterations, accessible wheelchair spaces are not required to be located within the defined area of raised jury boxes or witness stands and shall be permitted to be located outside these spaces where the ramp or lift access restricts or projects into the required means of egress.

305.8.10 305.7.10 Toilet rooms. Where it is technically infeasible to alter existing toilet and bathing rooms to be accessible, an accessible family or assisted-use toilet or bathing room constructed in accordance with Section 1109.2.1 of the International Building Code is permitted. The family or assisted-use toilet or bathing room shall be located on the same floor and in the same area as the existing toilet or bathing rooms. At the inaccessible toilet and bathing rooms, directional signs indicating the location of the nearest family or assisted-use toilet room or bathing room shall be provided. These directional signs shall include the International Symbol of Accessibility and sign characters shall meet the visual character requirements in accordance with ICC A117.1.

305.8.11 305.7.11 Additional toilet and bathing facilities. In assembly and mercantile occupancies, where additional toilet fixtures are added, not fewer than one accessible family or assisted-use toilet room shall be provided where required by Section 1109.2.1 of the International Building Code. In recreational facilities, where additional bathing rooms are being added, not fewer than one family or assisted-use bathing room shall be provided where required by Section 1109.2.1 of the International Building Code.

305.8.12 305.7.12 Dressing, fitting and locker rooms. Where it is technically infeasible to provide accessible dressing, fitting or locker rooms at the same location as similar types of rooms, one accessible room on the same level shall be provided. Where separate-sex facilities are provided, accessible rooms for each sex shall be provided. Separate-sex facilities are not required where only unisex rooms are provided.

305.8.13 305.7.13 Fuel dispensers. Operable parts of replacement fuel dispensers shall be permitted to be 54 inches (1370 mm) maximum, measuring from the surface of the vehicular way where fuel dispensers are installed on existing curbs.
305.8.14 Thresholds. The maximum height of thresholds at doorways shall be 3/4 inch (19.1 mm). Such thresholds shall have beveled edges on each side.

305.8.15 Amusement rides. Where the structural or operational characteristics of an amusement ride are altered to the extent that the amusement ride’s performance differs from that specified by the manufacturer or the original design, the amusement ride shall comply with requirements for new construction in Section 1110.4.8 of the International Building Code.

Add new text as follows:

305.7.16 Dining Areas. An accessible route shall be provided throughout the dining area.

Exception: An accessible route to raised or sunken areas or to outdoor seating areas is not required provided the same services and decor are provided in an accessible space.

Revise as follows:

305.8 Alterations affecting an area containing a primary function. Where an alteration affects the accessibility to, or contains an area of primary function, the route to the primary function area shall be accessible. The accessible route to the primary function area shall include toilet facilities and drinking fountains serving the area of primary function.

Exceptions:

1. The costs of providing the accessible route are not required to exceed 20 percent of the costs of the alterations affecting the area of primary function.
2. This provision does not apply to alterations limited solely to windows, hardware, operating controls, electrical outlets and signs.
3. This provision does not apply to alterations limited solely to mechanical systems, electrical systems, installation or alteration of fire protection systems and abatement of hazardous materials.
4. This provision does not apply to alterations undertaken for the primary purpose of increasing the accessibility of a facility.
5. This provision does not apply to altered areas limited to Type B dwelling and sleeping units.

305.9 Historic buildings. These provisions shall apply to facilities designated as historic structures that undergo alterations or a change of occupancy, unless technically infeasible. Where compliance with the requirements for accessible routes, entrances or toilet rooms would threaten or destroy the historic significance of the facility, as determined by the authority having jurisdiction, the alternative requirements of Sections 305.9.1 through 305.9.4 for that element shall be permitted.

Exception: Type B dwelling or sleeping units required by Section 1107 of the International Building Code are not required to be provided in historic buildings.

305.9.1 Site arrival points. Not fewer than one accessible route from a site arrival point to an accessible entrance shall be provided.

305.9.2 Multiple-level buildings and facilities. An accessible route from an accessible entrance to public spaces on the level of the accessible entrance shall be provided.

305.9.3 Entrances. Not fewer than one main entrance shall be accessible.

Exception: If a public entrance cannot be made accessible, an accessible entrance that is unlocked while the building is occupied shall be provided; or, a locked accessible entrance with a notification system or remote monitoring shall be provided.

Signs complying with Section 1111 of the International Building Code shall be provided at the public entrance and the accessible entrance.

305.9.4 Toilet and bathing facilities. Where toilet rooms are provided, not fewer than one accessible family or assisted-use toilet room complying with Section 1109.2.1 of the International Building Code shall be provided.

Reason: The way the accessibility provisions currently read in the 2018, it's not clear as to when the primary function requirements apply except as directed by Section 305.4.1 for a partial change of occupancy. By relocating the provisions to occur after the list of scoping items, the user can more easily follow the flow of what code language will apply to their project. As it is currently written, it is not clear as to when Section 305.8 (scoping for alterations) will apply. If the flow is changed to be as follows, it makes more sense to the end user:

305.4 - Change of occupancy

305.5 - Additions

305.6 - Alterations

305.7 - Scoping for alterations
305.8 - Alterations affecting a primary function

305.9 - Historic buildings

I also added language to address dining areas, which was in the 2015 IEBC. I re-wrote the language to that it is not writing the exception within the requirement but rather what the requirement is with the exception being provided.

**Cost Impact:** The code change proposal will not increase or decrease the cost of construction
This is just reformatting current language so there is no impact to the construction cost.
IEBC®: SECTION 305.6, 305.6.2 (New), 305.6.3 (New), 305.6.4 (New), 305.8, 305.8.1, 305.8.2, 305.8.3, 305.8.4, 305.8.5, TABLE 305.8.5, 305.9, 305.9.1, 305.9.2, 305.9.3, 305.9.4

Proponent: Gina Hilberry, Scoping Task Group of ICC/A117.1 Standard Development Committee, representing United Cerebral Palsy (gina@cohenhilberry.com); Rick Lupton, representing Self (sparkylupton@msn.com); Marsha Mazz, representing United Spinal Association (m.mazz@verizon.net); Gene Boecker, representing Code Consultants, Inc.(geneb@codeconsultants.com)

2018 International Existing Building Code

SECTION 305 ACCESSIBILITY FOR EXISTING BUILDINGS

Revise as follows:

305.6 Alterations. A facility that is altered shall comply with the applicable provisions in Chapter 11 of the International Building Code, ICC A117.1 and the provisions of Sections 305.6.1 through 305.6.19, unless technically infeasible. Where compliance with this section is technically infeasible, the alteration shall provide access to the maximum extent technically feasible.

Exceptions:

1. The altered element or space is not required to be on an accessible route, unless required by Section 305.7.
2. Accessible means of egress required by Chapter 10 of the International Building Code are not required to be provided in existing facilities.
3. The alteration to Type A individually owned dwelling units within a Group R-2 occupancy shall be permitted to meet the provision for a Type B dwelling unit.
4. Type B dwelling or sleeping units required by Section 1107 of the International Building Code are not required to be provided in existing buildings and facilities undergoing alterations where the work area is 50 percent or less of the aggregate area of the building.

305.7 305.6.1 Alterations affecting an area containing a primary function. Where an alteration affects the accessibility to, or contains an area of primary function, the route to the primary function area shall be accessible. The accessible route to the primary function area shall include toilet facilities and drinking fountains serving the area of primary function.

Exceptions:

1. The costs of providing the accessible route are not required to exceed 20 percent of the costs of the alterations affecting the area of primary function.
2. This provision does not apply to alterations limited solely to windows, hardware, operating controls, electrical outlets and signs.
3. This provision does not apply to alterations limited solely to mechanical systems, electrical systems, installation or alteration of fire protection systems and abatement of hazardous materials.
4. This provision does not apply to alterations undertaken for the primary purpose of increasing the accessibility of a facility.
5. This provision does not apply to altered areas limited to Type B dwelling and sleeping units.

Add new text as follows:

305.6.2 Accessible route. The altered element or space is not required to be on an accessible route, unless required by Section 305.6.1.

305.6.3 Accessible means of egress. Accessible means of egress required by Chapter 10 of the International Building Code are not required to be provided in existing facilities.

305.6.4 Alteration of Type A units. The alteration to Type A individually owned dwelling units within a Group R-2 occupancy shall be permitted to meet the provision for a Type B dwelling unit.

305.6.5 Type B units. Type B dwelling or sleeping units required by Section 1107 of the International Building Code are not required to be provided in existing buildings and facilities undergoing alterations where the work area is 50 percent or less of the aggregate area of the building.

Delete without substitution:

305.8 Scoping for alterations. The provisions of Sections 305.8.1 through 305.8.15 shall apply to alterations to existing buildings and facilities.

Revise as follows:

305.8.1 305.6.6 Entrances. Where an alteration includes alterations to an entrance that is not accessible, and the facility has an accessible
entrance, the altered entrance is not required to be accessible unless required by Section 305.7. Signs complying with Section 1111 of the International Building Code shall be provided.

305.8.2 305.6.7 Elevators. Altered elements of existing elevators shall comply with ASME A17.1 and ICC A117.1. Such elements shall also be altered in elevators programmed to respond to the same hall call control as the altered elevator.

305.8.3 305.6.8 Platform lifts. Platform (wheelchair) lifts complying with ICC A117.1 and installed in accordance with ASME A18.1 shall be permitted as a component of an accessible route.

305.8.4 305.6.9 Stairways and escalators in existing buildings. Where an escalator or stairway is added where none existed previously and major structural modifications are necessary for installation, an accessible route shall be provided between the levels served by the escalator or stairways in accordance with Section 1104.4 of the International Building Code.

305.8.5 305.6.10 Ramps. Where slopes steeper than allowed by Section 1012.2 of the International Building Code are necessitated by space limitations, the slope of ramps in or providing access to existing facilities shall comply with Table 305.6.10.

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For SI: 1 inch = 25.4 mm.

Add new text as follows:

305.6.11 Determination of number of units Where Chapter 11 of the International Building Code requires Accessible, Type A or Type B units, where units are being altered or added, the number of Accessible, Type A and Type B units shall be determined in accordance with Sections 305.6.11.1 through 305.6.11.3.

Revise as follows:

305.8.6 305.6.11.1 Accessible dwelling or sleeping units. Where Group I-1, I-2, I-3, R-1, R-2 or R-4 dwelling or sleeping units are being altered or added, the requirements of Section 1107 of the International Building Code for Accessible units apply only to the quantity of spaces being altered or added.

305.8.7 305.6.11.2 Type A dwelling or sleeping units. Where more than 20 Group R-2 dwelling or sleeping units are being altered or added, the requirements of Section 1107 of the International Building Code for Type A units apply only to the quantity of the spaces being altered or added.

305.8.8 305.6.11.3 Type B dwelling or sleeping units. Where four or more Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being added, the requirements of Section 1107 of the International Building Code for Type B units apply only to the quantity of the spaces being added. Where Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being altered and where the work area is greater than 50 percent of the aggregate area of the building, the requirements of Section 1107 of the International Building Code for Type B units apply only to the quantity of the spaces being altered.

305.8.9 305.6.12 Jury boxes and witness stands. In alterations, accessible wheelchair spaces are not required to be located within the defined area of raised jury boxes or witness stands and shall be permitted to be located outside these spaces where the ramp or lift access restricts or projects into the required means of egress.

305.8.10 305.6.13 Toilet rooms. Where it is technically infeasible to alter existing toilet and bathing rooms to be accessible, an accessible family or assisted-use toilet or bathing room constructed in accordance with Section 1109.2.1 of the International Building Code is permitted. The family or assisted-use toilet or bathing room shall be located on the same floor and in the same area as the existing toilet or bathing rooms. At the inaccessible toilet and bathing rooms, directional signs indicating the location of the nearest family or assisted-use toilet room or bathing room shall be provided. These directional signs shall include the International Symbol of Accessibility and sign characters shall meet the visual character requirements in accordance with ICC A117.1.

305.8.14 305.6.14 Additional toilet and bathing facilities. In assembly and mercantile occupancies, where additional toilet fixtures are added, not fewer than one accessible family or assisted-use toilet or bathing room shall be provided where required by Section 1109.2.1 of the International Building Code. In recreational facilities, where additional bathing rooms are being added, not fewer than one family or assisted-use bathing room shall be provided where required by Section 1109.2.1 of the International Building Code.

305.8.15 305.6.15 Dressing, fitting and locker rooms. Where it is technically infeasible to provide accessible dressing, fitting or locker rooms at the same location as similar types of rooms, one accessible room on the same level shall be provided. Where separate-sex facilities are provided,
accessible rooms for each sex shall be provided. Separate-sex facilities are not required where only unisex rooms are provided.

305.6.16 Fuel dispensers. Operable parts of replacement fuel dispensers shall be permitted to be 54 inches (1370 mm) maximum, measuring from the surface of the vehicular way where fuel dispensers are installed on existing curbs.

305.6.17 Thresholds. The maximum height of thresholds at doorways shall be \( \frac{3}{4} \) inch (19.1 mm). Such thresholds shall have beveled edges on each side.

305.6.18 Amusement rides. Where the structural or operational characteristics of an amusement ride are altered to the extent that the amusement ride’s performance differs from that specified by the manufacturer or the original design, the amusement ride shall comply with requirements for new construction in Section 1110.4.8 of the International Building Code.

305.6.19 Historic buildings. These provisions shall apply to facilities designated as historic structures that undergo alterations or a change of occupancy, unless technically infeasible. Where compliance with the requirements for accessible routes, entrances or toilet rooms would threaten or destroy the historic significance of the facility, as determined by the authority having jurisdiction, the alternative requirements of Sections 305.6.19.1 through 305.6.19.4 for that element shall be permitted.

Exception: Type B dwelling or sleeping units required by Section 1107 of the International Building Code are not required to be provided in historic buildings.

305.6.19.1 Site arrival points. Not fewer than one accessible route from a site arrival point to an accessible entrance shall be provided.

305.6.19.2 Multiple-level buildings and facilities. An accessible route from an accessible entrance to public spaces on the level of the accessible entrance shall be provided.

305.6.19.3 Entrances. Not fewer than one main entrance shall be accessible.

Exception: If a public entrance cannot be made accessible, an accessible entrance that is unlocked while the building is occupied shall be provided; or, a locked accessible entrance with a notification system or remote monitoring shall be provided.

Signs complying with Section 1111 of the International Building Code shall be provided at the public entrance and the accessible entrance.

305.6.19.4 Toilet and bathing facilities. Where toilet rooms are provided, not fewer than one accessible family or assisted-use toilet room complying with Section 1109.2.1 of the International Building Code shall be provided.

Reason: Sections 305.6 through 305.9 all address alterations but there is no connection between the sections. This is a problem when trying to determine the purpose of 305.8. Section 305.8 is titled ‘Scoping for alterations’, however many of the 15 provisions which follow are technical exceptions. Some of them are additional technical requirements. Eleven of the 15 are only found in the IEBC and four of them duplicate exceptions contained in the ICC A117.1 standard. Three of the 15 are telling the user how to calculate a requirement where not all units need to be accessible. The intent of this proposal is editorial. It is simply to provide connections between all of the Sections of 305 specifically addressing alterations. Substantive changes to these sections are found in companion proposals. This proposal does the following.

- It renumbers Section 305.7 to 305.6.1 to indicate that it is a subset of the alterations section. There is a companion proposal to revise the language of 305.6.1 to be more consistent with the corresponding ADA requirement.
- It changes the 4 exceptions now found in Section 305.6 into the next four subsections – 305.6.2 through 305.6.5. Having titled subsections allow for quicker access for code users than sorting through numbered exceptions.
- It deletes the confusing lead in provisions of 305.8 and relocates its various provisions as the next subsections – 305.6.6 through 305.6.18. We have submitted a companion proposal which would delete four of these 9 because they are redundant with exceptions in the ICC A117.1 standard.
- It renumbers Section 305.9 and its subsections to be 305.6.19 because it contains a set of provisions and exceptions unique to historic buildings.
- Finally, it groups 3 provisions into a new subsection 305.6.11. All 3 of these sections provide a calculation methodology for determining the number of required dwelling and/or sleeping units.

Cost Impact: The code change proposal will not increase or decrease the cost of construction.

The intent of this proposal is to be 100% editorial by reorganizing existing provisions into a more logical format.
EB21-19

IEBC®: 305.1, 305.2

**Proponent:** Dawn Anderson, representing self (gonedawning@yahoo.com); Gene Boecker, representing Code Consultants, Inc. (geneb@codeconsultants.com); Dan Buuck, representing National Association of Home Builders (dbuuck@nahb.org); David Collins, representing the American Institute of Architects (dcollins@preview-group.com); Marsha Mazz, representing United Spinal Association (m.mazz@verizon.net)

**2018 International Existing Building Code**

Revise as follows:

**305.1 Scope.** The provisions of Sections 305.1 through 305.9 apply to maintenance repair, change of occupancy, additions and alterations to existing buildings, including those identified as historic buildings.

**305.2 Maintenance-Repair of facilities.** A facility that is constructed or altered to be accessible shall be maintained accessible during occupancy.

**Reason:** Repair is defined in the I-codes as:

[A] REPAIR. The reconstruction, replacement or renewal of any part of an existing building for the purpose of its maintenance or to correct damage.

Repair includes maintenance. In addition, Chapter 4 of the IEBC is titled ‘Repair’. This would clarify how the accessibility requirements are addressed for Chapter 4. Maintenance does not require additional revisions for the path of travel.

**Cost Impact:** The code change proposal will not increase or decrease the cost of construction.

The IEBC addresses repairs, not maintenance. This is a terminology change only.

Proposal #: 4355

EB21-19
EB22-19

IEBC®: 305.2, 305.6, 305.9

Proponent: Dawn Anderson, representing self (gonedawning@yahoo.com); Gene Boecker, representing Code Consultants, Inc. (geneb@codeconsultants.com); Dan Buuck, representing National Association of Home Builders (dbuuck@nahb.org); David Collins, representing the American Institute of Architects (dcollins@preview-group.com); Marsha Mazz, representing United Spinal Association (m.mazz@verizon.net)

2018 International Existing Building Code

Revise as follows:

305.2 Maintenance of facilities. A facility that is constructed or altered to be accessible shall be maintained accessible during occupancy. Required accessible means of egress shall be maintained at all times during construction, demolition, remodeling or alterations and additions to any building.

   Exception: Existing means of egress need not be maintained where approved temporary means of egress and accessible means of egress systems and facilities are provided.

305.6 Alterations. A facility that is altered shall comply with the applicable provisions in Chapter 11 of the International Building Code, unless technically infeasible. Where compliance with this section is technically infeasible, the alteration shall provide access to the maximum extent technically feasible.

   Exceptions:

   1. The altered element or space is not required to be on an accessible route, unless required by Section 305.7.
   2. Accessible means of egress required by Chapter 10 of the International Building Code are not required to be provided added in existing facilities.
   3. The alteration to Type A individually owned dwelling units within a Group R-2 occupancy shall be permitted to meet the provision for a Type B dwelling unit.
   4. Type B dwelling or sleeping units required by Section 1107 of the International Building Code are not required to be provided in existing buildings and facilities undergoing alterations where the work area is 50 percent or less of the aggregate area of the building.

305.9 Historic buildings. These provisions shall apply to facilities designated as historic structures that undergo alterations or a change of occupancy, unless technically infeasible. Where compliance with the requirements for accessible routes, entrances or toilet rooms would threaten or destroy the historic significance of the facility, as determined by the authority having jurisdiction, the alternative requirements of Sections 305.9.1 through 305.9.4 for that element shall be permitted.

   Exceptions: Exception:

   1. Accessible means of egress required by Chapter 10 of the International Building Code are not required to be provided in historic buildings.
   2. Type B dwelling or sleeping units required by Section 1107 of the International Building Code are not required to be provided in historic buildings.

Reason: Building that have been built since 1990 have had to have accessible means of egress. Therefore, it should be clear that those accessible means of egress need to be maintained the same way we are asking for the route into the space to remain accessible. The language is the same at that used in IEBC Section 1505.2. The change to Section 305.6 would effectively not allow for someone to remove an accessible means of egress from an existing building. At the same time, it would not ask for the addition of an accessible means of egress in buildings that were so old that they did not have them. These buildings will continue to be addressed through the fire and safety evacuation requirements in IFC Chapter 4.

The change to Section 305.9 would allow the same exception for historic buildings as currently allowed for existing buildings.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This is already required in new construction. This may be in place in many existing buildings.
EB23-19
IEBC®: SECTION 305, 305.2, 305.2.1 (New), 305.3

Proponent: Gina Hilberry, Scoping Task Group of ICC/A117.1 Standard Development Committee, representing United Cerebral Palsy (gina@cohenhilberry.com); Rick Lupton, representing Self (sparkylupton@msn.com); Marsha Mazz, representing United Spinal Association (m.mazz@verizon.net); Gene Boecker, representing Code Consultants, Inc. (geneb@codeconsultants.com)

2018 International Existing Building Code

SECTION 305 ACCESSIBILITY FOR EXISTING BUILDINGS

305.2 Maintenance of facilities. A facility that is constructed or altered to be accessible shall be maintained accessible during occupancy.

Add new text as follows:

305.2.1 Prohibited reduction in accessibility An alteration that decreases or has the effect of decreasing accessibility of a building, facility or element, thereof, below the requirements for new construction at the time of the alteration is prohibited. The number of accessible elements need not exceed that required for new construction at the time of alteration.

Revise as follows:

305.3 Extent of application. An alteration of an existing facility shall not impose a requirement for greater accessibility than that which would be required for new construction.

Reason: The existing second sentence of Section 305.3 is a distinct limitation from that imposed by the first sentence. It is an important limitation and therefore needs to be its own section. The first sentence of new section 305.2.1 is identical to that found in 305.3 of the 2018 code with one key exception. We propose adding ‘or element thereof’ to the text to make it clear that it’s not just overall accessibility, but also accessibility of individual elements such as a water closet compartment, an elevator, a dwelling unit, or a building entrance which can not be reduced.

The second sentence of the new Section 305.2.1 is new. Its purpose is to address the situation where the number of required accessible elements was reduced between editions of the code. For example, the number of required accessible hotel sleeping room has been reduced between the early and current editions of the IBC. The exception would allow the number of accessible hotel rooms built under the 2003 IBC, to be reduced during an alteration to the number required under the 2018 IBC.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. Separating out the text into Section 305.2.1 and adding the elements reference is, on the whole, an editorial clarification of the existing text. The new second sentence might reduce costs of an alteration because fewer accessible elements may be needed. Such costs would be minor and hard to quantify.
EB24-19

IEBC®: 305.4, 305.4.1

Proponent: Gina Hilberry, Scoping Task Group of ICC/A117.1 Standard Development Committee, representing United Cerebral Palsy (gina@cohenhilberry.com); Rick Lupton, representing Self (sparkylupton@msn.com); Marsha Mazz, representing United Spinal Association (m.mazz@verizon.net); Gene Boecker, representing Code Consultants, Inc.(geneb@codeconsultants.com)

2018 International Existing Building Code

Revise as follows:

305.4 Change of occupancy. *Existing buildings* that undergo a change of group or occupancy shall comply with this section. Sections 305.4.1 or 305.4.2, as applicable.

Exception: Type B dwelling or sleeping units required by Section 1107 of the International Building Code are not required to be provided in *existing buildings* and facilities undergoing a *change of occupancy* in conjunction with alterations where the work area is 50 percent or less of the aggregate area of the building.

305.4.1 Partial change of occupancy. Where a portion of the building is changed to a new occupancy classification, any alterations shall comply with Sections 305.3, 305.6, 305.7 and 305.8.

Reason: The proposal is intended as editorial revisions making the code application clearer to all users.

First - In 305.4 changing 'this section' to specific references to the 2 subsections clarifies what is being required.

Second – In Section 305.4.1, we have added Section 305.3 to those for which compliance is required. Section 305.3 addresses limits to alterations which must be considered for all alterations. We have a companion proposal which splits the requirements of Section 305.3 into two sections; it would be our intent that this proposed reference addition in 305.4.1 also reference both sections.

The reference within Section 305.4.2 takes the user back to Section 305.4.1, therefore the added reference is also picked up for complete changes of occupancy.

Cost Impact: The code change proposal will not increase or decrease the cost of construction.

The changes are editorial. They help users get to the correct sections and to not miss key requirements.

Proposal # 5087
Proponent: Ed Kulik, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2018 International Existing Building Code
Revise as follows:

305.4 Change of occupancy. Existing buildings that undergo a change of group or occupancy shall comply with this section. Sections 305.6, 305.7 and 305.8.

Exception: Type B dwelling or sleeping units required by Section 1107 of the International Building Code are not required to be provided in existing buildings and facilities undergoing a change of occupancy in conjunction with alterations where the work area is 50 percent or less of the aggregate area of the building.

Delete without substitution:

305.4.1 Partial change of occupancy. Where a portion of the building is changed to a new occupancy classification, any alterations shall comply with Sections 305.6, 305.7 and 305.8.

305.4.2 Complete change of occupancy. Where an entire building undergoes a change of occupancy, it shall comply with Section 305.4.1 and shall have all of the following accessible features:

1. Not fewer than one accessible building entrance.
2. Not fewer than one accessible route from an accessible building entrance to primary function areas.
4. Accessible parking, where parking is being provided.
5. Not fewer than one accessible passenger loading zone, where loading zones are provided.
6. Not fewer than one accessible route connecting accessible parking and accessible passenger loading zones to an accessible entrance.

Where it is technically infeasible to comply with the new construction standards for any of these requirements for a change of group or occupancy, Items 1 through 6 shall conform to the requirements to the maximum extent technically feasible.

Exception: The accessible features listed in Items 1 through 6 are not required for an accessible route to Type B units.

Reason: There are several arguments to simplify this section. What this does administratively is take a change of occupancy and make it consistent with requirements for an alteration. This allows flexibility for small properties.

- The federal requirements in the 2010 ADA Standard do not address a change of occupancy – they treat all alterations the same. There is no justification for ICC to require a business in stand alone building to provide additional requirements past what is expected for a business in a multi-tenant building.
- The list in Section 305.4.2 basically lists all the elements in accessible routes, which is addressed in Section 305.7, but does not include bathrooms and drinking fountains. Therefore, it is unclear as to if renovations to those items are required in a complete change of occupancy, where they would be on the list for an alteration and a partial change of occupancy. This list does not add any clarification of improvements to the code.
- This could also be read that a complete change of occupancy would never have to fix the toilet rooms or drinking fountains since it is not in the list. If the alterations are small, allowing someone to spend money to fix the toilet rooms is addressed the needs of many individuals with mobility issue.
- If the part of the route missing is an elevator or extensive front ramp, the cost could make the existing building remain vacant since this section could be viewed as not tied to the 20% maximum cost allowance.
- The arguments against revising this section in past code cycles have all been around the issue of a change of occupancy with no alterations. Many building departments are not involved in changes of occupancy that do not include alterations. Even in jurisdictions that look at this, they do not require alterations for occupancies with lesser hazards. How much should you ask someone to spend if there are no construction costs? If it is a higher hazard, there will mostly likely be alterations – so just use those requirements.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICG Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. Since 2017 the BCAC has held 6 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: https://www.iccsafe.org/codes-tech-support/codes/codedevelopment-process/building-code-actioncommittee-bcac.
**Cost Impact:** The code change proposal will decrease the cost of construction

Requiring the six route requirements in Section 305.4.2 for small buildings that undergo a change of occupancy can be a large cost. It is more appropriate to limit the cost of the route to 20% of the alteration - which this change will allow. In large buildings, this change will have minimal impact since they are more likely to already have the accessible route - or the cost will be a much smaller portion of their budget.
2018 International Existing Building Code

Revise as follows:

305.4 Change of occupancy. Existing buildings that undergo a change of group or occupancy shall comply with this section.

Exception: Type B dwelling or sleeping units required by Section 1107 of the International Building Code are not required to be provided in existing buildings and facilities undergoing a change of occupancy in conjunction with alterations where the work area is 50 percent or less of the aggregate area of the building area.

305.6 Alterations. A facility that is altered shall comply with the applicable provisions in Chapter 11 of the International Building Code, unless technically infeasible. Where compliance with this section is technically infeasible, the alteration shall provide access to the maximum extent technically feasible.

Exceptions:

1. The altered element or space is not required to be on an accessible route, unless required by Section 305.7.
2. Accessible means of egress required by Chapter 10 of the International Building Code are not required to be provided in existing facilities.
3. The alteration to Type A individually owned dwelling units within a Group R-2 occupancy shall be permitted to meet the provision for a Type B dwelling unit.
4. Type B dwelling or sleeping units required by Section 1107 of the International Building Code are not required to be provided in existing buildings and facilities undergoing alterations where the work area is 50 percent or less of the aggregate area of the building area.

305.8.8 Type B dwelling or sleeping units. Where four or more Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being added, the requirements of Section 1107 of the International Building Code for Type B units apply only to the quantity of the spaces being added. Where Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being altered and where the work area is greater than 50 percent of the aggregate building area of the building, the requirements of Section 1107 of the International Building Code for Type B units apply only to the quantity of the spaces being altered.

Reason: When the provisions were combined last cycle, the language specific to the work area method was lost. This is a clarification by using the exact verbiage that describes a Level 3 alteration in Section 604.1.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

This change is editorial.

Proposal # 4368
2018 International Existing Building Code

Revise as follows:

305.4.2 Complete change of occupancy. Where an entire building undergoes a change of occupancy, it shall comply with Section 305.4.1 and shall have all of the following accessible features:

1. Not fewer than one accessible building entrance.
2. Not fewer than one accessible route from an accessible building entrance to primary function areas.
4. Accessible parking, where parking is being provided.
5. Not fewer than one accessible passenger loading zone, where loading zones are provided.
6. Not fewer than one accessible route connecting accessible parking and accessible passenger loading zones to an accessible entrance.

Where it is technically infeasible to comply with the new construction standards for any of these requirements for a change of group or occupancy, Items 1 through 6 shall conform to the requirements to the maximum extent technically feasible.

Exception: The accessible features listed in Items 1 through 6 are not required for an accessible route to Type B units.

Reason: There is no compelling reason to exempt buildings undergoing a complete change of occupancy to a Group R-2 apartment building for providing these 6 listed provisions. It must be first noted that Section 305.4 already exempts buildings where the work area is less than 50%.

305.4 Change of occupancy. Existing buildings that undergo a change of group or occupancy shall comply with this section.

Exception: Type B dwelling or sleeping units required by Section 1107 of the International Building Code are not required to be provided in existing buildings and facilities undergoing a change of occupancy in conjunction with alterations where the work area is 50 percent or less of the aggregate area of the building.

Where the action is a complete change of occupancy – such as an old warehouse to new condominiums, why should there not be an accessible entrance; accessible routes to the new units, signage where appropriate; parking and loading zones where provided and routes to such parking and loading? In all likelihood, these features will be added or altered. Please note that this only applies where there is a change of occupancy for the entire space. This does not impose improvements to the path of travel under Section 305.7 for remodeling areas of primary function. There remains an exception for R-2 uses in Section 305.7.

Cost Impact: The code change proposal will increase the cost of construction.

The deletion of the exception may cause an increase in cost of some changes of occupancy to a Group R-2 building. We think it would be unlikely that a complete change of occupancy to residential where Type B (and likely Type A) units would be provided would not provide an accessible route to those units, nor have an accessible entrance to the building. The cost increase may result in reconfiguring existing parking to provide accessible spaces and providing a route to parking and loading locations.

Proposal # 5089
IEBC®: 305.6

Proponent: Gina Hilberry, Scoping Task Group of ICC/A117.1 Standard Development Committee, representing United Cerebral Palsy (gina@cohenhilberry.com); Rick Lupton, representing Self (sparkylupton@msn.com); Marsha Mazz, representing United Spinal Association (m.mazz@verizon.net); Gene Boecker, representing Code Consultants, Inc.(geneb@codeconsultants.com)

2018 International Existing Building Code

Revise as follows:

305.6 Alterations. A facility that is altered shall comply with the applicable provisions in Chapter 11 of the International Building Code, unless technically infeasible. Where compliance with this section is technically infeasible, the alteration shall provide access to the maximum extent technically feasible.

Exceptions:

1. The altered element or space is not required to be on an accessible route, unless required by Section 305.7.
2. Accessible means of egress required by Chapter 10 of the International Building Code are not required to be provided in existing facilities.
3. The alteration to Type A individually owned dwelling units within a Group R-2 occupancy shall be permitted to meet the provision for a Type B dwelling unit.
4. Type B dwelling or sleeping units required by Section 1107 of the International Building Code are not required to be provided in existing buildings and facilities undergoing alterations where the work area is 50 percent or less of the aggregate area of the building.

Reason: The proposal eliminates exception 1 to the provision of alteration of accessible features in the IEBC. The exception isn’t needed for a few reasons:
1. It serves as a pointer to Section 305.7. Since compliance with 305.7 is applicable to any alteration affecting the area of primary function, the accessible route will be addressed through compliance with Section 305.7. No pointer is needed.
2. It may have been intended to say that an altered element still has to meet accessibility standards even if an accessible route isn’t provided. Such is covered in Chapter 11 of the IBC and the ICC A117.1 standard.
3. It is confusing as an exception. Exceptions should point to something less stringent, but by pointing to Section 305.7, it address something that is more stringent.

As the code user can get to the issues addressed by the exception without the exception, it should just go away.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The deletion of the exception doesn’t change compliance requirements found elsewhere in the IEBC and the IBC, the code just will lose an unclear pointer.
EB29-19

IEBC®: 305.7

Proponent: Gina Hilberry, Scoping Task Group of ICC/A117.1 Standard Development Committee, representing United Cerebral Palsy (gina@cohenhilberry.com); Rick Lupton, representing Self (sparkylupton@msn.com); Marsha Mazz, representing United Spinal Association (m.mazz@verizon.net); Gene Boecker, representing Code Consultants, Inc.(geneb@codeconsultants.com)

2018 International Existing Building Code

Revise as follows:

305.7 Alterations affecting an area containing a primary function. Where an alteration affects the accessibility to, or contains an area of primary function, the route an accessible path of travel to the primary function area shall be accessible provided. The accessible route path of travel to the primary function area shall include an accessible route, toilet facilities and drinking fountains serving the area of primary function.

Exceptions:

1. The costs of providing the accessible route path of travel are not required to exceed 20 percent of the costs of the alterations affecting the area of primary function.
2. The requirement to provide an accessible path of travel does not apply to alterations where alterations within the primary function area are limited solely to windows, hardware, operating controls, electrical outlets and signs.
3. This provision does not apply to alterations limited solely to signs, mechanical systems, electrical systems, installation or alteration of fire protection systems and abatement of hazardous materials.
4. This provision does not apply to alterations undertaken for the primary purpose of increasing the accessibility of a facility.
5. This provision does not apply to altered areas limited to Type B dwelling and sleeping units.

Reason: The IEBC code is unclear with respect to this requirement which derives from the ADA. The term used in the ADA is ‘path of travel’. In the ADA it includes the accessible route to the primary function area as well as the telephones, toilet facilities and drinking fountains which serve the area of primary function. Saying ‘accessible route’ as it does in exception 1 is misleading. Path of travel could be defined in Chapter 2, but the last sentence of 305.7 is essentially the definition. As the term is not used elsewhere in the code, a chapter 2 definition seems unnecessary. Telephones are not included in the IEBC text because they are not typically part of the building regulated by the local building official. Telephone requirements for new construction are in Appendix E of the IBC.

Exception 3 is merged into exception 2 as they are both simply lists of elements exempt from the path of travel requirements.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

This is primarily an editorial clarification of an existing requirement.

Proposal # 5099
Proponent: Gina Hilberry, Scoping Task Group of ICC/A117.1 Standard Development Committee, representing United Cerebral Palsy (gina@cohenhilberry.com); Rick Lupton, representing Self (sparkylupton@msn.com); Marsha Mazz, representing United Spinal Association (m.mazz@verizon.net); Gene Boecker, representing Code Consultants, Inc.(geneb@codeconsultants.com)

2018 International Existing Building Code

Revise as follows:

305.8.4 Stairways and escalators in existing buildings. Where an escalator or stairway is added where none existed previously and major structural modifications are necessary for installation, an accessible route shall be provided between the levels served by the escalator or stairways in accordance with Section 1104.4 of the International Building Code.

Reason: We believe the intent of this section is to require an accessible route between stories where none now exists; but to not require additional accessible routes where one is already provided. The language is convoluted and unclear. We believe that the language can be simplified to send the users to Section 1104.4 of the IBC. Section 1104.4 provides all the direction and exceptions needed to clarify application of this section.

Cost Impact: The code change proposal will not increase or decrease the cost of construction.

The intent is to provide clarity to this section through an editorial revision.

Proposal # 5095
EB31-19

IEBC®: SECTION 305, 305.8.5, TABLE 305.8.5, 305.8.9, 305.8.13, 305.8.14

Proponent: Gina Hilberry, Scoping Task Group of ICC/A117.1 Standard Development Committee, representing United Cerebral Palsy (gina@cohenhilberry.com); Rick Lupton, representing Self (sparkylupton@msn.com); Marsha Mazz, representing United Spinal Association (m.mazz@verizon.net); Gene Boecker, representing Code Consultants, Inc. (geneb@codeconsultants.com)

2018 International Existing Building Code

SECTION 305 ACCESSIBILITY FOR EXISTING BUILDINGS

Delete without substitution:

305.8.5 Ramps. Where slopes steeper than allowed by Section 1012.2 of the International Building Code are necessitated by space limitations, the slope of ramps in or providing access to existing facilities shall comply with Table 305.8.5.

<table>
<thead>
<tr>
<th>SLOPE</th>
<th>MAXIMUM RISE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steeper than 1:10 but not steeper than 1:8</td>
<td>3 inches</td>
</tr>
<tr>
<td>Steeper than 1:12 but not steeper than 1:10</td>
<td>6 inches</td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4 mm.

305.8.9 Jury boxes and witness stands. In alterations, accessible wheelchair spaces are not required to be located within the defined area of raised jury boxes or witness stands and shall be permitted to be located outside these spaces where the ramp or lift access restricts or projects into the required means of egress.

305.8.13 Fuel dispensers. Operable parts of replacement fuel dispensers shall be permitted to be 54 inches (1370 mm) maximum, measuring from the surface of the vehicular way where fuel dispensers are installed on existing curbs.

305.8.14 Thresholds. The maximum height of thresholds at doorways shall be 3/4 inch (19.1 mm). Such thresholds shall have beveled edges on each side.

Reason: Sections 305.8.5, 305.8.9, 305.8.13 and 305.8.14 are redundant with the A117.1 standard. For some of these, the standard provisions are a more comprehensive statement of the technical exemption for existing buildings and alterations. In addition these are “technical” exceptions, and not as the Title of 305.8 alludes to them being changes to the “scoping” of where accessible features are required. Therefore we propose deleting these four sections. The text of the equivalent provisions in the standard can be located as follows:

IEBC Sec. A117.1 Sec.

305.8.5 405.2, Exception; Table 405.2

305.8.9 807.3, Exception

305.8.13 308.3, Exception 2

305.8.14 404.2.4, Exception

Cost Impact: The code change proposal will not increase or decrease the cost of construction. These are editorial revisions. No requirements are being added or exceptions deleted. The provisions deleted here are still found in the ICC A117.1 standard.

Proposal # 5093
EB32-19
IEBC®: 305.8.10, 305.8.11 (New), 305.9.4, 305.9.5 (New)

Proponent: Dawn Anderson, representing self (gonedawning@yahoo.com); Gene Boecker, representing Code Consultants, Inc. (geneb@codeconsultants.com); Dan Buuck, representing National Association of Home Builders (dbuuck@nahb.org); David Collins, representing the American Institute of Architects (dcollins@preview-group.com); Marsha Mazz, representing United Spinal Association (m.mazz@verizon.net)

2018 International Existing Building Code

Revise as follows:

305.8.10 Toilet rooms. Where it is technically infeasible to alter existing toilet and bathing rooms to be accessible, one accessible single user toilet room or one accessible family or assisted-use toilet or bathing room constructed in accordance with Section 1109.2.1 of the International Building Code is permitted. The family or assisted-use toilet or bathing room shall be located on the same floor and in the same area as the existing toilet or bathing rooms. At the inaccessible toilet and bathing rooms, directional signs indicating the location of the nearest family or assisted-use such toilet room or bathing room shall be provided. These directional signs shall include the International Symbol of Accessibility and sign characters shall meet the visual character requirements in accordance with ICC A117.1.

Add new text as follows:

305.8.11 Bathing rooms. Where it is technically infeasible to alter existing bathing rooms to be accessible, one accessible single user bathing room or one accessible family or assisted-use bathing room constructed in accordance with Section 1109.2.1 of the International Building Code is permitted. This accessible bathing room shall be located on the same floor and in the same area as the existing bathing rooms. At the inaccessible bathing rooms, directional signs indicating the location of the nearest such bathing room shall be provided. These directional signs shall include the International Symbol of Accessibility and sign characters shall meet the visual character requirements in accordance with ICC A117.1.

Revise as follows:

305.9.4 Toilet and bathing-facilities. Where toilet rooms are provided, not fewer than one accessible single user toilet room or one accessible family or assisted-use toilet room complying with Section 1109.2.1 of the International Building Code shall be provided.

Add new text as follows:

305.9.5 Bathing facilities. Where bathing rooms are provided, not fewer than one accessible single user bathing room or one accessible family or assisted-use bathing rooms complying with Section 1109.2.1 of the International Building Code shall be provided.

Reason: The intent of this proposal is to clarify the code and coordinate with the terminology in the IPC. The proposal splits the requirements for toilet rooms and bathing rooms into separate sections for clarity. Historically, this requirement originally said 'unisex' toilet rooms were permitted but was revised many cycles ago to use the term 'family or assisted use' for consistency. The IPC now requires all single-occupant toilet rooms to be gender neutral. It is arguable if a family or assisted use toilet room is for a single user or not. Family or assisted use toilet rooms can include a urinal and a toilet, or both adult and child fixtures. Most of the time, an accessible family or assisted use and and accessible single user toilet rooms are technically exactly the same. The current language has caused questions about if this option in the code is only allowed where family assisted use toilet rooms are required in the IBC (Groups A and M), and/or allowed to meet the fixture counts. The IPC has also been revised to allow both single-user and family or assisted toilet rooms to count towards the required fixture count.

For historic buildings (Section 305.9.4), the same issue exists. In addition, while the title included 'bathing rooms' the text did not. Providing separate sections will allow for consistency for existing building and historic buildings that include shower facilities for occupants.

Below is the language in the 2018 IPC

403.1.2 Single-user toilet facility and bathing room fixtures. The plumbing fixtures located in single-user toilet facilities and bathing rooms, including family or assisted use toilet and bathing rooms that are required by Section 1109.2.1 of the International Building Code, shall contribute toward the total number of required plumbing fixtures for a building or tenant space. Single-user toilet facilities and bathing rooms, and family or assisted-use toilet rooms and bathing rooms shall be identified for use by either sex.

403.2.1 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 403.4.

403.4 Signage. Required public facilities shall be provided with signs that designate the sex, as required by Section 403.2. Signs shall be readily visible and located near the entrance to each toilet facility. Signs for accessible toilet facilities shall comply with Section 1111 of the International Building Code.

403.4.1 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.

**Cost Impact:** The code change proposal will not increase or decrease the cost of construction
This is mostly an editorial clarification and coordination with IPC terms.
EB33-19
IEBC®: 305.8.2

Proponent: Kevin Brinkman, representing National Elevator Industry, Inc. (klbrinkman@neii.org)

2018 International Existing Building Code
Delete without substitution:

305.8.2 Elevators. Altered elements of existing elevators shall comply with ASME A17.1 and ICC A117.1. Such elements shall also be altered in elevators programmed to respond to the same hall call control as the altered elevator.

Reason: This requirement is not necessary and may conflict with the ASME A17.1/CSA B44 Safety Code for Elevators and Escalators. A17.1/B44 already has detailed requirements for alterations. All elevators in a group may not be the same. Some cars may serve additional landings, have different size cars, or other features. It may not be feasible to comply with A117 due to variations or in older equipment. This requirement is overly restrictive and adds unnecessary cost to building owners. It may deter building owners from making improvements to one elevator due to the additional cost of having to update all other elevators in the group and therefore, reduce accessibility.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This code change proposal will not increase or decrease the cost of construction because elevator alterations are already addressed in ASME A17.1/CSA B44.

Proposal # 4736
Proponent: Dawn Anderson, representing self (gonedawning@yahoo.com); Gene Boecker, representing Code Consultants, Inc. (geneb@codeconsultants.com); Dan Buuck, representing National Association of Home Builders (dbuuck@nahb.org); David Collins, representing the American Institute of Architects (dcollins@preview-group.com); Marsha Mazz, representing United Spinal Association (m.mazz@verizon.net)

2018 International Existing Building Code

Add new text as follows:

305.8.2 Accessible route. Exterior accessible routes, including curb ramps, shall be not less than 36 inches (914 mm) minimum in width.

Revise as follows:

305.9.1 Site arrival points. Not fewer than one exterior accessible route, including curb ramps, from a site arrival point to an accessible entrance shall be provided and shall not be less than 36 inches (914 mm) minimum in width.

Reason: The ICC A117.1 has increased the size of the exterior route from 36" to 48". This change was based on the recommendations from the Public Rights of Way, not the study that revised the other requirements in the standard. Therefore, this provision does not have allowances for existing buildings in the standard. Allowances for existing building for this item was not discussed. This should not result in any significant loss of accessibility.

Changing the width of sidewalks and curb cuts on a site may require extensive reconfiguration of the parking and sidewalks. The required width for means of egress and/or designer input into the needed width of sidewalks should be sufficient for existing sidewalks and curb cuts on private property.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This allows for existing exterior accessible routes to remain at 36" in width.

Proposal #4388
EB35-19
IEBC®: 305.8.6 (New)

Proponent: Ronald Clements Jr, representing VBCOA (clementsro@chesterfield.gov)

2018 International Existing Building Code
Add new text as follows:

305.8.6 Dining areas. An accessible route is not required to raised or sunken dining areas or outdoor dining areas where accessible dining areas with the same services are provided on the same floor level.

Reason: This provision for dining areas was in the work area method going back to the first edition. It was not in the prescriptive method when that method was introduced in the 2006 edition. When the accessibility provisions were consolidated in chapter 3 the dining area provision was lost; it was section 705.1.5 in the 2015 edition. It appears the loss was not intentional.

Cost Impact: The code change proposal will decrease the cost of construction
This provides another option that could decrease construction cost.
2018 International Existing Building Code

Revise as follows:

305.9 Historic buildings. These provisions shall apply to facilities designated as historic structures that undergo alterations or a change of occupancy, unless technically infeasible. Where compliance with the requirements for accessible routes, entrances or toilet rooms would threaten or destroy the historic significance of the facility, as determined by the authority having jurisdiction, the alternative requirements of Sections 305.9.1 through 305.9.4 for that element shall be permitted.

Exception: Exceptions:

1. The altered element or space is not required to be on an accessible route, unless required by Sections 305.9.1 or 305.9.2.
2. The alteration to Type A individually owned dwelling units within a Group R-2 occupancy shall be permitted to meet the provision for a Type B dwelling unit.
3. Type B dwelling or sleeping units required by Section 1107 of the International Building Code are not required to be provided in historic buildings.

Reason: This proposal is for consistency between the exceptions allowed for existing buildings and historic buildings. These exceptions are in Section 305.6 for existing buildings. This clarifies that an existing historic building can use the same exceptions as existing buildings.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

This is a clarification.
EB37-19

305.9.305.9.3, 305.9.5 (New)

**Proponent:** Dan Buuck, representing National Association of Home Builders (dbuuck@nahb.org); Marsha Mazz, representing United Spinal Association (m.mazz@verizon.net); David Collins, representing The American Institute of Architects (dcollins@preview-group.com); Gene Boecker, representing Code Consultants, Inc. (geneb@codeconsultants.com); Dawn Anderson, representing Mayor’s Office on Disability (gonedawning@yahoo.com)

2018 International Existing Building Code

Revise as follows:

305.9 Historic buildings. structures. These provisions shall apply to facilities designated as historic structures that undergo alterations or a change of occupancy, unless technically infeasible. Where compliance with the requirements for accessible routes, entrances or toilet rooms would threaten or destroy the historic significance of the historic structure, as determined by the authority having jurisdiction, the alternative requirements of Sections 305.9.1 through 305.9.4 for that element shall be permitted.

   **Exception:** Type B dwelling or sleeping units required by Section 1107 of the International Building Code are not required to be provided in historic buildings.

305.9.1 Site arrival points. Not fewer than one accessible route from a site arrival point to an accessible entrance shall be provided.

305.9.2 Multiple-level buildings and facilities. An accessible route from an accessible entrance to public spaces on the level of the accessible entrance shall be provided.

305.9.3 Entrances. Not fewer than one main entrance shall be accessible.

   **Exception:** If a public entrance cannot be made accessible in accordance with Section 305.8.1, an accessible entrance that is unlocked while the building is occupied shall be provided; or, a locked accessible entrance with a notification system or remote monitoring shall be provided.

   Signs complying with Section 1111 of the International Building Code shall be provided at the public entrance and the accessible entrance.

305.9.4 Toilet and bathing facilities. Where toilet rooms are provided, not fewer than one accessible family or assisted-use toilet room complying with Section 1109.2.1 of the International Building Code shall be provided.

Add new text as follows:

305.9.5 Type B units. Type B dwelling or sleeping units required by Section 1107 of the International Building Code are not required to be provided in historic buildings.

**Reason:** The provisions for existing buildings should always apply for historic buildings where technically feasible. This is in the rest of the Section 305, so the first sentence is not needed. The requirements for the entrances in 305.9.3 is making a statement instead of an exception for consistent with the format. The exception for Type B units was moved from being an exception to being a statement in the text.

**Cost Impact:** The code change proposal will not increase or decrease the cost of construction

This is editorial.

Proposal # 4398
2018 International Existing Building Code

Add new text as follows:

SECTION 306
MEANS OF EGRESS FOR EXISTING BUILDINGS

306.1 Occupant Load based on Capacity
Where approved by the code official, the occupant load of any room, areas, space or story shall be permitted to be established as the number of occupant for which the existing means of egress capacity is adequate. Measures shall be established to prevent occupancy greater than the number and capacity of the means of egress components. Such measures can include, but are not limited to the posting of the occupant load for the room, area, space or story.

Reason: Many shell and core buildings are constructed with the minimum means of egress capacity for the anticipated use. However, when the space is finished, the new use may have spaces with occupant loads higher than originally anticipated. Therefore, the existing egress capacity is not adequate enough for the new space. This proposal provides an option to base the occupant load on the existing capacity of the space. It requires the building official's approval to use this option to reduce possible abuse of the requirement.

For example, if a space has two 36-inch wide doors that provide 34-inches of egress capacity, the maximum occupant load permitted in that space would be 340. In some cases, it is either very expensive or impossible to add an additional means of egress or capacity. If the calculated occupant load was greater than the 340, the building official could approve the reduction of the occupant load to a maximum of 340. They would then determine how that occupant load would be maintained which could include the posting of the occupant load in the space. This happens in office tenant improvements quite often. The original building was designed with an occupant load calculation for business use, but the new tenant space has some assembly functions that increase the occupant load.

This proposal was submitted to the Means of Egress Committee in the Group A Cycle. They felt that the requirement would be better located in the IEBC. Their other concerns were addressed by some revisions to the original language submitted to them.

Cost Impact: The code change proposal will decrease the cost of construction
By allowing the occupant load to be based on the egress capacity, the cost of additional exits or capacity will be eliminated.

Proposal # 5506
SECTION 306
HEALTHCARE

306.1 General. Healthcare facilities including Group I-2, ambulatory care facilities and outpatient clinics undergoing repair, alterations, additions and change of occupancy shall be in accordance with Sections 306.1.1 and 306.1.2, as applicable.

306.1.1 Existing construction requirements. Existing Group I-2 facilities shall meet the minimum construction requirements in Chapter 11 of the International Fire Code.

306.1.2 Projections in Nursing Home Corridors. In Group I-2, Condition 1 occupancies, where the corridor is at least 96 inches wide, projections into the corridor width are permitted in accordance with Section 407.4.3 of the International Building Code.

Reason: This proposal creates a section in chapter 3 for special requirements for healthcare facilities. Due to federal reimbursement requirements, there are specific existing building issues that must be mitigated before receiving federal funds. These are reflected in Chapter 13 of the IFC, however, not all jurisdictions adopt this chapter. By referencing those requirements in the IEBC, we provide facilities with a greater chance at maintaining federal certification and at the same time ensure basic safety provisions for facilities that house fragile populations. A companion proposal directly references chapter 11 of the IFC in all of the compliance methods. If it is more effective to have the actual technical requirements in this document, this change creates a place for those requirements to live.

The intent of Section 306.2 is to correlate with the federal regulations and the allowances in the IBC for fixed furniture in corridors where special considerations are met.

This proposal is submitted by the ICC Committee on Healthcare (CHC). The CHC was established by the ICC Board to evaluate and assess contemporary code issues relating to 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. In 2017 and 2018 the CHC held 4 open meetings and numerous conference calls, which included members of the committees as well as any interested parties, to discuss and debate the proposed changes. Information on the CHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CHC effort can be downloaded from the CHC website at: https://www.iccsafe.org/codes-tech-support/cs/icc-committee-on-healthcare/.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This is a pointer to the IEBC that indicates the allowances permitted for fixed furniture.
2018 International Existing Building Code

Add new text as follows:

SECTION 306
SMOKE ALARMS

306.1 Smoke Alarms Where an alteration, addition, change of occupancy or relocation of a building is made to an existing building or structure of a Group R and I-1 occupancies, the existing building shall be provided with smoke alarms in accordance with Section 1103.8 of the International Fire Code or Section R314 of the International Residential Code.

SECTION 307
CARBON MONOXIDE DETECTION

307.1 Carbon monoxide alarms. Where an addition, alteration, change of occupancy or relocation of a building is made to Group I-1, I-2, I-4 and R occupancies, the existing building shall be provided with carbon monoxide alarms in accordance with Section 1103.9 of the International Fire Code or Section R315 of the International Residential Code.

Exceptions:

1. Work involving the exterior surfaces of buildings, such as the replacement of roofing or siding, the addition or replacement of windows or doors, or the addition of porches or decks.
2. Installation, alteration or repairs of plumbing or mechanical systems, other than fuel-burning appliances.

Delete without substitution:

502.6 Smoke alarms in existing portions of a building. Where an addition is made to a building or structure of a Group R or I-1 occupancy, the existing building shall be provided with smoke alarms in accordance with Section 1103.8 of the International Fire Code.

502.7 Carbon monoxide alarms in existing portions of a building. Where an addition is made to a building or structure of Group I-1, I-2, I-4 or R occupancy, the existing building shall be provided with carbon monoxide alarms in accordance with Section 1103.9 of the International Fire Code or Section R315 of the International Residential Code, as applicable.

Exceptions:

1. Work involving the exterior surfaces of buildings, such as the replacement of roofing or siding, the addition or replacement of windows or doors, or the addition of porches or decks.
2. Installation, alteration or repairs of plumbing or mechanical systems, other than fuel-burning appliances.

503.14 Smoke alarms. Individual sleeping units and individual dwelling units in Group R and I-1 occupancies shall be provided with smoke alarms in accordance with Section 1103.8 of the International Fire Code.

503.15 Carbon monoxide alarms. Carbon monoxide alarms shall be provided to protect sleeping units and dwelling units in Group I-1, I-2, I-4 and R occupancies in accordance with Section 1103.9 of the International Fire Code.

Exceptions:

1. Work involving the exterior surfaces of buildings, such as the replacement of roofing or siding, the addition or replacement of windows or doors, or the addition of porches or decks.
2. Installation, alteration or repairs of plumbing or mechanical systems, other than fuel-burning appliances.

803.4.3 Smoke alarms. Individual sleeping units and individual dwelling units in any work area in Group R and I-1 occupancies shall be provided with smoke alarms in accordance with the International Fire Code.

Exception: Interconnection of smoke alarms outside of the work area shall not be required.

SECTION 804
CARBON MONOXIDE DETECTION
804.1 Carbon monoxide alarms. Any work area in Group I-1, I-2, I-4 and R occupancies shall be equipped with carbon monoxide alarms in accordance with Section 1103.9 of the International Fire Code.

Exceptions:

1. Work involving the exterior surfaces of buildings, such as the replacement of roofing or siding, the addition or replacement of windows or doors, or the addition of porches or decks.
2. Installation, alteration or repair of plumbing or mechanical systems, other than fuel-burning appliances.

SECTION 1104
SMOKE ALARMS IN OCCUPANCY GROUPS R AND I-1

1104.1 Smoke alarms in existing portions of a building. Where an addition is made to a building or structure of a Group R or I-1 occupancy, the existing building shall be provided with smoke alarms as required by Section 1103.8 of the International Fire Code or Section R314 of the International Residential Code as applicable.

SECTION 1105
CARBON MONOXIDE ALARMS IN GROUPS I-1, I-2, I-4 AND R

1105.1 Carbon monoxide alarms in existing portions of a building. Where an addition is made to a building or structure of a Group I-1, I-2, I-4 or R occupancy, the existing building shall be equipped with carbon monoxide alarms in accordance with Section 1103.9 of the International Fire Code or Section R315 of the International Residential Code, as applicable.

Reason: Smoke alarms and carbon monoxide alarms are required for all the different options in the IEBC. It does not make sense to have the same requirements duplicated in the different options. Chapter 3 was created to address requirements that were applicable to all of the options. Therefore, this proposal places the requirement for smoke alarms and carbon monoxide alarms in Chapter 3 and deletes the specific requirements elsewhere in the code. This change also maintains the pointer to the fire code for these requirements.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This is just a relocation of the requirements into a single location.
SECTION 401
GENERAL

401.1 Scope. Repairs shall comply with the requirements of this chapter. Repairs to historic buildings need only comply with Chapter 12.

Add new text as follows:

401.1.1 Partial reconstruction. Where damage from fire, earthquake, storm or a similar event has rendered one or more stories of a building, structure or portion thereof as unsafe, reconstruction of such areas shall meet the requirements for a Level 2 or 3 alteration, as applicable.

401.1.2 Complete reconstruction. Where damage from fire, earthquake, storm or similar event has demolished the building, structure, or a portion of a building or structure from the foundation to the roof, reconstruction of such areas shall be in accordance with the International Building Code.

Reason: There is a question as to when damage from a fire or other disaster destroying all or a good chunk of a building. Do you have to go back to IBC or can you build back the way it was? This concept is to try and separate repair from new construction requirements at a logical point. Note that this also helps people get the true value for reconstruction as the insurance industry may sometimes classify a new building (or a replacement of the large portion or an entire story) as a repair and funding is limited.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. Since 2017 the BCAC has held 6 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: https://www.iccsafe.org/codes-tech-support/codes/codedevelopment-process/building-code-actioncommittee-bcac.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This is intended as a clarification of requirements.
Proponent: William Warlick, representing Self (william.warlick@slcgov.com)

2018 International Existing Building Code
Add new text as follows:

402.2 Guards An existing guard that is unable to resist a concentrated load of 200 pounds (0.89 kN) shall be repaired with like materials.

   Work on an existing guard shall include augmenting the guard in accordance with the International Building Code where the height of the guard is one of the following:
   1. Less than 36” above walking surfaces.
   2. Less than 30” above the leading edges of stair treads.

404.2 Guards. Existing guards shall comply with the strength and height requirements of 402.2.

702.7 Guards Guards shall comply with Sections 702.7.1 through 702.7.3, as applicable.

702.7.1 Minimum requirements. Existing guards shall be altered, augmented or replaced in accordance with the International Building Code where such guards are unable to resist a concentrated load of 200 pounds (0.89 kN), or the height of the guard is one of the following:
   1. Less than 36” above walking surfaces, or
   2. Less than 30” above the leading edges of stair treads

702.7.2 Elements of an existing guard. The alteration of elements of an existing guard with new elements of the same design shall maintain the guard’s strength and height.

702.7.3 New and reconfigured guards. New guards and existing guards that are augmented or otherwise reconfigured, shall comply with the International Building Code.

Revise as follows:

802.5.1 Minimum requirement. Where required Every portion of a floor, such as a balcony or a loading dock, that is more than 30 inches (762 mm) above the floor or grade below and is not provided with guards, or those in which the existing guards are judged to be in danger of collapsing, shall be provided with guards. Guards shall be located along open-sided walking surfaces where required in accordance with the International Building Code. Where a required guard does not exist, a new guard shall be provided.

805.11 Guards. The requirements of Sections 805.11.1 and 805.11.2 Section 802.5 shall apply to guards from the work area floor to, and including, the level of exit discharge but shall be confined to the egress path of any work area.

Delete without substitution:

805.11.1 Minimum requirement. Every open portion of a stairway, landing, or balcony that is more than 30 inches (762 mm) above the floor or grade below and is not provided with guards, or those portions in which existing guards are judged to be in danger of collapsing, shall be provided with guards.

805.11.2 Design. Guards required in accordance with Section 805.11.1 shall be designed and installed in accordance with the International Building Code.

Revise as follows:

1011.4.1 Means of egress for change to a higher-hazard category. Where a change of occupancy classification is made to a higher-hazard category (lower number) as shown in Table 1011.4, the means of egress shall comply with the requirements of Chapter 10 of the International Building Code.

Exceptions:

1. Stairways shall be enclosed in compliance with the applicable provisions of Section 903.1.
2. Existing hazard categories 4 or 5, existing stairways including handrails and guards complying with the requirements of Chapter 9 shall be permitted for continued use subject to approval of the code official.
3. Any stairway replacing an existing stairway within a space where the pitch or slope cannot be reduced because of existing
construction shall not be required to comply with the maximum riser height and minimum tread depth requirements.

4. Existing corridor walls constructed on both sides of wood lath and plaster in good condition or 1/2 inch-thick (12.7 mm) gypsum wallboard shall be permitted. Such walls shall either terminate at the underside of a ceiling of equivalent construction or extend to the underside of the floor or roof next above.

5. Existing corridor doorways, transoms and other corridor openings shall comply with the requirements in Sections 805.5.1, 805.5.2 and 805.5.3.

6. Existing dead-end corridors shall comply with the requirements in Section 805.6.

7. An existing operable window with clear opening area not less than 4 square feet (0.38 m²) and minimum opening height and width of 22 inches (559 mm) and 20 inches (508 mm), respectively, shall be accepted as an emergency escape and rescue opening.

**Reason:** This code change reduces reliance on determinations by the code official of unsafe conditions by providing baseline measurements. The code is currently vague about guard requirements, stating, for example, that, in a change of occupancy, a guard “shall be permitted for continued use subject to approval of the code official.” In 1203.10.1 Height, the code states: “Existing guards shall comply with the requirements of Section 704,” but 704 contains no mention of guard height.

Fall safety is considered an area of the I-Codes that is central to life safety. See IBC Section 1015, IRC Section R312, and IMC Sections 304.11 and 306.5.1. Notably, the IEBC also considers fall safety, but from windows only (IEBC 702.4).

While the IEBC generally adheres to the principle that existing construction may remain, there are some areas of the code that depart from this principle for good reasons. One of these reasons is that standards of safety have changed.

The average height of humans has been increasing in recent history, requiring a higher guard to protect against falling. Because this standard of safety has changed, it would make sense for the IEBC to address this area of the code for existing buildings.

The baseline guard heights we propose are 42” in high hazard category occupancies, 36” above walking surfaces, and 30” above the leading edges of stair treads. While the 42” guard height is provided in the IBC generally, there are situations where a lower guard height is allowed:

- A 36” guard height is allowed for guards at the end of aisles in assembly seating areas (1029.16.4), and in individual dwelling units in Group R-2 and R-3 occupancies not more than three stories (1015.3).
- A 34” guard height is allowed on the open side of stairs in in individual dwelling units in Group R-2 and R-3 occupancies.

Legacy codes provided a 30” guard height at stairs as late as 1985. This dimension was later changed to 34”.

Legacy codes also provided reduced minimum guard heights for existing buildings. For example: “Existing guardrails … which are at least 36 inches shall be permitted to remain.” Also: “Guardrails for stairways, exclusive of their landings, may have a height that is not less than 30 inches measured above the nosing of treads.”

Existing sections 802.5 and 805.11 are also proposed to be amended in order to incorporate the proposed minimum guard height requirements, to simplify the language, and to remove an incorrect reference to loading docks.

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[i] “… over the last 150 years the average height of people in industrialized nations has increased approximately 10 centimeters (about four inches).”

Scientific American “Why are we getting taller as a species?” June 29, 1998.

[ii] 1985 Uniform Building Code, Sections 3306(i) and 1711.

[iii] 1988 Uniform Building Code, Sections 3306(i) and 1711.

[iv] 1997 Uniform Code for Building Conservation, Section 405.2

[v] IBC 1015.2 Exception 1.

**Cost Impact:** The code change proposal will not increase or decrease the cost of construction

No cost increase. The proposed changes only clarify the intent of the code, enumerating baseline dimensions that have generally been enforced as determined by code officials.
EB43-19

IEBC®: [BS] 405.2.3.1, [BS] 405.2.3.3, 506.4.2, [BS] 1006.2

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

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

2018 International Existing Building Code

Revise as follows:

[BS] 405.2.3.1 Evaluation. The building shall be evaluated by a registered design professional, and the evaluation findings shall be submitted to the code official. The evaluation shall establish whether the damaged building, if repaired to its predamage state, would comply with the provisions of the International Building Code for load combinations that include wind, flood or earthquake effects, except that the seismic forces shall be the reduced seismic forces.

[BS] 405.2.3.3 Extent of repair for noncompliant buildings. If the evaluation does not establish that the building in its predamage condition complies with the provisions of Section 405.2.3.1, then the building shall be retrofitted to comply with the provisions of this section. The wind loads and the flood loads for the repair and retrofit shall be those required by the building code in effect at the time of original construction, unless the damage was caused by wind, in which case the wind loads and flood loads shall be in accordance with the International Building Code. The seismic loads for this retrofit design shall be those required by the building code in effect at the time of original construction, but not less than the reduced seismic forces.

506.4.2 Snow, flood and wind loads. Where a change of occupancy results in a structure being assigned to a higher risk category, the structure shall satisfy the requirements of Sections 1608, 1609 and 1612 of the International Building Code for the new risk category.

Exception: Where the area of the new occupancy is less than 10 percent of the building area, compliance with this section is not required. The cumulative effect of occupancy changes over time shall be considered.

[BS] 1006.2 Snow, flood and wind loads. Where a change of occupancy results in a structure being assigned to a higher risk category, the structure shall satisfy the requirements of Sections 1608, 1609 and 1612 of the International Building Code for the new risk category.

Exception: Where the area of the new occupancy is less than 10 percent of the building area. The cumulative effect of occupancy changes over time shall be considered.

Reason: Currently the IEBC has no criteria for determining the extent of damage during an evaluation following flood damage, nor how repairs are to be performed for existing noncompliant buildings when due to flood loads. The changes to Sections 405.2.3.1 and 405.2.3.3 will clearly establish what is to be done when the structure is subject to flood damage and must be repaired. The revisions to Sections 506.4.2 and 1006.2 reflect a concern that flood loads are not addressed when a change of occupancy occurs where the change is to a higher risk category.

Cost Impact: The code change proposal will increase the cost of construction Sections 405.2.3.1 and 405.2.3.3. This revisions is a clarification of the code by inclusion of specific provisions for performing needed repairs to an existing building will simplify the process of gaining permits and performing the necessary repairs in accordance with the code. These revisions will not increase the cost of construction.

Sections 506.4.2 and 1006.2 will now require that when a change occupancy occurs that places the structure in a higher risk category that flood loads must be accounted for therefore this may increase the cost of construction as the IEBC does not typically address this issue currently.
**EB44-19**

IEBC®: [BS] 405.2.4

**Proponent:** Michael Fillion, representing National Council of Structural Engineers Associations (mrf.structure@verizon.net)

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

**2018 International Existing Building Code**

Revise as follows:

**[BS] 405.2.4 Substantial structural damage to gravity load-carrying components.** Gravity load-carrying components that have sustained substantial structural damage shall be rehabilitated to comply with the applicable provisions for dead, live, and live snow loads in the International Building Code. Snow loads shall be considered if the substantial structural damage was caused by or related to snow load effects. Undamaged gravity load-carrying components that receive dead, live or snow loads from rehabilitated components shall also be rehabilitated if required to comply with the design loads of the rehabilitation design.

**Reason:** What the proposal does: Includes the consideration of snow load effects whether or not the cause of substantial structural damage was related to snow load effects.

Summary of the current problem and why it's unacceptable: The current IEBC is written such that consideration of snow load effects are only included when the substantial structural damage was caused by or related to snow load effects. Snow loads share the same load path as other gravity loads and should be considered when rehabilitating gravity load-carrying components.

How the proposal solves it, in concept: The proposed language requires consideration of snow load effects for all instances of the rehabilitation of gravity load-carrying components after sustaining substantial structural damage.

Point by point explanation and rationale for each change: The current provision requires only dead and live loads be considered when rehabilitating the gravity load-carrying components of a building that have sustained substantial structural damage. This is true even though it is probable that in some cases live loads did not play any part in causing the damage. As such, rehabilitation of the structure should include all applicable gravity design loads so that the rehabilitated structure is in compliance with current load requirements for new construction required by the International Building Code.

**Cost Impact:** The code change proposal will increase the cost of construction

Cost impact is negligible - potential slight increase if the load combination using snow load controls member design.
EB45-19

IEBC®: 405.2.5 (New)

Proponent: Gwenyth R. Searer, Wiss, Janney, Elstner Associates, Inc., representing myself (gsearer@wje.com)

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

2018 International Existing Building Code

Add new text as follows:

405.2.5 Disproportionate Upgrade Costs  The scope of work required by Sections 405.2.2, 405.2.3, and 405.2.4 need not exceed the scope of work required by Section 405.2.1 by more than 20 percent in terms of cost.

Reason: Arthur Mellen Wellington once wrote that an engineer can do for a dollar what any fool can do for two. The structural upgrade triggers in the IEBC were expanded yet again last code cycle with the addition of a snow damage trigger and a disproportionate earthquake damage trigger. These triggers were added to the two substantial structural damage triggers that were already present. While triggers seem like a good idea in theory (i.e., while a big repair is being performed, why not upgrade the structure while everything is exposed?), upgrade triggers have been shown to discourage repairs and maintenance (ICBO, 1998) and to result in wildly disproportionate upgrade costs (Searer et al., 2006). After the 1989 Loma Prieta earthquake, the City of Oakland adopted upgrade triggers that were the inspiration of the triggers in the IEBC. The following occurred as a result of the triggers:

1) Costs to repair and upgrade the buildings were often many times the cost of repair-only.
2) Building owners were unable to fund the upgrades in many cases.
3) Buildings were left abandoned, in their damaged states, for many years -- some more than a decade.
4) Some engineers gamed the system, trying to make the calculated loss-of-capacity fall under or exceed the triggers, depending on what their clients wanted.
5) Engineers, building officials, and owners were unable to agree on how to compute loss-of-structural-capacity.
6) Litigation ensued.

Even today, there exist no commonly accepted standards for determining loss-of-capacity.

Design and implementation of mandatory system-wide upgrades is even more problematic. For example, consider an older three-story residential structure with tuck-under parking and a soft story. The gypsum board and stucco walls comprise the lateral force resisting structure. Suppose that this building was required to be seismically upgraded due to the substantial structural damage trigger. An experienced structural engineer would likely conclude that the most economical way to strengthen the structure would be to address the soft/weak story on the ground floor by adding plywood shear walls and possibly steel moment frames on the ground floor, but leaving the top two stories, which lack the soft/weak story conditions, unaltered. This would eliminate the hazard most likely by far to result in collapse of the structure for relatively little cost. However, since the R-value has been set so incredibly low in recent codes to discourage the use of gypsum board and stucco as lateral force resisting elements in new buildings, the substantial structural damage trigger would require seismic upgrade of all floors and possibly the foundations as well in this example. So the solution that a rational engineer would generally propose and the building official would generally accept for a voluntary seismic upgrade and even an upgrade required by a soft/weak story ordinance is precluded because the substantial structural damage trigger has no limits: it requires that the lateral force resisting system be brought to at least 75 percent of current code or repair of the building is not permitted. Further, it often makes little sense to spend very large sums of money on older existing buildings that in general have much smaller remaining useful lives than newer buildings.

Engineering is supposed to be about weighing costs and benefits, and making decisions that reduce risk and make economic sense. Simply requiring engineers (and the building owners that have to foot the bills) to upgrade the vast majority of the lateral force-resisting system (including undamaged elements) in a damaged building makes little engineering sense.

A much better way to address potential future hazards in existing building stock is to have a rational cut-off in the amount of money that needs to be spent on triggered upgrades. Building owners and engineers can then make informed decisions about where that money should be spent. In the example above, the knowledgeable engineer would likely recommend strengthening the ground floor, where the soft/weak conditions are present, and would be able to exclude the portions of the structure that do not make sense to strengthen (e.g., the upper two floors).

This cut-off would be similar to the ADA/accessibility 20-percent limit. Architects and building officials often deal with this limit in the alteration of...
existing buildings. The trigger is both effective (i.e., it addresses problems with accessibility) and limited/reasonable (i.e., it cannot result in costs many times the cost of the alteration). The architect and the owner then make the decisions regarding which components of the building should be improved with respect to alterations while considering the available budget. If architects, building owners, and building officials can deal with reasonable limitations regarding accessibility like this, one would hope that engineers, building owners, and building officials should also be able to deal with a similar reasonable cap on the costs of structural upgrades.


**Cost Impact:** The code change proposal will decrease the cost of construction

Limiting the economic impact caused by the existing structural damage repair triggers will reduce the cost of construction.
IEBC®: 406.1.4 (New), 408.3 (New)

Proponent: John Williams, representing Healthcare Committee (AHC@iccsafe.org)

2018 International Existing Building Code

Delete and substitute as follows:

406.1.4 Group I-2 receptacles. Receptacles in patient bed locations of Group I-2 that are not “hospital grade” shall be replaced with “hospital grade” receptacles, as required by NFPA 99 and Article 517 of NFPA 70.

406.1.4 Healthcare facilities. Portions of electrical systems being repaired in Group I-2, ambulatory care facilities and outpatient clinics shall comply with NFPA 99 requirements for repairs.

Add new text as follows:

408.3 Healthcare facilities. Portions of Medical Gas systems being repaired in Group I-2, ambulatory care facilities and outpatient clinics shall comply with NFPA 99 requirements for repairs.

Reason: NFPA 99 specifies broader requirements for electrical systems in existing buildings beyond just hospital grade receptacles in bed locations. This includes requirements tamperproof receptacles in pediatrics, and additional requirements for surgery. NFPA 99 defines requirements for existing facilities. In order to meet federal conditions of participation health care facilities must comply with the electrical systems and equipment and medical gas systems must be installed according to the requirements listed in NFPA 99, Health Care Facilities Code (K912, and K917). This change will align the electrical and medical gas (K909 and K910) systems installation requirements for Outpatient Clinics, Group B Ambulatory Care and Group I-2 facilities. NFPA 99 defines when repairs are made to these systems requirement for component replacement, means and methods of repairs and safety requirements.

NFPA 99 uses a risk based approach to system design, installation and maintenance in healthcare facilities (Group I-2 facilities, ambulatory care facilities and outpatient clinics). Four levels of systems categories are defined in NFPA 99, based on the risks to patients and caregivers in the facilities. The categories are as follows:

(1) Category 1: Systems that are expected to be functional at all times. Failure of these systems is likely to cause major injury or death.

(2) Category 2: Systems are expected to have a high level of reliability. Failures of these systems are likely to cause minor injury to patients or caregivers, however, limited short durations of equipment downtime can be tolerated. Category 2 systems are not critical for life support.

(3) Category 3: Normal building system reliabilities are expected. Such systems support patient needs, but failure of such equipment or systems would not immediately affect patient care and are not critical for life support.

(4) Category 4: Such systems have no impact on patient care and would not be noticeable to patients in the event of failure.

The category definitions apply to equipment and systems operations.

A risk assessment should be conducted to evaluate the risk to the patients, staff, and visitors in all healthcare facilities. These categories are not always aligned to occupancy classification. Potential examples of areas/systems and their categories of risk:

(1) Ambulatory surgical center, where patients undergo general anesthesia, Category 1

(2) Reconstructive surgeon's office with general anesthesia, Category 1

(3) Procedural sedation site for outpatient services, Category 2

(4) Cooling systems in Houston, TX, Category 2

(5) Cooling systems in Seattle, WA, Category 3

(6) Heating systems in Chicago, IL Category 2

(7) Dental office, no general anesthesia, Category 3

(8) Typical doctor's office/exam room, Category 4

(9) Group I-2 Condition 2 facilities most systems would be Category 1
This approach more closely aligns system design, performance and maintenance to the safety risk to the public. It does not create significant additional costs.

This proposal is submitted by the ICC Committee on Healthcare (CHC). The CHC was established by the ICC Board to evaluate and assess contemporary code issues relating to 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. In 2017 and 2018 the CHC held 4 open meetings and numerous conference calls, which included members of the committees as well as any interested parties, to discuss and debate the proposed changes. Information on the CHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CHC effort can be downloaded from the CHC website at: https://www.iccsafe.org/codes-tech-support/cs/icc-committee-on-healthcare/.

**Cost Impact:** The code change proposal will not increase or decrease the cost of construction
This change aligns with existing federal requirements for the healthcare industry.
Proponent: John Williams, representing Healthcare Committee (AHC@iccsafe.org)

2018 International Existing Building Code

Revise as follows:

406.1.4 Group I-2 receptacles. Receptacles in patient care recipient bed locations of Group I-2 that are not “hospital grade” shall be replaced with “hospital grade” receptacles, as required by NFPA 99 and Article 517 of NFPA 70.

802.3 Smoke compartments. In Group I-2 occupancies where the work area is on a story used for sleeping rooms for more than 30 patient care recipients, the story shall be divided into not less than two compartments by smoke barrier walls in accordance with Section 407.5 of the International Building Code as required for new construction.

805.4.1.2 Group I-2. In buildings of Group I-2 occupancy, any patient care recipient sleeping room or suite of patient care recipient rooms greater than 1,000 square feet (93 m²) within the work area shall have not fewer than two egress doorways.

1301.6.4 Tenant and dwelling unit separations. Evaluate the fire-resistance rating of floors and walls separating tenants, including dwelling units, and not evaluated under Sections 1301.6.3 and 1301.6.5. Group I-2 occupancies shall evaluate the rating of the separations between patient care recipient sleeping rooms.

Under the categories and occupancies in Table 1301.6.4, determine the appropriate value and enter that value in Table 1301.7 under Safety Parameter 1301.6.4, Tenant and Dwelling Unit Separation, for fire safety, means of egress, and general safety.

1301.6.21 Patient care recipient ability, concentration, smoke compartment location and ratio to attendant. In I-2 occupancies, the ability of patients care recipients, their concentration and ratio to attendants shall be evaluated and applied in accordance with this section. Evaluate each smoke compartment using the categories in Sections 1301.6.21.1, 1301.6.21.2 and 1301.6.21.3 and enter the value in Table 1301.7. To determine the safety factor, multiply the three values together; if the sum is 9 or greater, compliance has failed.

1301.6.21.1 Patient care recipient ability for self-preservation. Evaluate the ability of the patients care recipients for self-preservation in each smoke compartment in an emergency. Under the categories and occupancies in Table 1301.6.21.1, determine the appropriate value and enter that value in Table 1301.7 under Safety Parameter 1301.6.21.1, Patient care recipient Ability for Self-preservation, for means of egress and general safety.

1301.6.21.2 Patient care recipient concentration. Evaluate the concentration of patients in each smoke compartment under Section 1301.6.21.2. Under the categories and occupancies in Table 1301.6.21.2 determine the appropriate value and enter that value in Table 1301.7 under Safety Parameter 1301.6.21.2, Patient care recipient Concentration, for means of egress and general safety.

### Table 1301.6.21.1

<table>
<thead>
<tr>
<th>OCCUPANCY</th>
<th>a</th>
<th>b</th>
<th>c</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-2</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

1301.6.21.1 Categories: The categories for patient care recipient ability for self-preservation are:

1. Category a—(mobile) Patient care recipients are capable of self-preservation without assistance.
2. Category b—(not mobile) Patient care recipients rely on assistance for evacuation or relocation.
3. Category c—(not movable) Patient care recipients cannot be evacuated or relocated.

### Table 1301.6.21.2

<table>
<thead>
<tr>
<th>OCCUPANCY</th>
<th>a</th>
<th>b</th>
<th>c</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-2</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

1301.6.21.2 Categories: The categories for patient care recipient concentration are:
1. Category a—smoke compartment has 1 to 10 patients, care recipients.
2. Category b—smoke compartment has more than 10 to 40 patients, care recipients.
3. Category c—smoke compartment has more than 40 patients, care recipients.

1301.6.21.3 Attendant-to-patient/Attendant-to-care recipient ratio. Evaluate the attendant-to-patient/attendant-to-care recipient ratio for each compartment under Section 1301.6.21.3. Under the categories and occupancies in Table 1301.6.21.3 determine the appropriate value and enter that value in Table 1301.7 under Safety Parameter 1301.6.21.3, Attendant-to-patient/Attendant-to-care recipient Ratio, for means of egress and general safety.

<table>
<thead>
<tr>
<th>OCCUPANCY</th>
<th>CATEGORIES</th>
<th>a</th>
<th>b</th>
<th>c</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-2</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

1301.6.21.3.1 Categories. The categories for attendant-to-patient concentrations are:

1. Category a—attendant-to-patient concentration is 1:5.
2. Category b—attendant-to-patient concentration is 1:6 to 1:10.
3. Category c—attendant-to-patient concentration is greater than 1:10 or no patients.

1301.7 Building score. After determining the appropriate data from Section 1301.6, enter those data in Table 1301.7 and total the building score.

<table>
<thead>
<tr>
<th>TABLE 1301.7</th>
<th>SUMMARY SHEET—BUILDING CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing occupancy:</td>
<td>Proposed occupancy:</td>
</tr>
<tr>
<td>Year building was constructed:</td>
<td>Number of stories: Height in feet:</td>
</tr>
<tr>
<td>Type of construction:</td>
<td>Area per floor:</td>
</tr>
<tr>
<td>Percentage of open perimeter increase:</td>
<td>%</td>
</tr>
<tr>
<td>Completely suppressed:</td>
<td>Corridor wall rating:</td>
</tr>
<tr>
<td></td>
<td>Type:</td>
</tr>
<tr>
<td>Compartmentation:</td>
<td>Required door closers:</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Fire-resistance rating of vertical opening enclosures:</td>
<td></td>
</tr>
<tr>
<td>Type of HVAC system:</td>
<td>serving number of floors:</td>
</tr>
<tr>
<td>Automatic fire detection:</td>
<td>Type and location:</td>
</tr>
<tr>
<td>Fire alarm system:</td>
<td>Type:</td>
</tr>
<tr>
<td>Smoke control:</td>
<td>Type:</td>
</tr>
<tr>
<td>Adequate exit routes:</td>
<td>Dead ends:</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Maximum exit access travel distance:</td>
<td>Elevator controls:</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Means of egress emergency lighting:</td>
<td>Mixed occupancies:</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Standpipes:</td>
<td>Patient C are recipient ability for self-preservation:</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Incidental use:</td>
<td>Patient C are recipient concentration:</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Smoke compartmentation less than 22,500 sq. feet (2092 m²):</td>
<td>Attendant-to-patient care recipient ratio:</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>SAFETY PARAMETERS</td>
<td>FIRE SAFETY (FS)</td>
</tr>
<tr>
<td>-------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>1301.6.1 Building height</td>
<td></td>
</tr>
<tr>
<td>1301.6.2 Building area</td>
<td></td>
</tr>
<tr>
<td>1301.6.3 Compartmentation</td>
<td></td>
</tr>
<tr>
<td>1301.6.4 Tenant and dwelling unit separations</td>
<td></td>
</tr>
<tr>
<td>1301.6.5 Corridor walls</td>
<td></td>
</tr>
<tr>
<td>1301.6.6 Vertical openings</td>
<td></td>
</tr>
<tr>
<td>1301.6.7 HVAC systems</td>
<td></td>
</tr>
<tr>
<td>1301.6.8 Automatic fire detection</td>
<td></td>
</tr>
<tr>
<td>1301.6.9 Fire alarm system</td>
<td></td>
</tr>
<tr>
<td>1301.6.10 Smoke control</td>
<td>* * * * * * * * *</td>
</tr>
<tr>
<td>1301.6.11 Means of egress</td>
<td>* * * * * * * * *</td>
</tr>
<tr>
<td>1301.6.12 Dead ends</td>
<td>* * * * * * * * *</td>
</tr>
<tr>
<td>1301.6.13 Maximum exit access travel distance</td>
<td>* * * * * * * * *</td>
</tr>
<tr>
<td>1301.6.14 Elevator control</td>
<td></td>
</tr>
<tr>
<td>1301.6.15 Means of egress emergency lighting</td>
<td>* * * * * * * * *</td>
</tr>
<tr>
<td>1301.6.16 Mixed occupancies</td>
<td>* * * * * * * * *</td>
</tr>
<tr>
<td>1301.6.17 Automatic sprinklers</td>
<td>* * * * * * * * *</td>
</tr>
<tr>
<td>1301.6.18 Standpipes</td>
<td></td>
</tr>
<tr>
<td>1301.6.19 Incidental use</td>
<td></td>
</tr>
<tr>
<td>1301.6.20 Smoke compartmentation</td>
<td></td>
</tr>
<tr>
<td>1301.6.21.1 Patient C are recipient ability for self-preservation</td>
<td>* * * * * * * * *</td>
</tr>
<tr>
<td>1301.6.21.2 Patient C are recipient concentration</td>
<td>* * * * * * * * *</td>
</tr>
<tr>
<td>1301.6.21.3 Attendant-to-patient C are recipient ratio</td>
<td>* * * * * * * * *</td>
</tr>
<tr>
<td><strong>Building score—total value</strong></td>
<td></td>
</tr>
</tbody>
</table>

* * * *No applicable value to be inserted.

a. Only applicable to Group I-2 occupancies.

**Reason:**
The purpose of this proposal is to coordinate the terminology for healthcare in the IBC and IFC with the IEBC. Care recipient is more appropriate when speaking about the persons receiving care in nursing homes and hospitals.

This proposal is submitted by the ICC Committee on Healthcare (CHC). The CHC was established by the ICC Board to evaluate and assess contemporary code issues relating to 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. In 2017 and 2018 the CHC held 4 open meetings and numerous conference calls, which included members of the committees as well as any interested parties, to discuss and debate the proposed changes. Information on the CHC, including; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CHC effort can be downloaded from the CHC website at: https://www.iccsafe.org/codes-tech-support/cs/icc-committee-on-healthcare/.

**Cost Impact:** The code change proposal will not increase or decrease the cost of construction

This is editorial.
2018 International Existing Building Code

Add new text as follows:

501.3 Compliance with other codes. In accordance with Section 301.3.1, this provisions of Chapter 11 of the International Fire Code shall also apply to this compliance method.

Revise as follows:

1301.3.2 Compliance with other codes. Buildings that are evaluated in accordance with this section shall comply with Chapter 11 of the International Fire Code and the International Property Maintenance Code.

Reason: While Section 301.3.1 and 1301.3.2 point the user to the IFC for use with the prescriptive and performance compliance methods, most users will assume that all the provisions in the IFC will apply under these methods. If the provisions of Chapter 11 of the IFC can be met, along with the provisions of either Chapter 5 for the prescriptive method or Chapter 13 for the performance method, then the building is compliant. This code change is simply adding pointers to the appropriate sections of the IFC for compliance under the prescriptive method.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

This code change is adding language to provide a pointer to the prescriptive provisions of the IFC for existing buildings that is already referenced in Section 301.3.1.

Proposal # 5544
EB49-19
IEBC®: 501.3 (New), SECTION 706 (New), 706.1 (New), 807.3 (New), 809.2 (New)

Proponent: John Williams, representing Healthcare Committee (AHC@iccsafe.org)

2018 International Existing Building Code
Add new text as follows:

501.3 Healthcare facilities. In Group I-2 facilities, ambulatory care facilities and outpatient clinics, any altered or added portion of an existing electrical or medical gas systems shall be required to meet installation and equipment requirements in NFPA 99.

SECTION 706
ELECTRICAL

706.1 Healthcare facilities. In Group I-2 facilities, ambulatory care facilities and outpatient clinics, any altered portion of an existing electrical systems shall be required to meet installation and equipment requirements in NFPA 99.

807.3 Healthcare facilities. In Group I-2 facilities, ambulatory care facilities and outpatient clinics, any added portion of an existing electrical systems shall be required to meet installation and equipment requirements in NFPA 99.

809.2 Healthcare facilities. In Group I-2 facilities, ambulatory care facilities and outpatient clinics, any added portion of an existing medical gas systems shall be required to meet installation and equipment requirements in NFPA 99.

Reason: In order to meet federal conditions of participation health care facilities must comply with the electrical systems and equipment and medical gas systems and equipment must be installed according to the requirements listed in NFPA 99, Health Care Facilities Code (K 323, K901, K902, K903, K904, K905, K909, K910, K913, K915, K916 K923, K925 and K927). This change will align the electrical and medical gas systems installation requirements for Outpatient Clinics, Group B Ambulatory Care and Group I-2 facilities.

NFPA 99 uses a risk based approach to system design, installation and maintenance in healthcare facilities (Group I-2 facilities, ambulatory care facilities and outpatient clinics). Four levels of systems categories are defined in NFPA 99, based on the risks to patients and caregivers in the facilities. The categories are as follows:

(1) Category 1: Systems that are expected to be functional at all times. Failure of these systems is likely to cause major injury or death.

(2) Category 2: Systems are expected to have a high level of reliability. Failures of these systems are likely to cause minor injury to patients or caregivers, however, limited short durations of equipment downtime can be tolerated. Category 2 systems are not critical for life support.

(3) Category 3: Normal building system reliabilities are expected. Such systems support patient needs, but failure of such equipment or systems would not immediately affect patient care and are not critical for life support.

(4) Category 4: Such systems have no impact on patient care and would not be noticeable to patients in the event of failure.

The category definitions apply to equipment and systems operations.

A risk assessment should be conducted to evaluate the risk to the patients, staff, and visitors in all healthcare facilities. These categories are not always aligned to occupancy classification. Potential examples of areas/systems and their categories of risk;

(1) Ambulatory surgical center, where patients undergo general anesthesia, Category 1
(2) Reconstructive surgeon's office with general anesthesia, Category 1
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(9) Group I-2 Condition 2 facilities most systems would be Category 1

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Cost Impact: The code change proposal will not increase or decrease the cost of construction
This change aligns with existing federal requirements for the healthcare industry.
2018 International Existing Building Code

Add new text as follows:

**SECTION 502**
**Repairs**

502.1 **Scope.** Repairs, as defined by Chapter 2, include the patching or restoration or replacement of damaged materials, elements, equipment or fixtures for the purpose of maintaining such components in good or sound condition with respect to existing loads or performance requirements.

502.2 **Application.** Repairs shall comply with the provisions of Chapter 4.

**SECTION 602**
**Repairs**

602.1 **Scope.** Repairs, as defined by Chapter 2, include the patching or restoration or replacement of damaged materials, elements, equipment or fixtures for the purpose of maintaining such components in good or sound condition with respect to existing loads or performance requirements.

602.2 **Application.** Repairs shall comply with the provisions of Chapter 4.

1301.2.5 **Repairs.** Repairs shall comply with the provisions of Chapter 4.

**Reason:** With the 2018 IEBC providing a stand alone chapter specific to repairs, some of the pointers that previously existed appear to have been lost. This code change is providing pointers for all three compliance methods to Chapter 4 for how repairs are to be provided.

**Cost Impact:** The code change proposal will not increase or decrease the cost of construction.

There is no cost impact with this code change as it is only adding text for clarification purposes.
2018 International Existing Building Code

SECTION 502
ADDITIONS

502.9 Enhanced classroom acoustics. In Group E occupancies, enhanced classroom acoustics shall be provided in all classrooms in the addition with a volume of 20,000 cubic feet (565 m$^3$) or less. Enhanced classroom acoustics shall comply with the reverberation time in Section 808 of ICC A117.1.

SECTION 503
ALTERATIONS

503.17 Enhanced classroom acoustics. In Group E occupancies, where the work area exceeds 50 percent of the building area, enhanced classroom acoustics shall be provided in all classrooms with a volume of 20,000 cubic feet (565 m$^3$) or less. Enhanced classroom acoustics shall comply with the reverberation time in Section 808 of ICC A117.1.

SECTION 506
CHANGE OF OCCUPANCY

506.5 Enhanced classroom acoustics. In Group E occupancies, where the work area is a Level 3 alteration, enhanced classroom acoustics shall be provided in all classrooms with a volume of 20,000 cubic feet (565 m$^3$) or less. Enhanced classroom acoustics shall comply with the reverberation time in Section 808 of ICC A117.1.

SECTION 903
BUILDING ELEMENTS AND MATERIALS

903.4 Enhanced classroom acoustics. In Group E occupancies, where the work area is a Level 3 alteration, enhanced classroom acoustics shall be provided in all classrooms with a volume of 20,000 cubic feet (565 m$^3$) or less. Enhanced classroom acoustics shall comply with the reverberation time in Section 808 of ICC A117.1.

SECTION 1011
CHANGE OF OCCUPANCY CLASSIFICATION

1011.4 Enhanced classroom acoustics. In Group E occupancies, enhanced classroom acoustics shall be provided in all classrooms in the addition with a volume of 20,000 cubic feet (565 m$^3$) or less. Enhanced classroom acoustics shall comply with the reverberation time in Section 808 of ICC A117.1.

Reason: This proposal sets up a new section in the Chapter for Interior Environments; next to the section for sound transmission in residential occupancies. This section is proposed here and not in Chapter 11 because of the benefits of these provisions for all young children – thus following
the codes history of mainstreaming' requirements that may be related to accessibility, but apply broadly.

Research shows that good classroom acoustics are essential to support language acquisition and learning for all children, particularly younger children. For children who have hearing loss and those who use cochlear implants there is no substitute for a good acoustic environment. Assistive technologies typically only amplify the teacher and do not amplify discussions among children or between the teacher and individual child. Children with disabilities not related to hearing, such as autism and learning disabilities may be adversely affected by high ambient noise levels. Students that use a different language at home will also be able to listen more closely to fully understand the teacher and benefit from conversation among peers. Teachers report that a good acoustic environment actually assists in controlling the classroom, reducing the need to raise their voices, and promotes more civil behavior among students. Thus, good acoustic and low background noise in a classroom benefits everyone!

The standard size elementary classroom in the United States holds 25 to 30 students. Many states specify the minimum size at 700 sq.ft. – assuming 20 children in a room. The recommended size for a self-contained classroom is 800 to 960 sq.ft. for grade school; 700 to 840 sq.ft. for secondary school. Some researchers recommend up to 54 sq.ft. per child as optimum – 1620 sq.ft. for a 30 child classroom. Classrooms that are used for activities such as band, orchestra, choir or gym are significantly larger. Some lecture rooms in colleges are large enough to accommodate several hundred students.

The new technical criteria for classroom acoustics in the 2017 ICC A117.1 are limited to classrooms with a size under 20,000 cubic feet; assuming a 10 foot ceiling height, classrooms that are 2000 sq.ft. or less. While acoustics may be important to these larger classrooms, the criteria in ICC A117.1 Section 808 are intended to be applicable to standard size self-contained classrooms. This criteria are also not intended to apply to ancillary learning spaces, such as individual tutoring spaces, or other spaces where students may be, such as corridors or cafeterias.

Technical criteria includes a maximum reverberation time – achieved through either a performance or prescriptive method. The criteria also considers other sound sources – ambient sound and sound sources inside and outside the classrooms.

Below is the text in the IBC and A117.1 for reference.

2021 IBC

SECTION 1207 ENHANCED CLASSROOM ACOUSTICS

1207.1 General. Enhanced classroom acoustics, where required in this section, shall comply with Section 808 of ICC A117.1.

1207.2 Where required. In Group E occupancies, enhanced classroom acoustics shall be provided in all classrooms with a volume of 20,000 cubic feet or less.

2017 ICC A117.1

SECTION 808

ENHANCED ACOUSTICS FOR CLASSROOMS

808.1 General. Classrooms not exceeding 20,000 cubic feet (565 m3) and required to provide enhanced acoustics shall comply with Section 808.

808.2 Reverberation time. Classroom reverberation times shall comply with either Section 808.2.1 or Section 808.2.2, depending on the size of the room.

808.2.1 Performance method. For each of the octave frequency bands with center frequencies of 500, 1000, and 2000 Hz, the reverberation time (T60) shall not exceed the times specified below:

1. 0.6 seconds in classrooms with volumes up to and including 10,000 cubic feet (285 m3).
2. 0.7 seconds in classrooms with volumes of more than 10,000 cubic feet (285 m3), but less than 20,000 cubic feet (566 m3).

Reverberation times shall apply to fully-furnished, unoccupied classrooms. Reverberation times shall be field verified via measurements over a minimum 20 dB decay in each octave frequency band in accordance with ASTM E2235 listed in Section 106.2.13.

808.2.2 Prescriptive method. The Noise Reduction Coefficient (NRC) ratings for floor, wall and ceiling surface finishes shall conform to the following equations:

For a classroom with a volume less than or equal to 10,000 cubic feet (285 m3):

(NRCFloor x SFloor) + (NRCCeiling x SCeiling) + (NRCWall x SWall) / Volume/12
For a classroom with a volume between 10,000 cubic feet (285 m³) and 20,000 cubic feet (565 m³):

\[(\text{NRCFloor} \times \text{SFloor}) + (\text{NRCCeiling} \times \text{SCeiling}) + (\text{NRCWall} \times \text{SWall}) \] \( \text{Volume/14} \)

Where:

- \( \text{NRCFloor} \) = NRC rating of the floor finish material
- \( \text{SFloor} \) = floor area in square feet
- \( \text{NRCCeiling} \) = NRC rating of the ceiling finish material
- \( \text{SCeiling} \) = ceiling area in square feet
- \( \text{NRCWall} \) = NRC rating of the wall acoustical treatment
- \( \text{SWall} \) = wall treatment area in square feet
- \( \text{Volume} \) = room volume in cubic feet

Where a floor, ceiling or wall has multiple surface finishes, the NRC x S product for each surface finish shall be added to the left side of the equation.

808.3 Ambient sound level. Classroom ambient sound levels shall comply with Sections 808.3.1 and 808.3.2. Ambient sound levels from sound sources outside and inside the classroom shall be evaluated individually. The greatest one-hour averaged sound levels shall be evaluated at the loudest usable location in the room at a height of 36 inches (915 mm) to 42 inches (1065 mm) above the floor and no closer than 36 inches (915 mm) from any wall, window or object. The ambient sound level limits shall apply to fully-furnished, unoccupied classrooms, and with only permanent HVAC, electrical and plumbing systems functioning. Classroom equipment, including, but not limited to, computers, printers and fish tank pumps shall be turned off during these measurements.

808.3.1 Sound sources outside of the classroom. Classroom ambient sound levels shall not exceed 35 dBA and 55 dBC due to intruding noise from sound sources outside of the classroom, whether from the exterior or from other interior spaces.

808.3.2 Sound sources inside the classroom. Classroom ambient sound levels shall not exceed 35 dBA and 55 dBC for noise from sound sources inside the classroom.

Cost Impact: The code change proposal will increase the cost of construction

There will be acoustic requirements for classrooms, but not all spaces in new schools. Since this encompasses such a broad range of options to comply, the cost may be limited by design choices.
2018 International Existing Building Code
Revise as follows:

SECTION 502
ADDITIONS

502.7 Carbon monoxide alarms detection in existing portions of a building. Where an addition is made to a building or structure of Group I-1, I-2, I-4 or R occupancy and in classrooms in Group E occupancies, the existing building shall be provided with carbon monoxide alarms detection in accordance with Section 1103.9 of the International Fire Code or Section R315 of the International Residential Code, as applicable.

Exceptions:
1. Work involving the exterior surfaces of buildings, such as the replacement of roofing or siding, the addition or replacement of windows or doors, or the addition of porches or decks.
2. Installation, alteration or repairs of plumbing or mechanical systems, other than fuel-burning appliances.

SECTION 1105
CARBON MONOXIDE ALARMS IN GROUPS I-1, I-2, I-4 AND R DETECTION

1105.1 Carbon monoxide alarms detection in existing portions of a building. Where an addition is made to a building or structure of a Group I-1, I-2, I-4 or R occupancy and in classrooms in Group E occupancies, the existing building shall be equipped with carbon monoxide alarms detection in accordance with Section 1103.9 of the International Fire Code or Section R315 of the International Residential Code, as applicable.

SECTION 503
ALTERATIONS

503.15 Carbon monoxide alarms detection. Carbon monoxide alarms shall be provided to protect sleeping units and dwelling units. Any work area in Group I-1, I-2, I-4 and R occupancies, and classrooms in Group E occupancies shall be equipped with carbon monoxide detection in accordance with Section 1103.9 of the International Fire Code.

Exceptions:
1. Work involving the exterior surfaces of buildings, such as the replacement of roofing or siding, the addition or replacement of windows or doors, or the addition of porches or decks.
2. Installation, alteration or repairs of plumbing or mechanical systems, other than fuel-burning appliances.

8 ALTERATIONS—LEVEL 2

SECTION 804
CARBON MONOXIDE DETECTION

804.1 Carbon monoxide alarms detection. Any work area in Group I-1, I-2, I-4 and R occupancies, and classrooms in Group E occupancies shall be equipped with carbon monoxide alarms detection in accordance with Section 1103.9 of the International Fire Code.

Exceptions:
1. Work involving the exterior surfaces of buildings, such as the replacement of roofing or siding, the addition or replacement of windows or doors, or the addition of porches or decks.
2. Installation, alteration or repairs of plumbing or mechanical systems, other than fuel-burning appliances.

Reason: Section 502.7 and 1105.1 deal with additions, and Section 503.15 and 804.1 deal with alterations. The intent of this proposal is correlation between the IEBC and the IFC. This proposal accomplishes two things. First it correlates the occupancies in which carbon monoxide detection is required in IFC Sections 915 and 1103.9, which essentially adds classrooms in Group E occupancies. Second, it changes references from “carbon monoxide alarms” to “carbon monoxide detection”. This change in terminology will not preclude carbon monoxide alarms from being provided in applications for which they are listed, but better reflects terminology used in the IFC.
The exceptions are proposed to be deleted from the additions section of the prescriptive method rather than added additions chapter in the work area method since the exceptions are not needed for additions.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. Since 2017 the BCAC has held 6 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: https://www.iccsafe.org/codes-tech-support/codes/codedevelopment-process/building-code-actioncommittee-bcac.

**Cost Impact:** The code change proposal will increase the cost of construction
The increased cost will be for providing carbon monoxide detection when classrooms in Group E occupancies are covered by these code sections.

Proposal # 4307

EB52-19
EB53-19

IEBC®: (New), [BS] 503.3

Proponent: Michael Fillion, representing National Council of Structural Engineers Association (mrf.structure@verizon.net)

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

2018 International Existing Building Code

Add new definition as follows:

[BS] ROOF COVERING. The covering applied to the roofdeck for weather resistance, fire classification or appearance.

Revise as follows:

[BS] 503.3 Existing structural elements carrying gravity load. Any existing gravity load-carrying structural element for which an alteration causes an increase in design dead, live or snow load, including snow drift effects, of more than 5 percent shall be replaced or altered as needed to carry the gravity loads required by the International Building Code for new structures. Any existing gravity load-carrying structural element whose gravity load-carrying capacity is decreased as part of the alteration shall be shown to have the capacity to resist the applicable design dead, live and snow loads including snow drift effects required by the International Building Code for new structures.

Exceptions:

1. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the altered building complies with the conventional light-frame construction methods of the International Building Code or the provisions of the International Residential Code.

2. Buildings in which the increased dead load is due entirely to the addition of a second layer of roof covering weighing 3 pounds per square foot (0.1437 kN/m²) or less over an existing single layer of roof covering. This exception shall not apply where insulation is added to the roof assembly.

Reason: In many re-roofing projects, insulation and membrane are placed over an existing roof covering. The weight of the insulation and membrane are usually less than 3 pounds per square foot (0.1437 kN/m²). It has been our observation that some design professionals and building officials are using this exception when insulation is added with the new second layer of roof covering. Addition of insulation increases the thermal resistance (R-value) resulting in a higher Thermal Factor, Ct, which will increase the design roof snow load. Because of this oversight in some instances, we feel it is important to include the IBC roof covering definition and to make it clear that adding insulation is not included in Exception #2.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

The intent of this code change proposal is for clarification

Proposal # 5333
2018 International Existing Building Code

Revise as follows:

[BS] 503.4 Existing structural elements carrying lateral load. Except as permitted by Section 503.13, where the alteration increases design lateral loads, results in a prohibited structural irregularity as defined in ASCE 7, or decreases the capacity of any existing lateral load-carrying structural element, the structure of the altered building or structure shall meet the requirements of Sections 1609 and 1613 of the International Building Code. Reduced seismic forces shall be permitted.

Exception:

1. Any existing lateral load-carrying structural element whose demand-capacity ratio with the alteration considered is not more than 10 percent greater than its demand-capacity ratio with the alteration ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces in accordance with Sections 1609 and 1613 of the International Building Code. Reduced seismic forces shall be permitted. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces and capacities shall account for the cumulative effects of additions and alterations since original construction.

2. Buildings in which the increase in the demand capacity ratio is due entirely to the addition of roof top supported mechanical equipment individually having an operating weight less than 400 lb and when the total additional weight of all roof top equipment placed after initial construction of the building is less than 10% of the roof design dead load. For purposes of this exception roof shall mean the roof level above a particular story.

3. Replacement of rooftop mechanical equipment where the new equipment has an operating weight equal to or less that the existing equipment to be replaced.

Reason: Building owners and tenants frequently add or replace roof top mechanical equipment as a part of interior tenant improvement work. Most projects only consider the gravity load effects and ignore contributions to roof dead load and as a result increases to the seismic weight that needs to be resisted by the seismic force resisting system. Additionally, engineers performing the structural design for new buildings determine the total accumulated operating weight of roof top equipment and divide the load by the area of the roof and add the weight in psf to the seismic dead weight. As a consequence, new building designs do not account for localized impacts of roof top equipment. This code change merely codifies current practice. ASCE 7 does not require that anchorage and bracing be determined for supported equipment having a weight of 400 lb or less. Most building departments I polled and review staff indicated that the vast majority of engineers focus merely on support and anchorage and typically do so after the first review cycle since only mechanical plans are provided.

Cost Impact: The code change proposal will decrease the cost of construction

The proposal seeks to limit the need for structural analysis of the lateral force resisting system, and to limit the need for a structural upgrade due to the possible increase in seismic forces and thus the demand capacity ratio, to cases where there is a need to add significantly heavy equipment such as a building maintenance equipment (BMU) to wash and replace windows on a high rise or heavy cooling towers. Currently there is not consistency of enforcement where engineers make a judgement call to not verify compliance and often times the building official only reviews support and anchorage for example on a wood retail building or a concrete tilt-up building.
2018 International Existing Building Code

Add new definition as follows:

**PHOTOVOLTAIC PANEL SYSTEM.** A system that incorporates discrete photovoltaic panels, that converts solar radiation into electricity, including rack support systems.

Revise as follows:

[BS] 503.3 Existing structural elements carrying gravity load. Any existing gravity load-carrying structural element for which an alteration causes an increase in design dead, live or snow load, including snow drift effects, of more than 5 percent shall be replaced or altered as needed to carry the gravity loads required by the International Building Code for new structures. Any existing gravity load-carrying structural element whose gravity load-carrying capacity is decreased as part of the alteration shall be shown to have the capacity to resist the applicable design dead, live and snow loads including snow drift effects required by the International Building Code for new structures.

Exceptions:

1. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the altered building complies with the conventional light-frame construction methods of the International Building Code or the provisions of the International Residential Code.
2. Buildings in which the increased dead load is due entirely to the addition of a second layer of roof covering weighing 3 pounds per square foot (0.1437 kN/m²) or less over an existing single layer of roof covering.
3. Buildings in which the increased dead load is due entirely to the addition of a photovoltaic panel system weighing 4 pounds per square foot (0.1916 kN/m²) or less over an existing single layer of roof covering.

Reason: Building codes commonly allow a second layer of roof covering such as composition shingle to be installed over a first layer of roof covering, without any structural analysis. Residential PV systems on high-slope roofs typically have a unit weight approximately the same as a second layer of roof covering.

The added definition of photovoltaic panel system is the same as found in the IBC.

Cost Impact: The code change proposal will decrease the cost of construction

By providing exemption from structural engineering analysis for simple cases, this proposal will decrease the soft cost of some renewable energy systems.
EB56-19
IEBC®: (New), [BS] 503.4

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

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

2018 International Existing Building Code

Add new definition as follows:

[BS] PHOTOVOLTAIC PANEL SYSTEM. A system that incorporates discrete photovoltaic panels, that converts solar radiation into electricity, including rack support systems.

Revise as follows:

[BS] 503.4 Existing structural elements carrying lateral load. Except as permitted by Section 503.13, where the alteration increases design lateral loads, results in a prohibited structural irregularity as defined in ASCE 7, or decreases the capacity of any existing lateral load-carrying structural element, the structure of the altered building or structure shall meet the requirements of Sections 1609 and 1613 of the International Building Code. Reduced seismic forces shall be permitted.

Exception:

1. Any existing lateral load-carrying structural element whose demand-capacity ratio with the alteration considered is not more than 10 percent greater than its demand-capacity ratio with the alteration ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces in accordance with Sections 1609 and 1613 of the International Building Code. Reduced seismic forces shall be permitted. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces and capacities shall account for the cumulative effects of additions and alterations since original construction.

2. The installation of rooftop photovoltaic panel systems where the additional roof dead load due to the system, including ballast where applicable, does not exceed 5 psf and 10% of the dead load of the existing roof. For purposes of this exception roof shall mean the common roof above a common story.

Reason: The IEBC includes a needed exception to exempt existing buildings undergoing alterations from compliance with more current seismic requirements in IBC chapter 16. The existing exception uses demand/capacity ratios (DCR) to identify a threshold below which the alteration is not deemed to be significant enough to require an evaluation and possible upgrade of the existing lateral force resisting system. Demand equates to the load applied to the lateral force resisting system and capacity equates the strength of the lateral force resisting system to resist the lateral load. Demand can be impacted by an increase in gravity load, an alteration that redirects load to existing elements in addition to the loads they resist prior to the alteration (such as for example force transfer around and due to a large floor/roof opening. The capacity of existing lateral force resisting elements can be impacted by alterations that cut into the elements such as for example reducing the length of a shearwall. Roof top solar photovoltaic systems, and especially those with ballast, may increase the demand capacity ratio of lateral force resisting systems due to the location of the installation relative to the existing lines of resistance below the roof. For example a building that includes lateral force resisting systems at the interior of the building in addition to those at the exterior may cause an in creased DCR at the interior shearwalls due additional tributary loads. As a consequence and without the proposed code change the installation of a rooftop solar system would require that a qualified engineer identify the existing lateral force resisting system (possibly without plans), determine it's capacity and determine the demand and thus demonstrate that the DCR increase is not increased by more than 10%
This requirement imposes a significant burden on buildings constructed with light framed wood construction since unlike other buildings they do not incorporate heavier concrete or steel floors and roofs or heavier concrete or masonry exterior walls. Heavier walls and roofs will allow the roof top installations to easily satisfy the DCR limit.

While unlike Section 503.3 exception 2 where 3 psf is used this code change uses 5 psf as a load threshold to allow for small-ballasted systems to benefit from proposed exception 2. There is no published data demonstrating that alterations involving the installation of rooftop solar photovoltaic caused a life-safety hazard due to a seismic event. It would be difficult to explain to a building owner that the installation of a rooftop solar system necessitates $2,000 or more in engineering costs and possible upgrades to the lateral force resisting system. ASCE 7 as well as the IBC recognizes that solar voltaic systems are unique and allow seismic force resistance through friction and allow discounting of the roof live load under the rack-mounted assemblies. This proposed code change offers a similar and reasonable accommodation to light weight components that are hand carried on to a roof and which occupy a portion of the roof.

Cost Impact: The code change proposal will decrease the cost of construction
The proposed code change may eliminate the need to develop detailed structural plans to demonstrate the capacity of the existing lateral force resisting system as well as lateral force resisting system upgrades.
THIS CODE CHANGE WILL BE HEARD BY THE IBC STRUCTURAL COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.

2018 International Existing Building Code

Revise as follows:

[BS] 503.12 Roof diaphragms resisting wind loads in high-wind regions. Where the intended alteration requires a permit for reroofing and involves removal of roofing materials from more than 50 percent of the roof diaphragm of a building or section of a building located where the ultimate design wind speed is greater than 115 mph (51 m/s) in accordance with Figure 1609.3(1) of the International Building Code or in a special wind region as defined in Section 1609 of the International Building Code, roof diaphragms, connections of the roof diaphragm to roof framing members, and roof-to-wall connections shall be evaluated for the wind loads specified in Section 1609 of the International Building Code, including wind uplift. If the diaphragms and connections in their current condition are not capable of resisting 75 percent of those wind loads, they shall be replaced or strengthened in accordance with the loads specified in Section 1609 of the International Building Code.

   Exception: Buildings that have been demonstrated to comply with the wind load provisions in ASCE 7-88 or later editions up to and including ASCE 7-2016.

[BS] 706.3.2 Roof diaphragms resisting wind loads in high-wind regions. Where roofing materials are removed from more than 50 percent of the roof diaphragm or section of a building located where the ultimate design wind speed, $V_{ult}$, determined in accordance with Figure 1609.3(1) of the International Building Code, is greater than 115 mph (51 m/s) or in a special wind region, as defined in Section 1609 of the International Building Code, roof diaphragms, connections of the roof diaphragm to roof framing members, and roof-to-wall connections shall be evaluated for the wind loads specified in the International Building Code, including wind uplift. If the diaphragms and connections in their current condition are not capable of resisting 75 percent of those wind loads, they shall be replaced or strengthened in accordance with the loads specified in the International Building Code.

   Exception: Buildings that have been demonstrated to comply with the wind load provisions in ASCE 7-88 or later editions up to and including ASCE 7-2016.

Reason: Provides an exception for buildings that are known to have been designed to comply with, or buildings in which the roof diaphragms can be demonstrated to resist, comprehensive design wind load provisions.

As currently written, this section of the code applies equally to the reroofing of all buildings that meet the reroofing percentages and the location triggers, regardless of when the buildings were constructed.

The proposal adds an exception wherein buildings are exempt from the provision when it is known to comply with, or can be demonstrated to comply with, the comprehensive design wind load provisions that have been included in ASCE 7 since 1988.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Proposal will reduce the number of instances of when building diaphragms need to have an engineering evaluation done.

Staff Analysis: Note that the 1988 through 1995 editions are referenced in various years of the legacy codes (pre I-codes), and the 1988 through the 2016 are referenced in various years of the I-codes.
EB58-19

IEBC®: [BS] 503.12, [BS] 706.3.2

Proponent: Michael Fillion, representing National Council of Structural Engineers Associations (mrf.structure@verizon.net)

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

2018 International Existing Building Code

Revise as follows:

[BS] 503.12 Roof diaphragms resisting wind loads in high-wind regions. Where the intended alteration requires a permit for reroofing and involves removal of roofing materials from more than 50 percent of the roof diaphragm of a building or section of a building located where the ultimate design wind speed is greater than 115-130 mph (54-58 m/s) in accordance with Figure 1609.3(1) of the International Building Code or, and is in a special wind hurricane-prone region as defined in Section 1609.202 of the International Building Code, roof diaphragms, connections of the roof diaphragm to roof framing members, and roof-to-wall connections shall be evaluated for the wind loads specified in Section 1609 of the International Building Code, including wind uplift. If the diaphragms and connections in their current condition are not capable of resisting 75 percent of those wind loads, they shall be replaced or strengthened in accordance with the loads specified in Section 1609 of the International Building Code.

[BS] 706.3.2 Roof diaphragms resisting wind loads in high-wind regions. Where roofing materials are removed from more than 50 percent of the roof diaphragm or section of a building located where the ultimate design wind speed, $V_{ult}$, determined in accordance with Figure 1609.3(1) of the International Building Code, is greater than 115-130 mph (54-58 m/s) or, and is in a special wind hurricane-prone region, as defined in Section 1609.202 of the International Building Code, roof diaphragms, connections of the roof diaphragm to roof framing members, and roof-to-wall connections shall be evaluated for the wind loads specified in the International Building Code, including wind uplift. If the diaphragms and connections in their current condition are not capable of resisting 75 percent of those wind loads, they shall be replaced or strengthened in accordance with the loads specified in the International Building Code.

Reason: What the proposal does: Changes the triggering wind speed to that which reasonably coincides with a value above which past experience indicates there is a substantial risk of diaphragm or uplift damage and/or failures in hurricane-prone regions. Also, deletes locations in special wind regions as a trigger and replaces it with locations in hurricane-prone regions where damage from uplift on roofs is a known problem. Summary of the current problem and why it’s unacceptable: Design wind speeds modestly exceeding 115 mph, regardless of geographical location, are not appropriate triggers because there is no historical data indicating that such wind speeds pose any exceptional risk of building diaphragm damage or failure. Wind speeds in special wind regions can vary widely from something less than 115 mph to something much greater than 115 mph. The way the provision is currently written, a building located in a special wind region where the ultimate design wind speed is less than or equal to 115 mph, i.e., exposed to no exceptional wind demands, would be subject to these requirements. Furthermore, there is no historical evidence indicating that diaphragm deficiencies pose any extraordinary threat outside of hurricane-prone regions. The requirement that a building undergo a diaphragm evaluation, involving a significant investigative and analytical effort by an engineer, must be regarded as an extraordinary burden that is only justifiable on the basis of a commensurately extraordinary hazard. Therefore, that burden should be limited to where there is sufficient evidence that a major threat exists. Tying the trigger to hurricane-prone regions limits the provision’s scope to known areas of past vulnerability that are threatened by extraordinary winds.

How the proposal solves it, in concept, and a point by point explanation and rationale for each proposed change: Increases the triggering wind speed to greater than 130 mph, a value that is commensurate with the speed above which glazed openings in new buildings must be protected by means of an impact-protective system or impact-resistant glazing. This speed is deemed reasonable because roofs are more likely to sustain significant damage from uplift when they are subjected to significant positive pressures on one side and negative pressures on the other. This speed is also deemed reasonable because prescriptive requirements for wood framed buildings are not permitted where the design wind speed is greater than 130 mph. Removes an onerous requirement for buildings located in areas where design wind speeds are only moderately greater than 115 mph, and limits the requirements of this section to hurricane-prone regions where there is a history of building failures and/or damage from diaphragm deficiencies.

Cost Impact: The code change proposal will decrease the cost of construction Proposal will reduce the number of instances when roof diaphragms require evaluation and/or upgrade.
503.16 Smoke compartments. In Group I-2 occupancies where the alteration is on a story used for sleeping rooms for more than 30 care recipients, the story shall be divided into not less than two compartments by smoke barrier walls in accordance with Section 407.5 of the International Building Code as required for new construction.

Revise as follows:

802.3 Smoke compartments. In Group I-2 occupancies where the work area is on a story used for sleeping rooms for more than 30 patients care recipients, the story shall be divided into not less than two compartments by smoke barrier walls in accordance with Section 407.5 of the International Building Code as required for new construction.

Reason:
The purpose of this proposal is to provide coordination between the prescriptive method and the work area method for smoke compartments. This is also consistent with the IFC and is required for hospital licensure.

This proposal is submitted by the ICC Committee on Healthcare (CHC). The CHC was established by the ICC Board to evaluate and assess contemporary code issues relating to 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. In 2017 and 2018 the CHC held 4 open meetings and numerous conference calls, which included members of the committees as well as any interested parties, to discuss and debate the proposed changes. Information on the CHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CHC effort can be downloaded from the CHC website at: https://www.iccsafe.org/codes-tech-support/cs/icc-committee-on-healthcare/.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is a licensure requirement for hospitals and nursing homes.
Proponent: John Williams, representing Healthcare Committee (AHC@icc safe.org)

2018 International Existing Building Code

Revise as follows:

503.16 Refuge areas. Where alterations affect the configuration of an area utilized as a refuge area, the capacity of the refuge area shall not be reduced below the required capacity of the refuge area for horizontal exits in accordance with Section 1026.4 of the International Building Code. Where the horizontal exit also forms a smoke compartment, the capacity of the refuge area for Group I-1, I-2 and I-3 occupancies and Group B ambulatory care facilities shall not be reduced below that required in Sections 503.16.1 through 503.16.3 407.5.3, 408.6.2, 420.6.1 and 422.3.2 of the International Building Code as applicable.

Delete without substitution:

503.16.1 Smoke compartments. In Group I-2 and I-3 occupancies, the required capacity of the refuge areas for smoke compartments in accordance with Sections 407.5.1 and 408.6.2 of the International Building Code shall be maintained.

503.16.2 Ambulatory care. In ambulatory care facilities required to be separated by Section 422.2 of the International Building Code, the required capacity of the refuge areas for smoke compartments in accordance with Section 422.3.2 of the International Building Code shall be maintained.

503.16.3 Horizontal exits. The required capacity of the refuge area for horizontal exits in accordance with Section 1026.4 of the International Building Code shall be maintained.

Revise as follows:

805.10 Refuge areas. Where alterations affect the configuration of an area utilized as a refuge area, the capacity of the refuge area shall not be reduced below the required capacity of the refuge area for horizontal exits in accordance with Section 1026.4 of the International Building Code. Where the horizontal exit also forms a smoke compartment, the capacity of the refuge area for Group I-1, I-2 and I-3 occupancies and Group B ambulatory care facilities shall not be reduced below that required in Sections 805.10.1 and 805.10.2 407.5.3, 408.6.2, 420.6.1 and 422.3.2 of the International Building Code as applicable.

Delete without substitution:

805.10.1 Capacity. The required capacity of refuge areas shall be in accordance with Sections 805.10.1.1 through 805.10.1.3.

805.10.1.1 Group I-2. In Group I-2 occupancies, the required capacity of the refuge areas for smoke compartments in accordance with Section 407.5.1 of the International Building Code shall be maintained.

805.10.1.2 Group I-3. In Group I-3 occupancies, the required capacity of the refuge areas for smoke compartments in accordance with Section 408.6.2 of the International Building Code shall be maintained.

805.10.1.3 Ambulatory care. In ambulatory care facilities required to be separated by Section 422.2 of the International Building Code, the required capacity of the refuge areas for smoke compartments in accordance with Section 422.3.2 of the International Building Code shall be maintained.

805.10.2 Horizontal exits. The required capacity of the refuge area for horizontal exits in accordance with Section 1026.4 of the International Building Code shall be maintained.

Reason:
The purpose is to make refuge area capacity requirements consistent across the codes. The current IEBC text does not include the provisions for Group I-1. In looking to add that, it seems better to take the approach in IBC Section 1026 and just provide references.

This proposal is submitted by the ICC Committee on Healthcare (CHC). The CHC was established by the ICC Board to evaluate and assess contemporary code issues relating to 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. In 2017 and 2018 the CHC held 4 open meetings and numerous conference calls, which included members of the committees as well as any interested parties, to discuss and debate the proposed changes. Information on the CHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CHC effort can be downloaded from the CHC website at: https://www.iccsafe.org/codes-tech-support/cs/icc-committee-on-healthcare/.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is a coordination item.
EB61-19

IEBC: 503.17 (New), 701.3 (New), 702.7 (New), 703.2 (New), 703.3 (New), 703.4 (New), 704.2 (New), 704.3 (New), 802.2.2 (New), 802.3

Proponent: John Williams, representing Healthcare Committee (AHC@iccsafe.org)

2018 International Existing Building Code

SECTION 503
ALTERATIONS

Add new text as follows:

503.17 Group I-2. In Group I-2 occupancies, existing elements within the area undergoing alterations shall comply with Chapter 11 of the International Fire Code.

SECTION 701
GENERAL

Add new text as follows:

701.3 Group I-2. In Group I-2 occupancies, existing elements within the work area shall comply with Chapter 11 of the International Fire Code.

SECTION 702
BUILDING ELEMENTS AND MATERIALS

Add new text as follows:

702.7 Group I-2, Condition 2 location. Existing Group I-2, Condition 2 shall not be located on a floor level higher than the floor level limitation in Table 1105.3 of the International Fire Code based on the type of construction.

SECTION 703
FIRE PROTECTION

Add new text as follows:

703.2 Incidental uses in Group I-2. In Group I-2 occupancies, existing incidental use areas within the work area shall comply with Section 1105.4 of the International Fire Code.

703.3 Corridor construction in Group I-2. In Group I-2 occupancies, existing corridors, including openings, within the work area shall comply with Section 1105.5 of the International Fire Code.

703.4 Waste and linen chutes. In Group I-2 occupancies, existing waste and linen chutes shall comply with Sections 1103.4.9 of the International Fire Code.

SECTION 704
MEANS OF EGRESS

Add new text as follows:

704.2 Means of egress in Group I-2. In Group I-2 occupancies, existing means of egress within the work area shall comply with Sections 1105.1 and 1105.6 of the International Fire Code.

704.3 Group I-2 care suites. Care suites in existing Group I-2, Condition 2 occupancies shall comply with Sections 407.4.4 through 407.4.4.6.2 of the International Building Code.

Revise as follows:

SECTION 802
BUILDING ELEMENTS AND MATERIALS

Add new text as follows:

802.2.2 Group I-2 and I-3 occupancies. In Group I-2 and I-3 occupancies, interior vertical openings connecting two or more stories shall comply with Section 1103.4.1 of the International Fire Code.
Revise as follows:

802.3 Smoke compartments. In Group I-2 occupancies where the work area is on a story used for sleeping rooms for more than 30 patients, the story shall be divided into not less than two compartments by smoke barrier walls in accordance with Section 407.5 of the International Building Code as required for new construction. Existing smoke barriers shall comply with Section 1105.7.2 through 1105.7.6 of the International Fire Code.

Reason: The Healthcare committee worked over the last several cycles to match the federal requirements for Medicare reimbursement (K-tags) with the IFC requirements for existing buildings. While this is required for most existing hospitals, not everything is caught during survey. A cross check of these basic requirements during the review of alteration projects would be a useful mechanism to increase compliance. Where there are alterations, there is the opportunity to make sure existing elements within the work area comply. Therefore, the requirements for hospitals in IFC Chapter 11 should be referenced in the IEBC.

The scope of this committee is limited to healthcare, so this proposal does not bring in requirements for uses other than that that are addressed in the IFC Chapter 11.

This proposal is submitted by the ICC Committee on Healthcare (CHC). The CHC was established by the ICC Board to evaluate and assess contemporary code issues relating to 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. In 2017 and 2018 the CHC held 4 open meetings and numerous conference calls, which included members of the committees as well as any interested parties, to discuss and debate the proposed changes. Information on the CHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CHC effort can be downloaded from the CHC website at: https://www.iccsafe.org/codes-tech-support/cs/icc-committee-on-healthcare/.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

These requirements are bare minimum standards for all existing buildings and would be a requirement whether a facility is performing renovations or not.
2018 International Existing Building Code

Add new text as follows:

**503.17 Locking arrangements in educational occupancies.** In Group E occupancies, Group B educational occupancies and Group I-4 occupancies, egress doors with locking arrangements designed to keep intruders from entering the room shall comply with Section 1010.1.4.4 of the International Building Code.

**704.2 Locking arrangements in educational occupancies.** In Group E occupancies, Group B educational occupancies and Group I-4 occupancies, egress doors with locking arrangements designed to keep intruders from entering the room shall comply with Section 1010.1.4.4 of the International Building Code.

**Reason:** This proposal is intended to correlate with provisions found with the IBC and IFC and provide the necessary tools so that additional security can be provided for lockdowns without compromising the safety of occupants by delaying egress and rescue by first responders. Code Change proposal E48-18 was recently approved as submitted by the Means of Egress committee and revises the IBC and IFC. This proposal provides consistency on this issue within the I-Codes. Note that this concept was introduced into the IEBC as Proposal EB23-15 and was initially approved as modified but was ultimately disapproved during OGV. This gap needs to be addressed and this will be consistent with the IFC and IBC. The following text is the approved language to the 2018 IBC and IFC that will be within the 2021 I-Codes (E48-18 AS).

**2021 International Building Code and International Fire Code**

**1010.1.4.4 Locking arrangements in educational occupancies.** In Group E occupancies, Group B educational occupancies and Group I-4 occupancies, egress doors from classrooms, offices and other occupied rooms with locking arrangements designed to keep intruders from entering the room shall comply with all of the following conditions:

1. The door shall be capable of being unlocked from outside the room with a key or other approved means.

2. The door shall be openable from within the room in accordance with Section 1010.1.9.

3. Modifications shall not be made to listed panic hardware, fire door hardware or door closers.

4. Modifications to fire door assemblies shall be in accordance with NFPA 80.

Remote locking or unlocking of doors from an approved location shall be permitted in addition to the unlocking operation in Item 1.

**2021 International Fire Code**

Revise as follows

**1031.2.2 Locking arrangements in educational occupancies.** In Group E occupancies, Group B educational occupancies and Group I-4 occupancies, egress doors with locking arrangements designed to keep intruders from entering the room shall comply with Section 1010.1.4.4.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. Since 2017 the BCAC has held 6 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: https://www.iccsafe.org/codes-tech-support/codes/codedevelopment-process/building-code-actioncommittee-bcac.

**Cost Impact:** The code change proposal will not increase or decrease the cost of construction.

This is a correlation with the requirements that will appear in the 2021 IFC.

Proposal # 4353
EB63-19 Part I

PART I — IEBC: 505.2, 505.3, 505.3.1 (New), 505.4, 702.4, 702.5, 702.5.1 (New), 701.4;
IRC: R310.2.5, AJ102.4.3, AJ102.4.3.1 (New), AJ102.4.4

PART II — IRC®: R310.6 (New), R310.2.5 (New), SECTION AJ102 (New), AJ102.4 (New), AJ102.4.3 (New), AJ102.4.3.1 (New), AJ102.4.4 (New)

Proponent: Ed Kulik, representing ICC Building Code Action Committee (bcac@iccside.org)

THIS IS A 2 PART CODE CHANGE PROPOSAL. PART I WILL BE HEARD THE IEBC COMMITTEE, PART II WILL BE HEARD BY THE IRC-BUILDING COMMITTEE. PLEASE SEE THE TENTATIVE HEARING ORDERS FOR THE RESPECTIVE COMMITTEES.

2018 International Existing Building Code

Revise as follows:

5 PRESCRIPTIVE COMPLIANCE METHOD

SECTION 505
WINDOWS AND EMERGENCY ESCAPE OPENINGS

505.1 Replacement glass. The installation or replacement of glass shall be as required for new installations.

505.2 Replacement window Window opening control devices on replacement windows. In Group R-2 or R-3 buildings containing dwelling units, and one- and two-family dwellings and townhouses regulated by the International Residential Code, window opening control devices or fall prevention devices complying with ASTM F2090 shall be installed where an existing window is replaced and where all of the following apply to the replacement window:

1. The window is operable.
2. The window replacement includes replacement of the sash and the frame.
3. One of the following applies:
   3.1. In Group R-2 or R-3 buildings containing dwelling units, the top bottom of the sill clear opening of the window opening is at a height less than 36 inches (915 mm) above the finished floor.
   3.2. In one- and two-family dwellings and townhouses regulated by the International Residential Code, the top bottom of the sill clear opening of the window opening is at a height less than 24 inches (610 mm) above the finished floor.
4. The window will permit openings that will allow passage of a 4-inch-diameter (102 mm) sphere when the window is in its largest opened position.
5. The vertical distance from the top bottom of the sill clear opening of the window opening to the finished grade or other surface below, on the exterior of the building, is greater than 72 inches (1829 mm).

The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by Section 1030.2 of the International Building Code.

Exceptions: Exception:

1. Operable windows where the top bottom of the sill clear opening of the window opening is located more than 75 feet (22 860 mm) above the finished grade or other surface below, on the exterior of the room, space or building, and that are provided with window fall prevention devices that comply with ASTM F2006.
2. Operable windows with openings that are provided with window fall prevention devices that comply with ASTM F2006.

505.3 Replacement window for emergency escape and rescue openings. Where windows are required to provide emergency escape and rescue openings in Group R-2 and R-3 occupancies and one- and two-family dwellings and townhouses regulated by the International Residential Code, replacement windows shall be exempt from the requirements of Sections 1030.2, 1030.3 and 1030.4 of the International Building Code and Sections R310.2.1, R310.2.2 and R310.2.5, R310.2 and R310.4 of the International Residential Code, provided that the replacement window meets the following conditions:

1. The replacement window is the manufacturer's largest standard size window that will fit within the existing frame or existing rough opening. The replacement window shall be permitted to be of the same operating style as the existing window or a style that provides for an equal or greater window opening area than the existing window.
2. The replacement of the window is not part of a change of occupancy it shall comply with Section 1011.4.6. Window opening control devices complying with ASTM F2090 shall be permitted for use on windows required to provide emergency escape and rescue openings.
Add new text as follows:

505.3.1 Control devices. Emergency escape and rescue openings with window opening control devices or fall prevention devices complying with ASTM F2090, after operation to release the control device allowing the window to fully open, shall not reduce the net clear opening area of the window unit. Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys or tools.

Revise as follows:

505.4 Emergency escape and rescue openings. Bars, grilles, covers or screens. Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys or tools. Bars, grilles, covers, grates, screens or similar devices are permitted to be placed over emergency escape and rescue openings provided that the bulkhead enclosure or window wells that serve such openings, provided all of the following conditions are met:

1. The minimum net clear opening size complies with the code that was in effect at the time of construction and such device shall be releasable or removable from the inside without the use of a key, tool or force greater than that which is required for normal operation of the escape and rescue opening.
2. Where such bars, grilles, grates or similar devices are installed, they shall not reduce the net clear opening of the emergency escape and rescue openings.
3. Smoke alarms shall be installed in accordance with Section 907.2.10 of the International Building Code regardless of the valuation of the alteration.

SECTION 702
BUILDING ELEMENTS AND MATERIALS

702.4 Window opening control devices on replacement windows. In Group R-2 or R-3 buildings containing dwelling units and one- and two-family dwellings and townhouses regulated by the International Residential Code, window opening control devices or fall prevention devices complying with ASTM F2090 shall be installed where an existing window is replaced and where all of the following apply to the replacement window:

1. The window is operable.
2. The window replacement includes replacement of the sash and the frame.
3. One of the following applies:
   3.1. In Group R-2 or R-3 buildings containing dwelling units, the top of the clear opening of the window opening is at a height less than 36 inches (915 mm) above the finished floor.
   3.2. In one- and two-family dwellings and townhouses regulated by the International Residential Code, the top of the clear opening of the window opening is at a height less than 24 inches (610 mm) above the finished floor.
4. The window will permit openings that will allow passage of a 4-inch-diameter (102 mm) sphere when the window is in its largest opened position.
5. The vertical distance from the top of the clear opening of the window opening to the finished grade or other surface below, on the exterior of the building, is greater than 72 inches (1829 mm).

The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by Section 1030.2 of the International Building Code.

Exceptions: Exception:

† Operable windows where the top of the clear opening of the window opening is located more than 75 feet (22 860 mm) above the finished grade or other surface below, on the exterior of the room, space or building, and that are provided with window fall prevention devices that comply with ASTM F2006.

‡ Operable windows with openings that are provided with window fall prevention devices that comply with ASTM F2090.

702.5 Replacement window for emergency escape and rescue openings. Where windows are required to provide emergency escape and rescue openings in Group R-2 and R-3 occupancies and one- and two-family dwellings and townhouses regulated by the International Residential Code, replacement windows shall be exempt from the requirements of Sections 1030.2, 1030.3 and 1030.4 of the International Building Code and Sections R310.2.1, R310.2.2 and R310.2.3 of R310.2 and R310.4 of the International Residential Code, provided that the replacement window meets the following conditions:

1. The replacement window is the manufacturer’s largest standard size window that will fit within the existing frame or existing rough opening.
2. Where the replacement window is not part of a change of occupancy it shall comply with Section 1011.4.6.

Window opening control devices complying with ASTM F2090 shall be permitted for use on windows required to provide emergency escape and rescue openings.
Add new text as follows:

702.5.1 Control devices. Emergency escape and rescue openings with Window opening control devices or fall prevention devices complying with ASTM F2090, after operation to release the control device allowing the window to fully open, shall not reduce the net clear opening area of the window unit. Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys or tools.

Revise as follows:

701.4 702.6 Emergency escape and rescue openings. Bars, grilles, covers or screens. Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys or tools. Bars, grilles, grates, covers, screens or similar devices are permitted to be placed over emergency escape and rescue openings, shall comply with the bulkhead enclosure or window wells that serve such openings, provided all of the following conditions are met:

1. The minimum net clear opening size required by [complies with] the code that was in effect at the time of construction.
2. Such devices shall be releasable or removable from the inside without the use of a key, tool or force greater than that which is required for normal operation of the escape and rescue opening.
3. Where such bars, grilles, grates or similar devices are installed, they shall not reduce the net clear opening of the emergency escape and rescue openings.
4. Smoke alarms shall be installed in accordance with Section 907.2.10 of the International Building Code regardless of the valuation of the alteration.

Proposal # 4157
EB63-19 Part II
IRC®: R310.6 (New), R310.2.5 (New), SECTION AJ102 (New), AJ102.4 (New), AJ102.4.3 (New), AJ102.4.3.1 (New), AJ102.4.4 (New)

Proponent: Ed Kulik, representing ICC Building Code Action Committee (bcac@icc SAFE.org)

2018 International Residential Code
Revise as follows:

R310.6 Alterations or repairs of existing basements. An emergency escape and rescue opening is not required where existing basements undergo alterations or repairs.

   Exception: New sleeping rooms created in an existing basement shall be provided with emergency escape and rescue openings in accordance with Section R310.1.

R310.2.5 R310.7 Replacement windows, windows for emergency escape and rescue openings. Replacement windows installed in buildings meeting the scope of this code shall be exempt from the maximum sill height requirements of Section R310.2.2 and the requirements of Section R310.2 and R310.4, provided that the replacement window meets the following conditions:

   1. The replacement window is the manufacturer’s largest standard size window that will fit within the existing frame or existing rough opening. The replacement window is of the same operating style as the existing window or a style that provides for an equal or greater window opening area than the existing window.

   2. Where the replacement window is not part of a change of occupancy.

SECTION AJ102
COMPLIANCE

AJ102.4 Replacement windows. Regardless of the category of work, where an existing window, including the sash and glazed portion, or safety glazing is replaced, the replacement window or safety glazing shall comply with the requirements of Sections AJ102.4.1 through AJ102.4.4, as applicable.

AJ102.4.3 Emergency- Replacement windows for emergency escape and rescue openings. Where windows are required to provide emergency escape and rescue openings, replacement windows shall be exempt from the maximum sill height requirements of Section R310.2.2 and the requirements of Sections R310.2.1 and R310.2.3 provided Sections R310.2 and R310.4 provided that the replacement window meets the following conditions:

   1. The replacement window is the manufacturer’s largest standard size window that will fit within the existing frame or existing rough opening. The replacement window shall be permitted to be of the same operating style as the existing window or a style that provides for an equal or greater window opening area than the existing window.

   2. Where the replacement window is not part of a change of occupancy.

AJ102.4.3.1 Control devices. Emergency escape and rescue openings with window opening control devices or fall prevention devices complying with ASTM F2090, after operation to release the control device allowing the window to fully open, shall not reduce the net clear opening area of the window unit. Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys or tools.

Revise as follows:

AJ102.4.4 Window control devices. Where window opening control devices or fall prevention devices complying with ASTM F2090 are not provided, window opening control devices complying with ASTM F2090 shall be installed where an existing window is replaced and where all of the following apply to the replacement window:

   1. The window is operable.
   2. The window replacement includes replacement of the sash and the frame.
   3. The top bottom of the sill of clear opening of the window opening is at a height less than 24 inches (610 mm) above the finished floor.
   4. The window will permit openings that will allow passage of a 4-inch-diameter (102 mm) sphere where the window is in its largest opened position.
   5. The vertical distance from the top bottom of the sill of clear opening of the window opening to the finished grade or other surface below, on the exterior of the building, is greater than 72 inches (1829 mm).

The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the minimum net clear opening area of the window unit.
**Reason:** The intent of this proposal is coordination with the requirements in existing buildings for the following:
- Replacement windows with opening control devices or fall prevention devices
- Replacement window emergency escape and rescue openings (EEROs)
- Replacement windows that have to comply with both
- Bars and grills over area wells

The main intent of this proposal is to coordinate criteria in the IEBC and IRC. Part of this will be to separate the requirements into distinct sections. They are now mixed. It is not the intent to add items where they are not currently required. IRC appendix J does not address Item 4 and IRC Section 319 does not address Item 1, 3 or 4.

**Item 1**
IEBC Section 404.2 and 702.4, IRC AJ102.3.3 - F2020 includes provisions for opening control devices and fall prevention devices. By putting this in the main text, Exception 2 is not needed. (Since the IRC only deals with buildings 3 stories or less, it does not need the exception for devices permitted in taller buildings.) The term "bottom of the clear opening" is easier to determine and measure than "top of sill". This term is consistent with the proposals for new windows. The information under Item 5 has been relocated to the section dealing with Item 3.

**Item 2**
IEBC Section 505.3, 702.5, and IRC AJ102.4.3 and R310.7 - The changes in the references have to technical change. They match the package for IBC and IRC EERO requirements. The language dealing with control devices has been relocated to the section dealing with Item 3.

**Item 3**
IEBC Section 505.3.1, 702.5.1 and IRC Section AJ102.4.3.1 - This section includes the criteria for opening control devices and fall prevention devices on EEROs.

**Item 4**
IEBC 505.4 and 702.6. - The revisions are consistent in what was approved for IBC Section 1030.5 and IRC Section 310.4 in the 2018 codes. Section 701.4 should be relocated to the window provisions. That would be consistent with the organization for EEROs in IBC and IRC and the IEBC prescriptive method.
This is one of a series of proposal to coordinate the requirements for emergency escape and rescue openings in the IBC and IRC. While independent issues, if all the proposals are approved, the IRC section would appear as indicated in the reason for the proposal to revise the definition – emergency escape and rescue openings.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. Since 2017 the BCAC has held 6 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: https://www.iccsafe.org/codes-tech-support/codes/codedevelopment-process/building-code-actioncommittee-bcac.

**Cost Impact:** The code change proposal will not increase or decrease the cost of construction.
This is a correlation item between codes.

Proposal # 5754

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ICC COMMITTEE ACTION HEARINGS :: April, 2019

EB63-19 Part II
EB64-19
IEBC®: 505.1

Proponent: Timothy Pate, Colorado Chapter Code Change Committee, representing City and County of Broomfield (tpate@broomfield.org)

2018 International Existing Building Code
Revise as follows:

505.1 Replacement glass windows The installation or replacement of glass windows shall be as required for new installations.

Reason: This proposal is to change this section to deal with replacement windows and not glass. First of all replacing glass should be considered a repair and not an alteration so this requirement is not even in the correct chapter. Also it does not make sense to have a requirement in this code since that would appear to require a permit for anytime someone needs to replace a broken window. Consider the amount of new permits a jurisdiction would need to do on a daily basis. It does make sense to change the language to deal with replacement of windows which would be the entire assembly. Most jurisdictions to require permits for these window changeouts in order to make sure both energy code and life safety code are met. Finally I would point out that the 2018 IECC sections C504.2 and R504.2 have an exception to not require glass only replacements in existing sash and frames to meet current energy code and by default not require permits.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This will not increase or decrease cost of construction but will decrease cost of getting permits which will save money for the jurisdictions

Proposal # 4522

EB64-19
EB65-19
IEBC®: 505.2

Proponent: Jeff Inks, representing Window and Door Manufacturers Association (jinks@wdma.com); Jennifer Hatfield, representing American Architectural Manufacturers Association (jen@hatfieldandassociates.com)

2018 International Existing Building Code
Revise as follows:

505.2 Replacement window opening control devices. In Group R-2 or R-3 buildings containing dwelling units, and one- and two-family dwellings and townhouses regulated by the International Residential Code, window opening control devices complying with ASTM F2090 shall be installed where an existing window, including the sash and glazed portion, is replaced and where all of the following apply to the replacement window:

1. The window is operable.
2. The window replacement includes replacement of the sash and the frame.

One of the following applies:

2.1. In Group R-2 or R-3 buildings containing dwelling units, the top of the sill of the window opening is at a height less than 36 inches (915 mm) above the finished floor.

2.2. In one- and two-family dwellings and townhouses regulated by the International Residential Code, the top of the sill of the window opening is at a height less than 24 inches (610 mm) above the finished floor.

3. The window will permit openings that will allow passage of a 4-inch-diameter (102 mm) sphere when the window is in its largest opened position.

4. The vertical distance from the top of the sill of the window opening to the finished grade or other surface below, on the exterior of the building, is greater than 72 inches (1829 mm).

The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by Section 1030.2 of the International Building Code.

Exceptions:

1. Operable windows where the top of the sill of the window opening is located more than 75 feet (22 860 mm) above the finished grade or other surface below, on the exterior of the room, space or building, and that are provided with window fall prevention devices that comply with ASTM F2006.

2. Operable windows with openings that are provided with window fall prevention devices that comply with ASTM F2090.

Reason: This revision makes it clear that regardless of whether replacing the entire existing window (sash and frame), or the sash and glazed portion with an insert window where the existing frame remains, the window fall prevention requirements apply in both applications which is consistent with how the code treats these replacements for energy efficiency.

Cost Impact: The code change proposal will not increase or decrease the cost of construction.

The intent of this proposal is to ensure window fall prevention requirements are met as intended by the code. It does not have a direct impact on cost.

Proposal # 5401
EB66-19
IEBC®: 506.4.2, [BS] 1006.2

Proponent: Terry Kozlowski, representing Southern Nevada Chapter; Valarie Evans, representing Southern Nevada Chapter; Amanda Moss, representing SN-ICC Member; Cassidy Wilson, representing SN-ICC Member; Nenad Mirkovic, representing City of Las Vegas

(proirkovic@lasvegasnevada.gov)

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

2018 International Existing Building Code
Revise as follows:

506.4.2 Snow and wind loads. Where a change of occupancy results in a structure being assigned to a higher risk category, the structure shall satisfy the requirements of Sections 1608 and 1609 of the International Building Code for the new risk category.

Exception

1. Where the area of the new occupancy is less than 10 percent of the building area, compliance with this section is not required. The cumulative effect of occupancy changes over time shall be considered.
2. Change of occupancy to Group A with an occupant load less than 500 in an existing one-story building.

[BS] 1006.2 Snow and wind loads. Where a change of occupancy results in a structure being assigned to a higher risk category, the structure shall satisfy the requirements of Sections 1608 and 1609 of the *International Building Code* for the new risk category.

Exception

1. Where the area of the new occupancy is less than 10 percent of the building area. The cumulative effect of occupancy changes over time shall be considered.
2. Change of occupancy to Group A with an occupant load less than 500 in an existing one-story building.

Reason: More than 12,000 stores in 2018 and 50% of the 1,200 shopping malls across the U.S. are expected to close by 2023. This alarming trend will impact future redevelopment efforts in these existing structures. This proposal will promote the redevelopment efforts of municipalities, by reducing the construction cost without compromising security and safety of the occupants. This proposal does not adversely impact any of the architectural and/or fire design requirements. This proposal will increase the threshold from 300 to 500 occupants.

The 300 occupant load threshold may be based on the 1942 Boston fire (Exhibit D) due to the number of fatalities. Fire sprinkler, fire alarm, interior finish and structural design provisions in the code provide more protection in today's structures.

We looked to the life safety egress provisions where 500 is the threshold for when a 3rd exit is required as a good point to upgrade the structural threshold. 500 is also consistent with the current Risk Category III threshold for post 12th grade educational occupancies.

Exhibit A states the IBC and/or IEBC: “is a model code that provides minimum requirements to safeguard the public health, safety and general welfare of the occupants of new and existing buildings and structures…”

When reviewing a list of notable earthquakes and fatalities associated with events from January 26, 1700 to January 23, 2018 (318 years), there have been approximately 3,919 fatalities (Exhibit A). In comparison, Exhibit B shows motor vehicle deaths in the U.S. for the last 11 years. In 2017 alone, there were 37,133 vehicle deaths. Exhibit C (2007-2016) show there were 145 fire-related fatalities and 1,550 injuries in non-residential fires.

These statistics provide comparison in historical data as to the number of deaths in structures during earthquakes.

Bibliography: 1. 1927 UBC (occupancy Group C-1) it is seating capacity in any one room of less than 500 (Exhibit “E”); 2. 1943 UBC (occupancy Group B-2) it is seating capacity in any one room of 100 or more (Exhibit “E”); 3. November 1942 Boston Night Club Fire (see LA Times form 11/29/1942, Exhibit “D”) It should be noted that the 1943 UBC was approved for printing on 10/1942, prior to the fire); 4. 1946 UBC, occupancy Group B-2 with seating capacity in any one room of 300 or more and occupancy Group B-3 with seating capacity in any one room of less than 300 (Exhibit “E”); 5. 1949 IBC occupancy Group B-2 with an occupant load in the building of 300 or more and occupancy Group B-3 with an occupant load in the building of less than 300 (Exhibit “E”).
**Cost Impact:** The code change proposal will decrease the cost of construction

This proposal will decrease the cost of construction for structures with an occupant load of less than 500 by eliminating the requirement of seismic analysis and potential additional costs associated with improvements to existing structures.
EB67-19
IEBC®: 506.4.3, [BS]1006.3

Proponent: Terry Kozlowski, representing Southern Nevada Chapter; Valarie Evans, representing Southern Nevada Chapter; Amanda Moss, representing SN-ICC Member; Cassidy Wilson, representing SN-ICC Member; Nenad Mirkovic, representing City of Las Vegas (nmirkovic@lasvegasnevada.gov)

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

2018 International Existing Building Code

Revise as follows:

506.4.3 Seismic loads (seismic force-resisting system). Where a change of occupancy results in a building being assigned to a higher risk category, the building shall satisfy the requirements of Section 1613 of the International Building Code for the new risk category using full seismic forces.

Exceptions:

1. Where the area of the new occupancy is less than 10 percent of the building area and the new occupancy is not assigned to Risk Category IV, compliance with this section is not required. The cumulative effect of occupancy changes over time shall be considered.
2. Where a change of use results in a building being reclassified from Risk Category I or II to Risk Category III and the seismic coefficient, SDS, is less than 0.33, compliance with this section is not required.
3. Unreinforced masonry bearing wall buildings assigned to Risk Category III and to Seismic Design Category A or B, shall be permitted to use Appendix Chapter A1 of this code.
4. Change of occupancy to Group A with an occupant load not to exceed 500 in an existing one-story building.

[BS]1006.3 Seismic loads. Where a change of occupancy results in a building being assigned to a higher risk category, the building shall satisfy the requirements of Section 1613 of the International Building Code for the new risk category using full seismic forces.

Exceptions:

1. Where a change of use results in a building being reclassified from Risk Category I or II to Risk Category III and the seismic coefficient, SDS, is less than 0.33.
2. Where the area of the new occupancy is less than 10 percent of the building area and the new occupancy is not assigned to Risk Category IV. The cumulative effect of occupancy changes over time shall be considered.
3. Unreinforced masonry bearing wall buildings assigned to Risk Category III and to Seismic Design Category A or B shall be permitted to use Appendix Chapter A1 of this code.
4. Change of occupancy to Group A with an occupant load not to exceed 500 in an existing one-story building.

Reason: More than 12,000 stores in 2018 and 50% of the 1,200 shopping malls across the U.S. are expected to close by 2023. This alarming trend will impact future redevelopment efforts in these existing structures. This proposal will promote the redevelopment efforts of municipalities, by reducing the construction cost without compromising security and safety of the occupants. This proposal does not adversely impact any of the architectural and/or fire design requirements. This proposal will increase the threshold from 300 to 500 occupants.

The 300 occupant load threshold may be based on the 1942 Boston fire (Exhibit D) due to the number of fatalities. Fire sprinkler, fire alarm, interior finish and structural design provisions in the code provide more protection in today’s structures.

We looked to the life safety egress provisions where 500 is the threshold for when a 3rd exit is required as a good point to upgrade the structural threshold. 500 is also consistent with the current Risk Category III threshold for post 12th grade educational occupancies.

Exhibit A states the IBC and/or IEBC: “is a model code that provides minimum requirements to safeguard the public health, safety and general welfare of the occupants of new and existing buildings and structures…”

When reviewing a list of notable earthquakes and fatalities associated with events from January 26, 1700 to January 23, 2018 (318 years), there have been approximately 3,919 fatalities (Exhibit A). In comparison, Exhibit B shows motor vehicle deaths in the U.S. for the last 11 years. In 2017 alone, there were 37,133 vehicle deaths. Exhibit C (2007-2016) show there were 145 fire-related fatalities and 1,550 injuries in non-residential fires. These statistics provide comparison in historical data as to the number of deaths in structures during earthquakes.

Bibliography: 1. 1927 UBC (occupancy Group C-1) it is seating capacity in any one room of less than 500 (Exhibit “E”);
2. 1943 UBC (occupancy Group B-2) it is seating capacity in any one room of 100 or more (Exhibit “E”);

3. November 1942 Boston Night Club Fire (see LA Times form 11/29/1942, Exhibit “D”) It should be noted that the 1943 UBC was approved for printing on 10/1942, prior to the fire);

4. 1946 UBC, occupancy Group B-2 with seating capacity in any one room of 300 or more and occupancy Group B-3 with seating capacity in any one room of less than 300 (Exhibit “E”);

5. 1949 IBC occupancy Group B-2 with an occupant load in in the building of 300 or more and occupancy Group B-3 with an occupant load in the building of less than 300 (Exhibit “E”).

**Cost Impact:** The code change proposal will decrease the cost of construction
This proposal will decrease the cost of construction for structures with an occupant load of less than 500 by eliminating the requirement of seismic analysis and potential additional costs associated with improvements to existing structures.

Proposal # 4414

EB67-19
EB68-19

IEBC®: SECTION 506, 506.4.3, SECTION 1006, [BS]1006.3

Proponent: Marko Schotanus, National Council of Structural Engineers Associations, representing National Council of Structural Engineers Associations (mschotanus@ruthchek.com); Michael Fillion (mrf.structure@verizon.net)

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

2018 International Existing Building Code

SECTION 506
CHANGE OF OCCUPANCY

Revise as follows:

506.4.3 Seismic loads (seismic force-resisting system). Where a change of occupancy results in a building being assigned to a higher risk category, or where the change is from a Group S or Group U occupancy to any occupancy other than Group S or Group U, the building shall satisfy the requirements of Section 1613 of the International Building Code for the new risk category using full seismic forces.

Exceptions:

1. Where the area of the new occupancy is less than 10 percent of the building area, the occupant load of the area with the new occupancy is not increased, and the new occupancy is not assigned to Risk Category IV, compliance with this section is not required. The cumulative effect of occupancy changes over time shall be considered.
2. Where a change of use results in a building being reclassified from Risk Category I or II to Risk Category III and the seismic coefficient, SDS, is less than 0.33, compliance with this section is not required.
3. Unreinforced masonry bearing wall buildings assigned to Risk Category III and to Seismic Design Category A or B, shall be permitted to use Appendix Chapter A1 of this code.
4. Where the change is from a Group S or Group U occupancy, use of reduced seismic forces shall be permitted.

SECTION 1006
STRUCTURAL

[BS]1006.3 Seismic loads. Where a change of occupancy results in a building being assigned to a higher risk category, or where the change is from a Group S or Group U occupancy to any occupancy other than Group S or Group U, the building shall satisfy the requirements of Section 1613 of the International Building Code for the new risk category using full seismic forces.

Exceptions:

1. Where a change of use results in a building being reclassified from Risk Category I or II to Risk Category III and the seismic coefficient, SDS, is less than 0.33, compliance with this section is not required.
2. Where the area of the new occupancy is less than 10 percent of the building area, the occupant load of the area with the new occupancy is not increased, and the new occupancy is not assigned to Risk Category IV. The cumulative effect of occupancy changes over time shall be considered.
3. Unreinforced masonry bearing wall buildings assigned to Risk Category III and to Seismic Design Category A or B shall be permitted to use Appendix Chapter A1 of this code.
4. Where the change is from a Group S or Group U occupancy, use of reduced seismic forces shall be permitted.

Reason: Quite often, storage, parking, or utility areas, often unfinished, are converted to occupied residential units or leasable office or commercial space. In a seismically deficient building, such a change represents a significant increase in risk that the code should not ignore. The current proposal revises the change of occupancy trigger, by re-introducing seismic upgrade triggers of the type the code had until 2012 to specifically address conversion from unoccupied space (U and S occupancies) to commercial and residential space (B and R occupancies), but with the allowance of reduced loads. Matching provisions are proposed for the Prescriptive (IEBC Section 506) and Work Area (IEBC Section 1006) methods.

In the 2012 IBC and IEBC, the seismic upgrade triggers for change of occupancy projects were greatly simplified so that an upgrade is triggered only when the change is so significant that it elevates the building into a higher risk category. This was a useful improvement to the previous set of triggers, but it was an over-reach in one regard: Quite often, the ground floor of a residential building is converted from a storage, parking, or utility area, often unfinished, to an occupied residential unit or leasable office or commercial space. Similarly, warehouses are often converted to residences and offices. In a seismically deficient building, the related increase in the number of (actual) occupants represents a significant increase in risk that the code should not ignore.
In the 2009 IEBC (Work Area method), such a change of occupancy would have triggered a full-building seismic upgrade with full code-level loads. Since 2012, however, since such a change would not affect the risk category (it would be II before and after), no evaluation or upgrade is triggered for these cases.

The alteration normally associated with such a change of occupancy also is unlikely to trigger any seismic work.

This proposal re-introduces the seismic upgrade trigger for these specific cases:

- The proposal restores a requirement that was already in the code in 2009 but was removed in 2012. So there is precedent for what this proposal accomplishes.
- Matching provisions are proposed for the Prescriptive (IEBC Section 506) and Work Area (IEBC Section 1006) methods.
- The 10% "small area" exception is modified to prevent gaming, since the cases in question can involve only part of a story.
- An exception to the full-code criteria is added. Since these occupancy changes are less significant than a wholesale shift in risk category, we suggest that the use of reduced seismic loads is appropriate. For many tilt-up warehouses and wood frame apartment buildings, the use of reduced loads allows use of IEBC Appendix Chapters A2 and A4, which will limit the extent of retrofit work, making the triggered retrofit quite feasible.

**Cost Impact:** The code change proposal will increase the cost of construction
The cost of converting an unfinished space with rare or incidental human occupancy to occupied space would be increased by the cost of a retrofit with reduced forces.
EB69-19
IEBC®: 506.4.3, [BS]1006.3

Proponent: David Bonowitz, representing Self (dbonowitz@att.net)

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

2018 International Existing Building Code

Revise as follows:

506.4.3 Seismic loads (seismic force-resisting system). Where a change of occupancy results in a building being assigned to a higher risk category, or where the change is from a Group S or Group U occupancy to any occupancy other than Group S or Group U, the building shall satisfy the requirements of Section 1613 of the International Building Code for the new risk category using full seismic forces.

Exceptions:

1. Where the area of the new occupancy is less than 10 percent of the building area, the occupancy is not changing from a Group S or Group U occupancy, and the new occupancy is not assigned to Risk Category IV, compliance with this section is not required. The cumulative effect of occupancy changes over time shall be considered.
2. Where a change of use results in a building being reclassified from Risk Category I or II to Risk Category III and the seismic coefficient, SDS, is less than 0.33, compliance with this section is not required.
3. Unreinforced masonry bearing wall buildings assigned to Risk Category III and to Seismic Design Category A or B, shall be permitted to use Appendix Chapter A1 of this code.
4. Where the change is from a Group S or Group U occupancy and there is no change of risk category, use of reduced seismic forces shall be permitted.

[BS]1006.3 Seismic loads. Where a change of occupancy results in a building being assigned to a higher risk category, or where the change is from a Group S or Group U occupancy to any occupancy other than Group S or Group U, the building shall satisfy the requirements of Section 1613 of the International Building Code for the new risk category using full seismic forces.

Exceptions:

1. Where a change of use results in a building being reclassified from Risk Category I or II to Risk Category III and the seismic coefficient, SDS, is less than 0.33, compliance with this section is not required.
2. Where the area of the new occupancy is less than 10 percent of the building area, the occupancy is not changing from a Group S or Group U occupancy, and the new occupancy is not assigned to Risk Category IV, compliance with this section is not required. The cumulative effect of occupancy changes over time shall be considered.
3. Unreinforced masonry bearing wall buildings assigned to Risk Category III and to Seismic Design Category A or B shall be permitted to use Appendix Chapter A1 of this code.
4. Where the change is from a Group S or Group U occupancy and there is no change of risk category, use of reduced seismic forces shall be permitted.

Reason: This proposal re-introduces a common sense seismic upgrade trigger of the type the code had until 2012. To make the trigger more feasible, it allows reduced loads.

Since the 2012 IEBC, a change of occupancy project triggers seismic upgrade only when the change is so significant that it bumps the building into a higher risk category. While this is preferable to the pre-2012 triggers (which were arbitrary and needlessly complex), it misses the common case in which an unoccupied storage, parking, or utility area is converted to an occupied residential unit or leasable office or commercial space. In a seismically deficient building, such a change amounts to adding units to substandard buildings -- and often in the ground story where potential collapse poses the greatest safety risk. This is just as risky as building new housing to grossly obsolete seismic standards. The growing interest in accessory dwelling units (ADUs) makes the risk even more urgent. Converting collapse-prone unoccupied space to new occupied space represents a significant increase in risk that the code should not ignore.

However, since Group S, U, R, B, and M occupancies are all typically assigned to Risk Category II, a change from S or U to R, B, or M would not trigger any seismic work by the current code. In the 2009 IEBC (Work Area method), such a change would have triggered a full-building seismic upgrade with full code-level loads.

This proposal would re-introduce the seismic upgrade trigger for these specific cases. It makes identical changes to both the Prescriptive and Work Area methods.

The proposal has precedent, since a similar requirement was already in the 2009 IEBC.
The 10% "small area" exception is modified appropriately, to make sure that a change from S or U to occupied space would not escape review just because it is only in the first story of a large building.

Reduced forces are allowed. Since these occupancy changes are less significant than a whole-building shift in risk category, the use of reduced seismic loads is appropriate. (Some might argue that adding units to a building that meets only reduced seismic criteria is still an increase in risk relative to new construction. That is true, but the growth of ADU programs calls for the feasibility afforded by reduced loads. This proposal is meant to facilitate ADU programs, but not for grossly deficient buildings that reduced seismic criteria would catch. For many woodframe apartment buildings, the use of reduced loads also allows IEBC Appendix A4, which would effectively limit any retrofit work to the first story, making the triggered retrofit quite feasible.)

**Cost Impact:** The code change proposal will increase the cost of construction
The cost of converting an unfinished space to a functional residential unit would be increased by the cost of a retrofit with reduced forces.
IEBC®: 603.1

Proponent: Allison Cook, representing VBCOA; David Collins, representing The American Institute of Architects (dcollins@preview-group.com); Debra McMahon (debra.mcmahon@fairfaxcounty.gov); Kenney Payne, Moseley Architects, representing AIA Virginia (kpayne@moseleyarchitects.com); Ronald Clements Jr., representing Chesterfield County (clementsro@chesterfield.gov); Shaina Abney, representing VBCOA (shaina.abney@fairfaxcounty.gov); Bob Orr, Culpeper County, representing VBCOA (borr@culpepercounty.gov); Charles Vernon, representing VBCOA (cvernnon@arlingtonva.us); Michael Williams (mike.williams@harrisonburgva.gov); Christina Jackson, representing City of Norfolk / WICED of VA (christina.reynolds@norfolk.gov)

2018 International Existing Building Code

Revise as follows:

603.1 Scope. Level 2 alterations include the reconfiguration of space, the addition or elimination of any door or window, the reconfiguration or extension of any system, or the installation of any additional equipment; and shall apply where the work area is equal to or less than 50 percent of the building area.

Reason: The use of "work area", which is a defined term, instead of "reconfigured spaces" provides clarification and consistency by using defined terms. The addition of "50% or less" is to align with the scope of a level 3, which applies when the work area that exceeds 50%

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This proposal is only to clarify the language.

Proposal # 5225
EB71-19
IEBC: [A] 105.2, 603.1, 704.2 (New), 801.3 (New)

Proponent: Ed Kulik, representing ICC Building Code Action Committee (bcac@iccorg)

2018 International Existing Building Code
Revise as follows:

[A] 105.2 Work exempt from permit. Exemptions from permit requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws or ordinances of this jurisdiction. Permits shall not be required for the following:

Building:

1. Sidewalks and driveways not more than 30 inches (762 mm) above grade and not over any basement or story below and that are not part of an accessible route.
2. Painting, papering, tiling, carpeting, cabinets, counter tops, and similar finish work.
3. Temporary motion picture, television, and theater stage sets and scenery.
4. Shade cloth structures constructed for nursery or agricultural purposes, and not including service systems.
5. Window awnings supported by an exterior wall of Group R-3 or Group U occupancies.
6. Moveable Non-fixed and moveable cases, counters, and partitions not over 60 5 feet and 9 inches inches (1753 mm) in height.

Electrical:

1. Repairs and maintenance: Minor repair work, including the replacement of lamps or the connection of approved portable electrical equipment to approved permanently installed receptacles.
2. Radio and television transmitting stations: The provisions of this code shall not apply to electrical equipment used for radio and television transmissions, but do apply to equipment and wiring for power supply, the installations of towers, and antennas.
3. Temporary testing systems: A permit shall not be required for the installation of any temporary system required for the testing or servicing of electrical equipment or apparatus.

Gas:

1. Portable heating appliance.
2. Replacement of any minor part that does not alter approval of equipment or make such equipment unsafe.

Mechanical:

1. Portable heating appliance.
2. Portable ventilation equipment.
3. Portable cooling unit.
4. Steam, hot, or chilled water piping within any heating or cooling equipment regulated by this code.
5. Replacement of any part that does not alter its approval or make it unsafe.
6. Portable evaporative cooler.
7. Self-contained refrigeration system containing 10 pounds (4.54 kg) or less of refrigerant and actuated by motors of 1 horsepower (746 W) or less.

Plumbing:

1. The stopping of leaks in drains, water, soil, waste, or vent pipe; provided, however, that if any concealed trap, drainpipe, water, soil, waste, or vent pipe becomes defective and it becomes necessary to remove and replace the same with new material, such work shall be considered as new work, and a permit shall be obtained and inspection made as provided in this code.
2. The clearing of stoppages or the repairing of leaks in pipes, valves, or fixtures, and the removal and reinstallation of water closets, provided that such repairs do not involve or require the replacement or rearrangement of valves, pipes, or fixtures.

603.1 Scope. Level 2 alterations include the reconfiguration of space, the addition or elimination of any door or window, the reconfiguration or extension of any system, or the installation of any additional equipment.

Exception: The movement or addition of non-fixed and movable fixtures, cases, racks, counters and partitions not over 5 feet 9 inches (1753mm) in height shall not be considered a Level 2 alteration.

SECTION 704
MEANS OF EGRESS

704.1 General. Alterations shall be done in a manner that maintains the level of protection provided for the means of egress.

Add new text as follows:

704.2 Casework. Addition, alteration or reconfiguration of non-fixed and movable cases, counters, and partitions not over 5 feet 9 inches (1753 mm) in height shall maintain the required means of egress path.

801.3 System installations. Requirements related to work area are not applicable where the Level 2 alteration alterations are limited solely to one or more of the following:

1. Mechanical systems, electrical systems, fire protection systems and abatement of hazardous materials.
2. Windows, hardware, operating controls, electrical outlets and signs.
3. Alterations undertaken for the primary purpose of increasing the accessibility of a facility.

Reason: There are many issues of confusion in determining what is considered a “work area.” The definition of “work area” specifically states “reconfiguration of space.” It should address when the floor plan (egress etc.) changes not when a sprinkler system is installed in a building. Also what is included in reconfiguration – furniture/cubicles? Part of the confusion with this issue is that there seems to be a need to establish a work area where in some cases none exist. It can still be a level 2 alteration but with no work area associated with it. This does not mean that there are no regulations just that it will not necessarily make some provisions applicable such as those related to egress or move it into a Level 3 alteration situation.

Level 2, as defined in Chapter 6, includes extension of any system. The intent of this proposal is to not throw a project into Level 2 if there is only the movement of casework. The new language in Section 803.1 is to clarify that the movement of casework is not considered reconfiguration of a space and thus moving furniture will not be considered a Level 2 alteration. The addition to Section 704.2 is due to a concern that the movement of casework should not violate allowances for means of egress. Since these elements are exempt from permits (but not code requirements), the change to Section 105.2 is just for consistent terminology.

Section 801.3: If an alteration does not change the physical configuration of a space or is to improve accessibility, this should also not throw a building owner into an additional series of requirements. This allows for building owners to improve their buildings over time.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. Since 2017 the BCAC has held 6 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: https://www.iccsafe.org/codes-tech-support/codes/codedevelopment-process/building-code-actioncommittee-bcac.

Cost Impact: The code change proposal will decrease the cost of construction

This would allow improvements that did not change the configuration of the space to not trigger Level 2 or 3 requirements.

Proposal # 4199

EB71-19
IEBC®: SECTION 608 (New), 608.1 (New), 608.2 (New)

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

2018 International Existing Building Code
Delete without substitution:

SECTION 608
RELOCATED BUILDINGS

608.1 Scope. Relocated building provisions shall apply to relocated or moved buildings.

608.2 Application. Relocated buildings shall comply with the provisions of Chapter 14.

Reason: Section 301.4 already denotes that outside the three methods that relocated buildings are addressed by Chapter 14.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. Since 2017 the BCAC has held 6 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: https://www.iccsafe.org/codes-tech-support/codes/codedevelopment-process/building-code-actioncommittee-bcac.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

Editorial change.

Proposal # 4221
2018 International Existing Building Code

Revise as follows:

702.4 Window opening control devices on replacement windows. In Group R-2 or R-3 buildings containing dwelling units and one- and two-family dwellings and townhouses regulated by the International Residential Code, window opening control devices complying with ASTM F2090 shall be installed where an existing window, including the sash and glazed portion, is replaced and where all of the following apply to the replacement window:

1. The window is operable.
2. The window replacement includes replacement of the sash and the frame.
3. One of the following applies:
   3.1. In Group R-2 or R-3 buildings containing dwelling units, the top of the sill of the window opening is at a height less than 36 inches (915 mm) above the finished floor.
   3.2. In one- and two-family dwellings and townhouses regulated by the International Residential Code, the top sill of the window opening is at a height less than 24 inches (610 mm) above the finished floor.<
4. The window will permit openings that will allow passage of a 4-inch-diameter (102 mm) sphere when the window is in its largest opened position.
5. The vertical distance from the top of the sill of the window opening to the finished grade or other surface below, on the exterior of the building, is greater than 72 inches (1829 mm).

The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by Section 1030.2 of the International Building Code.

Exceptions:

1. Operable windows where the top of the sill of the window opening is located more than 75 feet (22 860 mm) above the finished grade or other surface below, on the exterior of the room, space or building, and that are provided with window fall prevention devices that comply with ASTM F2006.
2. Operable windows with openings that are provided with window fall prevention devices that comply with ASTM F2090.

Reason: This revision makes it clear that regardless of whether replacing the entire existing window (sash and frame), or the sash and glazed portion with an insert window where the existing frame remains, the window fall prevention requirements apply in both applications which is consistent with how the code treats these replacements for energy efficiency.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

The intent of this proposal is to ensure window fall prevention requirements are met as intended by the code. It does not have a direct impact on cost.
2018 International Existing Building Code

SECTION 704
MEANS OF EGRESS

704.1 General. Alterations shall be done in a manner that maintains the level of protection provided for the means of egress.

Add new text as follows:

704.1.1 Projections in Nursing Home Corridors. In Group I-2, Condition 1 occupancies, where the corridor is at least 96 inches wide, projections into the corridor width are permitted in accordance with Section 407.4.3 of the International Building Code.

SECTION 805
MEANS OF EGRESS

805.1 Scope. The requirements of this section shall be limited to work areas that include exits or corridors shared by more than one tenant within the work area in which Level 2 alterations are being performed, and where specified they shall apply throughout the floor on which the work areas are located or otherwise beyond the work area.

805.2 General. The means of egress shall comply with the requirements of this section.

Exceptions:

1. Where the work area and the means of egress serving it complies with NFPA 101.
2. Means of egress complying with the requirements of the building code under which the building was constructed shall be considered to be compliant means of egress if, in the opinion of the code official, they do not constitute a distinct hazard to life.

Add new text as follows:

805.3 Group I-2. In Group I-2 occupancies, in areas where corridors are used for movement of care recipients in beds, the clear width of ramps and corridors shall be not less than 48 inches (1219 mm).

Reason: The purpose of this proposal is to address required corridor width in Group I-2.
The change to Level 1 alterations is to allow for furniture to be added into the corridors in nursing homes. This is currently allowed in the IBC so that seating areas for socialization and to allow for residents to sit down to rest are permitted where the furniture will not block the means of egress.

The change to Level 2 alterations is to allow for existing corridors to remain at the 48” width as permitted in the IFC. It does not make sense to have to make a portion of a corridor wider than the routes leading to and from that portion.

Dead ends are addressed in another proposal to IEBC Section 805.6.

The following text is in the IFC.

IFC

1105.6.3 Ramps. In areas where ramps are used for movement of patients in beds, the clear width of the ramp shall be not less than 48 inches (1219 mm).

1105.6.4 Corridor width. In areas where corridors are used for movement of patients in beds, the clear width of the corridor shall be not less than 48 inches (1219 mm).

1105.6.5 Dead-end corridors. In smoke compartments containing patient sleeping rooms and treatment rooms, dead-end corridors shall not exceed 30 feet (9144 mm) unless approved by the fire code official.

This proposal is submitted by the ICC Committee on Healthcare (CHC). The CHC was established by the ICC Board to evaluate and assess contemporary code issues relating to 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. In 2017 and 2018 the CHC held 4 open meetings and numerous conference calls, which included members of the committees as well as any interested parties, to discuss and
debate the proposed changes. Information on the CHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CHC effort can be downloaded from the CHC website at: https://www.iccsafe.org/codes-tech-support/cs/icc-committee-on-healthcare/.

**Cost Impact:** The code change proposal will not increase or decrease the cost of construction. This change would allow for additional design options.

Proposal # 4248

EB74-19
EB75-19

IEBC®: [BS] 705.2; IBC®: 1511.2

Proponent: David Bonowitz, representing Self (dbonowitz@att.net)

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

2018 International Existing Building Code

Revise as follows:

[BS] 705.2 Structural and construction loads. Structural roof components shall be capable of supporting the roof-covering system and the material and equipment loads that will be encountered during installation of the system.

2018 International Building Code

1511.2 Structural and construction loads. Structural roof components shall be capable of supporting the roof-covering system and the material and equipment loads that will be encountered during installation of the system.

Reason: The proposal moves a provision about construction loads from IEBC Chapter 7 (Alterations – Level 1) to Chapter 15 (Construction Safeguards). Per ICC staff, IEBC Section 705 is linked to IBC Section 1511, so at ICC request, the proposal makes a matching move within the IBC. The motivation for this proposal is simply to make the structural provisions of the IEBC Work Area and Prescriptive methods match as closely as possible – a motivation that received broad support in the last cycle, resulting in greatly improved consistency in the 2018 code.

This provision for reroofing, however, remains out of sync. Currently, the Work Area method has this provision in Section 705.2, but the Prescriptive method has no matching provision.

In the last cycle, proposal EB19-16 would have added a matching provision to the Prescriptive method. The ICC Committee supported the concept but suggested that instead of adding a duplicate provision, Section 705.2 should be moved to Chapter 15 where it made more sense and could serve both methods. Therefore, following the committee's suggestion, a public comment was submitted. At the PCH, the comment was easily approved by a nearly unanimous show of hands, but it received only 65% approval by OGV voters, so EB19-16 As Modified could not be approved despite broad consensus.

(Note: While both parts of this proposal should be approved, it is perhaps worth noting that the IEBC Prescriptive method still lacks reroofing provisions to match those of the Work Area method in Sec 705. To resolve this, one might propose creating a new section in IEBC Chapter 5 to match the remaining provisions in Sec 705. That could be done as a floor modification or as a public comment, but it is outside the initial narrow scope of this proposal. Going even further, one might propose deleting the rest of IBC Sec 1511 because it is entirely about reroofing, which is an Existing Buildings issue, but that, too, is outside the scope of this proposal.)

Cost Impact: The code change proposal will not increase or decrease the cost of construction

The proposal merely relocates existing provisions to more logical places.
EB76-19
IEBC®: [BS] 706.2, (New)

Proponent: Michael Fillion, representing National Council of Structural Engineers Association (mrf.structure@verizon.net)

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

2018 International Existing Building Code
Revise as follows:

[BS] 706.2 Addition or replacement of roofing or replacement of equipment. Any existing gravity load-carrying structural element for which an alteration causes an increase in design dead, live or snow load, including snow drift effects, of more than 5 percent shall be replaced or altered as needed to carry the gravity loads required by the International Building Code for new structures.

Exceptions:

1. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the altered building complies with the conventional light-frame construction methods of the International Building Code or the provisions of the International Residential Code.
2. Buildings in which the increased dead load is due entirely to the addition of a second layer of roof covering weighing 3 pounds per square foot (0.1437 kN/m²) or less over an existing single layer of roof covering. This exception shall not apply where insulation is added to the roof assembly.

Add new definition as follows:

[BS] ROOF COVERING. The covering applied to the roof deck for weather resistance, fire classification or appearance.

Reason: In many re-roofing projects, insulation and membrane are placed over an existing roof covering. The weight of the insulation and membrane are usually less than 3 pounds per square foot (0.1437 kN.m²).

It has been our observation that some design professionals and building officials are using this exception when insulation is added with the new second layer of roof covering. Addition of insulation increases the thermal resistance (R-value) resulting in a higher Thermal Factor, Ct which will increase the design roof snow load. Because of this oversight in some instances, we feel it is important to include the IBC roof covering definition and to make it clear that adding insulation is not included in Exception #2.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The intent of this code change proposal is for clarification.
2018 International Existing Building Code

Revise as follows:

707.1 Minimum requirements. Level 1 alterations to existing buildings or structures do not require the entire building or structure to comply with the energy requirements of the International Energy Conservation Code or International Residential Code. The alterations shall conform to the energy requirements of the International Energy Conservation Code or International Residential Code as they relate to new construction only.

   Exception: Like materials, assemblies or thicknesses shall be permitted for alterations involving the exterior building thermal envelope, provided no hazard to life, health or property is created. Hazardous materials shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.

810.1 Minimum requirements. Level 2 alterations to existing buildings or structures are permitted without requiring the entire building or structure to comply with the energy requirements of the International Energy Conservation Code or International Residential Code. The alterations shall conform to the energy requirements of the International Energy Conservation Code or International Residential Code as they relate to new construction only.

   Exception: Like materials, assemblies or thicknesses shall be permitted for alterations involving the exterior building thermal envelope, provided no hazard to life, health or property is created. Hazardous materials shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.

907.1 Minimum requirements. Level 3 alterations to existing buildings or structures are permitted without requiring the entire building or structure to comply with the energy requirements of the International Energy Conservation Code or International Residential Code. The alterations shall conform to the energy requirements of the International Energy Conservation Code or International Residential Code as they relate to new construction only.

   Exception: Like materials, assemblies or thicknesses shall be permitted for alterations involving the exterior building thermal envelope, provided no hazard to life, health or property is created. Hazardous materials shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.

Reason: When replacing insulation in the thermal envelope, the energy requirement demands the affected area be in compliance with the International Energy Conservation Code. This can require the tenant to increase the thickness of the wall or roof framing to satisfy the depth of the insulation for proper installation. This would discourage rehabilitation of many older structures. The purpose of the Existing Building code should be to allow existing buildings to be renovated and occupied while maintaining the level of safety. It should not be to retrofit the tenant space or building to meet today’s code.

Cost Impact: The code change proposal will decrease the cost of construction. This should result in a cost savings since a tenant would no longer have to increase the thickness of the wall or roof framing to satisfy the depth of the insulation for proper installation.
EB78-19

IEBC®: 802.4

Proponent: Tim Earl, representing GBH International (tearl@gbhinternational.com)

2018 International Existing Building Code

Revise as follows:

802.4 Interior finish. The interior finish of walls and ceilings in exits and corridors in any work area shall comply with the requirements of the International Building Code.

Exception: Existing interior finish materials that do not comply with the interior finish requirements of the International Building Code shall be permitted to be treated with an approved fire-retardant coating in accordance with the manufacturer's instructions to achieve the required rating.

Fire performance. Compliance with this section shall be demonstrated by testing the fire-retardant coating on the same material and achieving the required performance. Where the same material is not available, testing on a similar material shall be permitted.

Reason: It is important to clarify that, if fire retardant coatings are to be used to achieve improved fire performance, they must have been tested on the actual product (substrate) to which they will be applied. There have been instances of manufacturers applying coatings to a noncombustible surface and running an ASTM E84 test in an attempt to demonstrate compliance. (See figures below). This obviously does not reflect real world performance and is not the intent of the code. This proposal would make the requirement more explicit.
Cost Impact: The code change proposal will increase the cost of construction
This proposal may increase the cost of construction if people have using flame retardant coatings that have not been tested on the material to which they will be applied.

Proposal # 4921

EB78-19
2018 International Existing Building Code

Revise as follows:

802.4 Interior finish. The interior finish and trim of walls and ceilings in exits and corridors in any work area shall comply with the requirements of the International Building Code.

Exception: Existing interior finish materials that do not comply with the interior finish requirements of the International Building Code shall be permitted to be treated with an approved fire-retardant coating in accordance with the manufacturer’s instructions to achieve the required rating.

802.4.1 Supplemental interior finish requirements. Where the work area on any floor exceeds 50 percent of the floor area, Section 802.4 shall apply to the interior finish and trim in exits and corridors serving the work area throughout the floor.

Exception: Interior finish within tenant spaces that are entirely outside the work area.

Reason: The exception is not really a proper exception: the interior finish still must meet the IBC requirements, but that can be achieved by using a fire-retardant coating. The words "and trim" are added for clarification, since it is most likely the intent of the section anyway. The repeated use of "interior finish" is eliminated as unnecessary. The interior finish requirements are based on fire performance in terms of a flame spread index and a smoke developed index (or on results of a room-corner test such as NFPA 286) and are not a rating.

Cost Impact: The code change proposal will increase the cost of construction. This adds the requirement that trim also meet the fire testing in the IBC.
IEBC®: 803.4.4 (New)

Proponent: Thomas Daly, HSCG, representing HSCG (Thomas.Daly@myhscg.com)

2018 International Existing Building Code

Add new text as follows:

803.4.4 Smoke Alarms replacement. Where existing smoke alarms in sleeping units of Group I and R occupancies, requiring only a single smoke alarm without interconnection, are to be replaced, ten-year listed sealed battery powered smoke alarms shall be permitted, as an option.

Reason:

1. The 2018 IFC requires smoke alarms in occupancies other than one and two-family dwellings to be replaced if non-functional or when they have reached 10 years of age. ICC Interpretation 01-18 issued 5.15.18 and re-affirmed 8.15.18 expanded that mandate to impact existing smoke alarms in existing buildings. That Interpretation also indicated that such replacement was deemed 'maintenance' not 'construction'.

As such, the IEBC and, in the next cycle the IPMC, are the requisite codes in which to make this change since the IFC specifies construction requirements for smoke alarms. As the IMPC was included in Group A codes, only the IEBC remains available now to amend.

1. History – 10-yr smoke alarms were first allowed in the 2002 edition of NFPA 72, see Sec. 11.6.1(3) and continue to be allowed, see the 2019 edition of NFPA 72 Sec. 29.9.1(3) and 29.9.2.

This technology gained favor among both fire officials and the public as it precluded the removal of the battery (a known factor in residential fire deaths) and avoided the periodic replacement of such batteries, typically annually, for battery only powered smoke alarms or the back-up battery in 120vac powered smoke alarms (often ignored by property owners).


There have been no reported recalls of 10-yr smoke alarms based on a review of the Consumer Product Safety Commission (CPSC) website, see https://cpsc.gov/search?site=cpsc_site&output=xml_no_dtd&getfields=*&tlen=120&client=ek_drupal_01&proxystylesheet=ek_drupal_01&filter=p&query=smoke+alarm+recalls. As such, 10-yr smoke alarms have a proven track record of reliability.

Further, NFPA studies, see for example https://www.nfpa.org/News-and-Research/Data-research-and-tools/Detection-and-Signaling/Smoke-Alarms-in-US-Home-Fires, indicate the reason for smoke alarm failures and subsequent injuries and deaths in fires are most related to the failure to replace a battery for battery only smoke alarms, the failure of the replacement back-up battery for 120vac models when power failures occur and the removal of batteries for other purposes.

The 10yr battery powered smoke alarm removes these failure mode potentials, so is more reliable and is likely to save lives.

NFPA 72 has permitted 10-yr battery only smoke alarms for more than a decade and our Work Group has been directed by the FCAC to align the I-Codes with NFPA 72 to the extent possible.

2. Cost impact - The retail price differential between a traditional smoke alarm (120vac powered with a 9vac battery backup) and 10-yr smoke alarms is about $13 ($35 for the former and $22 for the latter based on retail prices at Home Depot October 2018).

Given the number of commercial occupancies involved (hotels, apartments, condominiums, dormitories, board and care facilities, assistive living facilities and time-shares) the number of smoke alarms to be replaced in the near-term (2019-2022), as the 2018 IFC is adopted state-by-state, is estimated at more than 200 million based on the ten-year age replacement obligation and in such occupancies’ sleeping accommodations where only one smoke alarm is required. The cost savings to those owner/operators is thus estimated at $2.6 billion, if 10-yr smoke alarms technology could replace traditional 120vac/9vac powered smoke alarms.

Bibliography: NFPA 72 -2019 and manufacturer's literature noted.

Cost Impact: The code change proposal will decrease the cost of construction
The proposed code change would decrease the cost of operations for occupancies utilizing single station smoke alarms.
IEBC: 803.2.2, 803.2.2.2 (New)

Proponent: John Williams, representing Healthcare Committee (AHC@iccsafe.org)

2018 International Existing Building Code

Revise as follows:

803.2.2 Groups A, B, E, F-1, H, I-1, I-3, I-4, M, R-1, R-2, R-4, S-1 and S-2. In buildings with occupancies in Groups A, B, E, F-1, H, I-1, I-3, I-4, M, R-1, R-2, R-4, S-1 and S-2, work areas that have exits or corridors shared by more than one tenant or that have exits or corridors serving an occupant load greater than 30 shall be provided with automatic sprinkler protection where both of the following conditions occur:

1. The work area is required to be provided with automatic sprinkler protection in accordance with the International Building Code as applicable to new construction.
2. The work area exceeds 50 percent of the floor area.

Exception: If the building does not have sufficient municipal water supply for design of a fire sprinkler system available to the floor without installation of a new fire pump, work areas shall be protected by an automatic smoke detection system throughout all occupiable spaces other than sleeping units or individual dwelling units that activates the occupant notification system in accordance with Sections 907.4, 907.5 and 907.6 of the International Building Code.

803.2.2.1 Mixed uses. In work areas containing mixed uses, one or more of which requires automatic sprinkler protection in accordance with Section 803.2.2, such protection shall not be required throughout the work area provided that the uses requiring such protection are separated from those not requiring protection by fire-resistance-rated construction having a minimum 2-hour rating for Group H and a minimum 1-hour rating for all other occupancy groups.

Add new text as follows:

803.2.2.2 Group I-2. In Group I-2 occupancies, an automatic sprinkler system installed in accordance with Section 903.3.1.1 of the International Fire Code shall be provided in the following:

1. In Group I-2, Condition 1, throughout the work area.
2. In Group I-2, Condition 2, throughout the work area where the work area is 50 percent or less of the smoke compartment.
3. In Group I-2, Condition 2, throughout the smoke compartment in which the work occurs where the work area exceeds 50 percent of the smoke compartment.

Reason: This change provides a method for determining where sprinklers are required for group I-2 facilities undergoing at least a level 2 alteration. While the IFC already requires fire areas containing Group I-2 to be sprinklered, this change provides a mechanism and encouragement for those facilities coming up to this standard. This language is also consistent with the approach taken by the federal reimbursement agency. This proposal is submitted by the ICC Committee on Healthcare (CHC). The CHC was established by the ICC Board to evaluate and assess contemporary code issues relating to healthcare facilities. This is a joint effort between ICC and the American Society for Healthcare Engineering (ASH), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. In 2017 and 2018 the CHC held 4 open meetings and numerous conference calls, which included members of the committees as well as any interested parties, to discuss and debate the proposed changes. Information on the CHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CHC effort can be downloaded from the CHC website at: https://www.iccsafe.org/codes-tech-support/cs/icc-committee-on-healthcare/.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This allows for sprinklers to be added over time, instead of a complete building. This is already required by federal reimbursement requirements.
Proponent: Kevin Duerr-Clark, New York State Department of State, representing New York State Department of State (kevin.duerr-clark@dos.ny.gov); John Addario, New York State Department of State - Building Standards & Codes, representing New York State Department of State (john.addario@dos.ny.gov)

2018 International Existing Building Code
Revise as follows:

803.2.2 Groups A, B, E, F-1, H, I, M, R-1, R-2, R-4, S-1 and S-2. In buildings with occupancies in Groups A, B, E, F-1, H, I, M, R-1, R-2, R-4, S-1 and S-2, work areas that have exits or corridors shared by more than one tenant or that have exits or corridors serving an occupant load greater than 30 shall be provided with automatic sprinkler protection where both of the following conditions occur:

1. The work area is required to be provided with automatic sprinkler protection in accordance with the International Building Code as applicable to new construction.
2. The work area exceeds 50 percent of the floor area.

Exception: If the building does not have a sufficient municipal water supply, have an existing municipal water supply present at the floor of the proposed work area, with sufficient pressure and flow for the design of a fire sprinkler system available to the floor without, and without installation of a new fire pump, work service piping, or vertical piping, the work areas shall be protected by an automatic smoke detection system throughout all occupiable spaces other than sleeping units or individual dwelling units that activates the occupant notification system in accordance with Sections 907.4, 907.5 and 907.6 of the International Building Code.

Reason: There is some confusion surrounding the language of the exception to this section. Some interpret that “sufficient municipal supply available to the floor” means a water main is in the ROW with adequate pressures and flow, and available to tap into with new piping to the building and work area. As supported by the ICC IEBC Interpretation No. 12-04 (see attached), it was never intended for a new water service pipe or vertical/riser pipes to be installed as a requirement for “sufficient municipal supply” to satisfy this code section. The newly proposed language makes it clear that the existing sufficient municipal supply is to exist and be available to the floor where the work area is located without the installation of new service piping, fire pump, or vertical piping.

Commentary to this code section states “One exception to these requirements states that if the building does not have a sufficient municipal water supply for a sprinkler system at the floor where the work area is located, then sprinklers are not required; however, that same exception does require an automatic smoke detection system throughout the work area. The smoke detection coverage is required throughout all occupiable spaces other than areas already required to install smoke alarms.” While useful in understanding this code section, in many cases the Commentary is not available or enforceable. This proposal brings the stated intend of in the Commentary into the actual Code language.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

This is simply a clarification of the language as already interpreted by ICC and the commentary, so no change in the construction cost is anticipated.
2018 International Existing Building Code

Add new text as follows:

803.2.4 Other required automatic sprinkler systems In buildings and areas listed in Table 903.2.11.6 of the International Building Code, work areas that have exits or corridors shared by more than one tenant or that have exits or corridors serving an occupant load greater than 30 shall be provided with an automatic sprinkler system under the following conditions:

1. The work area is required to be provided with an automatic sprinkler system in accordance with the International Building Code applicable to new construction; and
2. The building has sufficient municipal water supply for design of an automatic sprinkler system available to the floor without installation of a new fire pump.

904.1.4 Groups A, B, E, F-1, H, I, M, R-1, R-2, R-4, S-1 and S-2 In buildings with occupancies in Groups A, B, E, F-1, H, I, M, R-1, R-2, R-4, S-1, and S-2 work areas shall be provided with automatic sprinkler protection where all of the following conditions occur:

1. The work area is required to be provided with automatic sprinkler protection in accordance with the International Building Code as applicable to new construction; and
2. The building site has sufficient municipal water supply for design and installation of an automatic sprinkler system.

904.1.5 Windowless stories Work located in a windowless story, as determined in accordance with the International Building Code, shall be sprinklered where the work area is required to be sprinklered under the provisions of the International Building Code for newly constructed buildings and the building site has a sufficient municipal water supply for the design and installation of an automatic sprinkler system.

Revise as follows:

904.1.6 Other required automatic sprinkler systems. In buildings and areas listed in Table 903.2.11.6 of the International Building Code, work areas that have exits or corridors shared by more than one tenant or that have exits or corridors serving an occupant load greater than 30 shall be provided with an automatic sprinkler system under the following conditions:

1. The work area is required to be provided with an automatic sprinkler system in accordance with the International Building Code applicable to new construction.
2. The building site has sufficient municipal water supply for design and installation of an automatic sprinkler system.

Reason: This proposal backfills Section 803.2.4 to Chapter 8 to fill the void that was unintentionally created in the 2018 cycle (Proposal EB61). Without this change, other areas that require fire protection in the IBC will be missed in Level 2 Alterations. The two new 904 sections (904.1.4 and 904.1.5) correlate with the new threshold of Level 3 alterations created by (Proposal EB61) 2018 IEBC Section 904.1.4.

The changes to Section 904 fill a void for increased fire protection for Level 3 alterations. The IEBC committee considered three proposals EB59, EB60 and EB61 during the 2018 development cycle. All three lowered the Level 2 threshold from a new fire pump to available water on the site. The membership and committee discussion favored these three proposals but to a Level 3, leaving Level 2 as is. The committee successfully made a modification to move EB61 to Level 3 but was unable to reconsider EB59 & EB60. During the PCH, public comments to correct EB59 & EB60 failed to receive the 2/3 majority to complete the correlation.

Cost Impact: The code change proposal will increase the cost of construction
Level 3 alterations will have an increase of initial fire protection cost, however, there are other cost-neutral or cost-reducing measures fire protection systems provide in the model codes and community risk reduction.
EB84-19

IEBC®: 803.4.1, 803.4.1.1 (New), 803.4.1.2 (New)

Proponent: Dan Finnegan, Siemens, representing Self (daniel.finnegan@siemens.com)

2018 International Existing Building Code

Revise as follows:

803.4.1 Occupancy requirements. A fire alarm system shall be installed in accordance with Sections 803.4.1.1 through 803.4.1.6. Existing alarm-notification appliances shall be automatically activated throughout the building. Where the building is not equipped with a fire alarm system, alarm-notification appliances within the work area shall be provided and automatically activated.

   Exceptions:

   1. Occupancies with an existing, previously approved fire alarm system.
   2. Where selective notification is permitted, alarm-notification appliances shall be automatically activated in the areas selected.

Add new text as follows:

803.4.1.1 Fire alarm control unit. Where the building is not equipped with a fire alarm system, the following shall apply:

   1. A building fire alarm control unit/system shall be provided with an annunciator installed at an approved location
   2. All fire alarm system requirements in Work Areas in the building shall be connected into the building fire alarm control unit/system

803.4.1.2 Initiating and notification devices. Where the building is equipped with a fire alarm system, all fire alarm system initiating, and notification devices required in the work area shall be connected into the existing fire alarm control unit/system.

Reason: An existing building without a fire alarm system, when following the existing language will have multiple fire alarm panels scattered throughout the building, based on the fire alarm system/panel being installed only for that Work Area. This code change will require a “building” fire alarm panel be installed with the first Work Area. From that point on all additional work will be tied into the building fire alarm panel. This will be more cost effective over time, and provide the minimum level of life safety for the building occupants and first responders.

Cost Impact: The code change proposal will increase the cost of construction
The initial cost of the fire panel will be borne by the first tenant/work area/owner. This will depend on the size of the building. Could be a 5 to 10K cost impact.

Proposal # 4807
**EB85-19**

IEBC®: 803.4.1.1 (New)

**Proponent:** Dan Finnegan, Siemens, representing Self (daniel.finnegan@siemens.com)

**2018 International Existing Building Code**

Add new text as follows:

**803.4.1.1 Extent of installation.** Audible/visual notification appliances shall be provided in accordance with this code for the work area and the entire common area of the floor or fire area, and shall be connected to the building fire alarm control unit/system.

**Reason:** In addition for the need for a fire alarm control unit as addressed in the first IEBC alarm proposal this will require that the common areas of the entire floor or fire area be provided with notification appliances so when a fire is detected the occupants will receive a level of notification.

**Cost Impact:** The code change proposal will increase the cost of construction. Will depend on the number of notification devices and the size of the floor area. Estimate about 390.00 per device installed.

Proposal # 4808
EB86-19

IEBC®: 803.4.1.2 (New), 803.4.1.3 (New)

Proponent: John Williams, representing Healthcare Committee (AHC@iccsafe.org)

2018 International Existing Building Code

Revise as follows:

803.4.1.2 Group I-1. An automatic fire alarm system shall be installed in work areas of Group I-1 residential care/assisted living facilities as required by Chapter 11 of the International Fire Code for existing Group I-1 occupancies.

803.4.1.3 Group I-2. An automatic fire alarm system shall be installed throughout Group I-2 occupancies as required by Chapter 11 of the International Fire Code.

Reason: This is coordination with the requirements in the International Fire Code for existing buildings. The term "residential care/assisted living" is no longer used in the code. Leaving it in this section is confusing.

This proposal is submitted by the ICC Committee on Healthcare (CHC). The CHC was established by the ICC Board to evaluate and assess contemporary code issues relating to 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. In 2017 and 2018 the CHC held 4 open meetings and numerous conference calls, which included members of the committees as well as any interested parties, to discuss and debate the proposed changes. Information on the CHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CHC effort can be downloaded from the CHC website at: https://www.iccsafe.org/codes-tech-support/cs/icc-committee-on-healthcare/.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This is consistent with requirements already in IFC.
EB87-19
IEBC®: 805.3.1.1, TABLE 805.3.1.1(1), 1301.6.17, 1301.6.17.1

Proponent: Jeffrey Hugo, National Fire Sprinkler Association, representing National Fire Sprinkler Association (hugo@nfsa.org)

2018 International Existing Building Code

Revise as follows:

805.3.1.1 Single-exit buildings. A single exit or access to a single exit shall be permitted from spaces, any story or any occupied roof where one of the following conditions exists:

1. The occupant load, number of dwelling units and exit access travel distance do not exceed the values in Table 805.3.1.1(1) or 805.3.1.1(2).

2. In Group R-1 or R-2, nonsprinklered buildings without an approved automatic sprinkler system, individual single-story or multiple-story dwelling or sleeping units shall be permitted to have a single exit or access to a single exit from the dwelling or sleeping unit provided one of the following criteria are met:
   2.1. The occupant load is not greater than 10 and the exit access travel distance within the unit does not exceed 75 feet (22 860 mm).
   2.2. The building is not more than three stories in height; all third-story space is part of dwelling with an exit access doorway on the second story; and the portion of the exit access travel distance from the door to any habitable room within any such unit to the unit entrance doors does not exceed 50 feet (15 240 mm).

3. In buildings of Group R-2 occupancy of any number of stories with not more than four dwelling units per floor served by an interior exit stairway, with a smokeproof enclosure in accordance with Sections 909.20 and 1023.11 of the International Building Code or an exterior stairway as an exit, and where the portion of the exit access travel distance from the dwelling unit entrance door to the exit is not greater than 20 feet (6096 mm).

<table>
<thead>
<tr>
<th>STORY</th>
<th>OCCUPANCY</th>
<th>MAXIMUM NUMBER OF DWELLING UNITS</th>
<th>MAXIMUM EXIT ACCESS TRAVEL DISTANCE (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basement, first or second story above grade plane</td>
<td>R-2a</td>
<td>4 dwelling units</td>
<td>50</td>
</tr>
<tr>
<td>Third story above grade plane and higher</td>
<td>NP</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

For SI: 1 foot = 304.8 mm.

NP = Not Permitted.

NA = Not Applicable.

a. Group R-2, nonsprinklered without an approved automatic sprinkler system and provided with emergency escape and rescue openings in accordance with Section 1030 of the International Building Code.

1301.6.17 Automatic sprinklers. Evaluate the ability to suppress or control a fire based on the installation of an automatic sprinkler system in accordance with Section 803.3.1 of the International Building Code. “Required sprinklers” shall be based on the requirements of this code, the International Building Code. Under the categories and occupancies in Table 1301.6.17, determine the appropriate value and enter that value into Table 1301.6.17. Automatic Sprinklers, for fire safety, means of egress divided by 2, and general safety. High-rise buildings defined in Chapter 2 of the International Building Code that undergo a change of occupancy to Group R shall be equipped throughout with an automatic sprinkler system in accordance with Section 403 of the International Building Code and Chapter 9 of the International Building Code. Facilities in Group I-2 occupancies meeting Category a, b, c or f shall be considered to fail the evaluation.

1301.6.17.1 Categories. The categories for automatic sprinkler system protection are:

1. Category a—Sprinklers are a. An approved automatic sprinkler system is required throughout; an approved automatic sprinkler system is not provided.

2. Category b—An approved automatic sprinkler system is required in a fire area or compartment; an approved automatic sprinkler system is not provided; sprinkler protection is not provided or the sprinkler system design is not adequate for the hazard protected in accordance with Section 903 of the International Building Code. Category b—Sprinklers are required in a portion of the building; sprinkler protection is not provided or the sprinkler system design is not adequate for the hazard protected in accordance with Section 903, Chapter 9 of the International Building Code.
3. Category e—Sprinklers are c—An approved automatic sprinkler system is not required; none are provided.

4. Category d—Sprinklers are d—An approved automatic sprinkler system is required in a portion of the building; sprinklers are provided in such portion; the system is one that complied with the code at the time of installation and is maintained and supervised in accordance with Section 903—fire area or compartment; an approved automatic sprinkler system is provided in a fire area or compartment in accordance with Chapter 9 of the International Building Code.

5. Category e—Sprinklers are e—An approved automatic sprinkler system is required throughout; sprinklers are an approved automatic sprinkler system is provided throughout in accordance with Chapter 9 of the International Building Code.

6. Category f—Sprinklers are f—An approved automatic sprinkler system is not required throughout; sprinklers are an approved automatic sprinkler system is provided throughout in accordance with Chapter 9 of the International Building Code.

Reason: IEBC 805.3.1.1:
An "unsprinklered" building is not defined and is a subjective term. This proposal uses terms that are defined and correlate to the other ICC codes.

IEBC 1301.6.17:
These changes swap the term "sprinklers" with the defined terms of "approved" and "automatic sprinkler system" to correlate to the other ICC codes. Below are specific reasons for each text change:

"...or control..." This change correctly addresses automatic fire sprinkler systems for the majority of installations. Fire sprinkler systems designed according to NFPA 13, NFPA 13R and NFPA 13D are designed to control fires. There are a few instances where the fire sprinkler is designed to suppress fires, such as in storage occupancies. It is appropriate to have "control" more than suppression in the code text, but this proposal leaves suppression in to accommodate the suppression in storage occupancies. "..."

"...Section 903.3.1.1..."This change removes the limitation of the values to be used just on a NFPA 13 system. The values cannot be limited to just NFPA 13 systems. The intent of the proposal that expanded the values for 1996 BOCA did not prohibit NFPA 13R systems (B213-95), likewise, the values table has occupancies that are permitted to use NFPA 13R (R-1, R-2) and NFPA 13D (R-3, R-4)systems. When a building is sprinklered according to any of the sprinkler standards, they are considered fully sprinklered.

"...the International Building Code..." When this section was located in the IBC it also stated "this code". This section wasn't revised when it moved from the IBC to the IEBC. Every other section in Chapter 14 of the IEBC that has similar language refers to the IBC. For example, IEBC Section 1401.6.18 refers the requirements back to the IBC. this code..."

" Category a" This change updates and clarifies where sprinklers are throughout to make the user aware of the extent of sprinklers protection. The latter portion of the text is removed. The value assigned to this is extreme and is redundant with Category b. Having no sprinklers and an under-designed system is not equal. Both are detrimental, but one has no protection, the other has some form of protection. The penalty for an under-designed system should a Category b and keep the unsprinklered building as the highest penalty.

"Category b" This change provides a negative value when a fire area or compartment that is required to have sprinklers, but doesn't. Fire areas are defined in the IBC and "compartments" are used and qualified in Section 1301.6.3. These terms are concrete and have definite passive fire protection boundaries than the subjective term "portion". By using fire area and compartments, the code official and the user can be clear where sprinklers are supposed to be installed. There are some occupancies, such as A-1, A-2, A-3 and A-4, that are only required to have sprinklers in the fire area. Other fire areas may not need fire sprinklers. This change would provide buildings with sprinklered fire areas some credit. The value would not apply to a partial systems for incidental uses or other partial or limited-area system installation. The value would only be applied when the fire areas that are supposed to have sprinklers are installed according to the appropriate standard, or when the compartment is sprinklered.

"Category d" This change assigns the partial system for a fire area with a value. It also removes the undefined term "portion". Fire areas are defined in the IBC and "compartments" are used and qualified in Section 1301.6.3. These terms are concrete and have definite passive fire protection boundaries than the subjective term "portion" which will have differing boundaries by every user for every building that is evaluated. By using fire area and compartments, the code official and the user can be clear where sprinklers are supposed to be installed. This proposal also removes the value that is assigned for the maintenance of the system according to the edition of the standard when it was installed. The IBC and IFC along with NFPA 13 require the sprinkler system to be maintained according to NFPA 25. This may not have been clear when the proposal was drafted for the 1996 BOCA. NFPA 25 was a new standard in 1992 and while it was referenced by the BOCA Fire Prevention Code, the scope may not have been fully understood and enforcement was difficult if the BOCA Fire Prevention Code was not specifically adopted.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
No cost impact, correlative change.
Proponent: John Williams, representing Healthcare Committee (AHC@iccsafe.org)

2018 International Existing Building Code
Revise as follows:

805.4.1.2 Group I-2. In buildings of Group I-2 occupancy, any patient sleeping room or suite of patient rooms greater than 1,000 square feet (93 m²) within the work area shall have not fewer than two egress doorways. Condition 2, work areas that include altered care suites shall comply with Sections 407.4.4 through 407.4.4.6.2 of the International Building Code.

Reason: The existing language of this paragraph only references patient sleeping rooms. It is important to define the limit of a suite requiring two exits beyond the sleeping rooms, because hospitals also utilize suites that do not sleep patients, but are used for treatment. This proposal captures the 2,500 square-foot limit already established by the federal standard. This change is limited to I-2, Condition 2 (hospitals) because suites are not widely used in the nursing home or post-acute care setting.

IFC 1105.8 Group I-2 care suites. Care suites in existing Group I-2, Condition 2 occupancies shall comply with Sections 407.4.4 through 407.4.4.6.2 of the International Building Code.

This proposal is submitted by the ICC Committee on Healthcare (CHC). The CHC was established by the ICC Board to evaluate and assess contemporary code issues relating to 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. In 2017 and 2018 the CHC held 4 open meetings and numerous conference calls, which included members of the committees as well as any interested parties, to discuss and debate the proposed changes. Information on the CHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CHC effort can be downloaded from the CHC website at: https://www.iccsafe.org/codes-tech-support/cs/icc-committee-on-healthcare/.

Cost Impact: The code change proposal will not increase or decrease the cost of construction Group I-2, Condition occupancies already conform to this requirement.

Proposal # 4244
2018 International Existing Building Code

Revise as follows:

805.4.4 Panic and fire exit hardware. In any work area, and in the egress path from any work area to the exit discharge, in buildings or portions thereof of Group A assembly occupancies with an occupant load greater than 100, all required exit doors equipped with latching devices shall be equipped with approved panic hardware, or fire exit hardware in accordance with Section 1010.1.10 of the International Building Code.

Reason: Fire exit hardware should be included as an approved option in these requirements for those installations where the hardware is used on a fire door. Both panic hardware and fire exit hardware are life safety devices, and should be installed in accordance with the requirements in Chapter 10 of the IBC.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. There are numerous panic and fire exit hardware that already comply with Section 1010.1.10, so when these are used there will be no increase in costs.
EB90-19
IEBC®: 805.5.3

Proponent: Allison Cook, representing VBCOA; Ronald Clements Jr, representing Chesterfield County (clementsro@chesterfield.gov); Kenney Payne, Moseley Architects, representing AIA Virginia (kpayne@moseleyarchitects.com); Charles Vernon, representing VBCOA (cvernnon@arlingtonva.us); Debra McMahon (debra.mcmahon@fairfaxcounty.gov); Michael Williams (mike.williams@harrisonburgva.gov); Christina Jackson, representing City of Norfolk / WICED of VA (christina.reynolds@norfolk.gov)

2018 International Existing Building Code
Revise as follows:

805.5.3 Other corridor openings. In any work area, unless otherwise protected or fire-resistant rated in accordance with Section 716 of the IBC, any other sash, grille, or opening in a corridor and any window in a corridor not opening to the outside air shall be sealed with materials consistent with the corridor construction.

Reason: As currently written, the provision states that any other corridor opening shall be sealed. This is regardless of the level of protection that might already exist. So, an otherwise code-compliant opening or window would still need to be sealed. Sealing should only be required when such protection or rating is not already provided in accordance with the IBC.

Cost Impact: The code change proposal will decrease the cost of construction. This proposal could result in cost decrease by eliminating unnecessary sealing of otherwise compliant openings.

Proposal # 5554
EB91-19
IEBC®: 805.6 (New)

Proponent: John Williams, representing Healthcare Committee (AHC@iccsafe.org)

2018 International Existing Building Code
Revise as follows:

805.6 Dead-end corridors. Dead-end corridors in any work area shall not exceed 35 feet (10 670 mm). In Group I-2 occupancies, dead-end corridors shall not exceed 30 feet (9144 mm).

Exceptions:

1. Where dead-end corridors of greater length are permitted by the International Building Code.
2. In other than Group A, I-2 and H occupancies, the maximum length of an existing dead-end corridor shall be 50 feet (15 240 mm) in buildings equipped throughout with an automatic fire alarm system installed in accordance with the International Building Code.
3. In other than Group A, I-2 and H occupancies, the maximum length of an existing dead-end corridor shall be 70 feet (21 356 mm) in buildings equipped throughout with an automatic sprinkler system installed in accordance with the International Building Code.
4. In other than Group A, I-2 and H occupancies, the maximum length of an existing, newly constructed, or extended dead-end corridor shall not exceed 50 feet (15 240 mm) on floors equipped with an automatic sprinkler system installed in accordance with the International Building Code.

Reason: For I-2 occupancies, a 30 foot corridor is required by the federal standard. If the subject corridor is within the work area of Level 2 construction, it is appropriate for work to be done to modify it to conform with that standard. This is consistent with what is currently permitted under IFC 1105.6.5.

IFC 1105.6.5 Dead-end corridors. In smoke compartments containing patient sleeping rooms and treatment rooms, dead-end corridors shall not exceed 30 feet (9144 mm) unless approved by the fire code official.

This proposal is submitted by the ICC Committee on Healthcare (CHC). The CHC was established by the ICC Board to evaluate and assess contemporary code issues relating to 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. In 2017 and 2018 the CHC held 4 open meetings and numerous conference calls, which included members of the committees as well as any interested parties, to discuss and debate the proposed changes. Information on the CHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CHC effort can be downloaded from the CHC website at: https://www.iccsafe.org/codes-tech-support/cs/icc-committee-on-healthcare/.

Cost Impact: The code change proposal will increase the cost of construction
This code change will add construction cost, because additional modification to the corridor would be required to reduce the dead end from 35 to 30 feet.
2018 International Existing Building Code

Delete without substitution:

SECTION 809-PLUMBING

809.1 Minimum fixtures. Where the occupant load of the story is increased by more than 20 percent, plumbing fixtures for the story shall be provided in quantities specified in the International Plumbing Code based on the increased occupant load.

Revise as follows:

1009.1 Increased demand. Where the occupancy of an existing building or part of an existing building is changed such that the new occupancy is subject to increased or different plumbing fixture requirements or to increased water supply requirements in accordance with the International Plumbing Code, the new occupancy shall comply with the intent of the respective International Plumbing Code provisions.

Exception: Only where the occupant load of the story is increased by more than 20 percent, plumbing fixtures for the story shall be provided in quantities specified in the International Plumbing Code based on the increased occupant load.

Reason: The change of occupancy definition includes "Change of occupancy includes the language "any change in use within a group for which there is a change in the application of the requirements of this code" So, an increase in occupant load of 20% is a change of occupancy. This does not belong in a level 2 alteration. Relocating this code section as an exception under the change of occupancy reduces confusion about what is or is not a change of occupancy. It also eliminates the conflict between section 809.1 (which essentially says you can increase occupant load without adding fixtures) and section 1009.1 (which says requires tenants to add fixtures if the IPC requires a greater fixture quantity or different type)

Cost Impact: The code change proposal will decrease the cost of construction
Applying this section to all change of occupancy will reduce the requirement to add plumbing fixtures to existing tenant spaces.
2018 International Existing Building Code

**904.2 Fire alarm and detection systems.** Fire alarm and detection shall be provided in accordance with Section 907 of the International Building Code as required for new construction.

**904.2.1 Manual fire alarm systems.** Where required by the International Building Code, a manual fire alarm system shall be provided throughout the work area. Alarm notification appliances shall be provided on such floors and shall be automatically activated as required by the International Building Code.

**Exceptions:**

1. Alarm-initiating and notification appliances shall not be required to be installed in tenant spaces outside of the work area.
2. Visual alarm notification appliances are not required, except where an existing alarm system is upgraded or replaced or where a new fire alarm system is installed.

**904.2.2 Automatic fire detection.** Where required by the International Building Code for new buildings, automatic fire detection systems shall be provided throughout the work area.

**Reason:** This proposal follows the life safety concept in the other IEBC alarm proposal that requires installation of audible and visual notification appliances beyond the work area for level 2 alterations. When a work area is on a floor, the exception will state only alarm initiating devices are not needed outside the space of the work area. It will require the notification appliances to be installed outside the work area to provide proper notification to occupants at risk when an alarm initiating device has been activated.

**Cost Impact:** The code change proposal will increase the cost of construction. Will depend on the number of notification devices and the size of the floor area. Estimate about $390.00 per device installed.
EB94-19
IEBC: 905.4 (New), 503.17 (New)

Proponent: Dawn Anderson, representing self (gonedawning@yahoo.com); Gene Boecker, representing Code Consultants, Inc. (geneb@codeconsultants.com); Dan Buuck, representing National Association of Home Builders (dbuuck@nahb.org); David Collins, representing the American Institute of Architects (dcollins@preview-group.com); Marsha Mazz, representing United Spinal Association (m.mazz@verizon.net)

2018 International Existing Building Code

SECTION 905
MEANS OF EGRESS

905.1 General. The means of egress shall comply with the requirements of Section 805 except as specifically required in Sections 905.2 and 905.3.

905.2 Means-of-egress lighting. Means of egress from the highest work area floor to the floor of exit discharge shall be provided with artificial lighting within the exit enclosure in accordance with the requirements of the International Building Code.

905.3 Exit signs. Means of egress from the highest work area floor to the floor of exit discharge shall be provided with exit signs in accordance with the requirements of the International Building Code.

Add new text as follows:

905.4 Two-way communications systems. In buildings with elevator service, a two way communication systems shall be provided in accordance with Section 1009.8 of the International Building Code.

SECTION 503
ALTERATIONS

503.17 Two-way communications systems. Where the work area for alterations exceeds 50 percent of the building area and the building has elevator service, a two way communication systems shall be provided in accordance with Section 1009.8 of the International Building Code.

Reason: The addition of Sections 503.7 and 905.4 would allow for a person who could not use the stairways for evacuation to at least have a way to contact emergency responders. Since this is only alteration of Level 3 or exceeds 50% of the building area, this would have minimal impact on the construction and would be a big boost for persons who needed assistance in evacuation and the fire department.

Cost Impact: The code change proposal will increase the cost of construction
A two way communication system may need to be added in older multi-story buildings that were undergoing Level 3 alterations.
Proponent: Ed Kulik, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2018 International Existing Building Code

Add new text as follows:

**SECTION 908**

**EMERGENCY RESPONDER RADIO COVERAGE**

**908.1** Emergency responder radio coverage in existing buildings. Where existing buildings do not have an approved emergency responder radio coverage in the building based on existing coverage levels of the public safety communication systems, an approved emergency responder radio coverage system shall be installed within the building in compliance with Section 510 of the International Fire Code.

**SECTION 1010**

**OTHER REQUIREMENTS**

**1010.1** Light and ventilation. Light and ventilation shall comply with the requirements of the International Building Code for the new occupancy.

Add new text as follows:

**1010.2** Emergency responder radio coverage in existing buildings. Where an existing building undergoes a complete change of occupancy, and the building does not have an approved emergency responder radio coverage based on existing coverage levels of the public safety communication systems, an approved emergency responder radio coverage system shall be installed within the building in compliance with Section 510 of the International Fire Code. The system shall be installed within the time frame established by the code official.

Reason: For jurisdictions that do not adopt the Chapter 11 (retroactive) requirements of the IFC for Emergency Responder Radio Coverage, this proposal would add triggers to the IEBC that would require all existing buildings that undergo a Level 3 alteration or Change of Occupancy to have approved radio coverage. Providing these two triggers for Emergency Responder Radio Coverage provides a reasonable opportunity to install equipment and systems that ensure the safety of emergency responders that depend on reliable communication for their safety. We are not asking for this in a building undergoing a partial change of occupancy with a Level 1 or 2 alteration because that could be only one tenant in a very large multi-tenant building. IFC Section 510 includes all the requirements for the design and installation. Allowing for a time frame for installation in a COO is consistent with IFC Section 1103.2. This proposal will correlate consistency between the IFC and the IEBC as it relates to the requirements for emergency responder radio coverage in existing buildings.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. Since 2017 the BCAC has held 6 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: https://www.iccsafe.org/codes-tech-support/codes/codedevelopment-process/building-code-actioncommittee-bcac.

Cost Impact: The code change proposal will increase the cost of construction For the safety of emergency responders, a system may need to be added in some of the larger buildings.
2018 International Existing Building Code

Revise as follows:

1002.1 Compliance with the building code. Where the character or use of an existing building or part of an existing building undergoes a change of occupancy to one of the following special use or occupancy categories as defined described in Chapter 4 in the International Building Code, the building shall comply with all of the applicable requirements of Chapter 4 of the International Building Code applicable to the special use or occupancy:

1. Covered and open mall buildings.
2. Atriums.
3. Motor vehicle-related occupancies.
4. Aircraft-related occupancies.
5. Motion picture projection rooms.
6. Stages and platforms.
7. Special amusement buildings.
8. Incidental use areas.
10. Ambulatory care facilities.

1002.2 Underground buildings, Incidental uses. An underground building in which there is a change of occupancy to one of the incidental uses listed in Table 509 of the International Building Code, the incidental use shall comply with the requirements of Section 509 of the International Building Code applicable to underground structures, the incidental use.

Reason: 1002.1: The special use and occupancy section listed some of the special uses addressed in IBC chapter 4 but not all. The commentary suggest that the specific list is for special uses that would not constitute a change in classification and are necessary because a change in occupancy without a change in classification would not invoke the chapter 4 requirements. The current definition of change of occupancy includes a change in use where there is a change in application of code regardless of whether there is a classification change; therefore, the list is no longer necessary. As currently written, regardless of whether there is a change of classification is involved in a change of occupancy, special use provisions in IBC chapter 4 would not be applicable to any special uses that are not in the list in IEBC chapter 10. This change simplifies the requirement and brings in all of the potential special use hazards that should be mitigated in a change of occupancy involving one of the special uses.

1002.2: Underground structures are a special use per IBC chapter 4 so the change proposed for 1002.1 covers underground buildings. Incidental uses are not special uses addressed by IBC chapter 4 so listing incidental uses in 1002.1 was out of place and will be lost with the proposed amendment to 1002.1; therefore, 1002.2 is proposed to capture the incidental use requirement.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

The code change proposal will not increase or decrease the cost of construction since the commentary suggested that all of IBC Chapter 4 was already applicable.
Proponent: John Williams, representing Healthcare Committee (AHC@iccsafe.org)

2018 International Existing Building Code
Revise as follows:

1002.1 Compliance with the building code. Where the character or use of an existing building or part of an existing building is changed to one of the following special use or occupancy categories as defined in the International Building Code, the building shall comply with all of the applicable requirements of the International Building Code:

1. Covered and open mall buildings.
2. Atriums.
3. Motor vehicle-related occupancies.
4. Aircraft-related occupancies.
5. Motion picture projection rooms.
6. Stages and platforms.
7. Special amusement buildings.
8. Incidental use areas.
10. Ambulatory care facilities.

Add new text as follows:

1011.1.4 Change of occupancy in Healthcare. Where a change of occupancy occurs to a Group I-2 or I-1 facility, the work area with the change of occupancy shall comply with the International Building Code.

Exception: A change in use or occupancy in the following cases shall not be required to meet the International Building Code:

1. Group I-2 Condition 2 to Group I-2 Condition 1
2. Group I-2 to ambulatory healthcare.
3. Group I-2 to Group I-1
4. Group I-1 Condition 2 to a Group I-1 Condition 1

Reason: The most obvious effect of this proposal is to move the discussion regarding Group I-2 occupancies to its own section. This is needed because we are proposing a few exceptions that would only apply to this occupancy class. This proposal also accomplishes two technical changes:

1. It identifies that building converting to a Group I-1 occupancies need careful consideration. There are some special requirements for that occupancy that should be applied during a change of occupancy. For example, group I-1 condition 2 facilities are required to have smoke compartments. Current language would not trigger this requirement. Specifically, the special requirements include Chapter 4 (smoke compartmentation, fire partitions), chapter 9 (sprinkler requirements), and chapter 10 (limitations on the means of egress systems). Due to the special character and risk in Group I-1, we believe these building code provisions should be applied at any change of occupancy.

2. This change also creates a few exceptions to the application of new building code requirements. The current federal requirements allow the “downgrade” of medical facilities from a more intensive to less intensive use. In effect, this encourages older hospitals to become nursing homes and ambulatory surgery facilities; older nursing homes to become assisted living facilities; etc.

This proposal is submitted by the ICC Committee on Healthcare (CHC). The CHC was established by the ICC Board to evaluate and assess contemporary code issues relating to 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. In 2017 and 2018 the CHC held 4 open meetings and numerous conference calls, which included members of the committees as well as any interested parties, to discuss and debate the proposed changes. Information on the CHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CHC effort can be downloaded from the CHC website at: https://www.iccsafe.org/codes-tech-support/cs/icc-committee-on-healthcare/.

Cost Impact: The code change proposal will not increase or decrease the cost of construction.

The addition of Group I-1 would increase the cost of construction. The exceptions for Group I-2 would reduce the cost of construction.
Proponent: John Williams, representing Healthcare Committee (AHC@iccsafe.org)

2018 International Existing Building Code
Add new text as follows:

1002.2 Storage. In Group I-2 occupancies, equipped throughout with an automatic sprinklered in accordance with Section 903.3.1.1, where a room 250 ft ($23.2$ m) or less undergoes a change in occupancy to a storage room, the room shall be separated from the remainder of the building by construction capable of resisting the passage of smoke in accordance with Section 509.4.2 of the International Building Code.

Reason: In buildings of Group I-2, the IBC requires 1 hr separation for such storage rooms for new construction, the IFC only requires construction capable of resisting the passage of smoke when the storage room is protected with an automatic sprinkler system. With the presence of automatic sprinkler protection, the disruption associated with replacing the walls with one-hour fire barriers is not necessary for an act that occurs quite frequently (converting spaces to/from storage spaces quite frequently).

Standard language about correlation with CMS requirements.

This proposal is submitted by the ICC Committee on Healthcare (CHC). The CHC was established by the ICC Board to evaluate and assess contemporary code issues relating to 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. In 2017 and 2018 the CHC held 4 open meetings and numerous conference calls, which included members of the committees as well as any interested parties, to discuss and debate the proposed changes. Information on the CHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CHC effort can be downloaded from the CHC website at: https://www.iccsafe.org/codes-tech-support/cs/icc-committee-on-healthcare/.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Permits operation change without having to comply with incidental use requirements.
EB99-19
IEBC®: 1007.1 (New)

Proponent: John Williams, representing Healthcare Committee (AHC@iccsafe.org)

2018 International Existing Building Code
Revise as follows:

1007.1 Special occupancies. Where the occupancy of an existing building or part of an existing building is changed to one of the following special occupancies as described in NFPA 70, the electrical wiring and equipment of the building or portion thereof that contains the proposed occupancy shall comply with the applicable requirements of NFPA 70, whether or not a change of occupancy group is involved. Health care facilities, including Group I-2, ambulatory healthcare facilities and outpatient clinics, shall also comply with the applicable requirements of NFPA 99:

1. Hazardous locations.
2. Commercial garages, repair and storage.
3. Aircraft hangars.
4. Gasoline dispensing and service stations.
5. Bulk storage plants.
7. Health care facilities, including Group I-2, ambulatory healthcare facilities and outpatient clinics.
9. Theaters, audience areas of motion picture and television studios, and similar locations.
10. Motion picture and television studios and similar locations.
11. Motion picture projectors.

Reason: NFPA 99 specifies additional requirements for electrical systems in health care facilities than just NFPA 70. In order to meet federal conditions of participation health care facilities must comply with the electrical systems and equipment must be installed according to the requirements listed in NFPA 99, Health Care Facilities Code (K901, K911, and K916). This change will align the electrical systems installation requirements for Outpatient Clinics, Group B Ambulatory Care and Group I-2 facilities. NFPA 99 uses a risk based approach to system design, installation and maintenance in healthcare facilities (Group I-2 facilities, ambulatory care facilities and outpatient clinics). Four levels of systems categories are defined in NFPA 99, based on the risks to patients and caregivers in the facilities. The categories are as follows:

(1) Category 1: Systems that are expected to be functional at all times. Failure of these systems is likely to cause major injury or death.

(2) Category 2: Systems are expected to have a high level of reliability. Failures of these systems are likely to cause minor injury to patients or caregivers, however, limited short durations of equipment downtime can be tolerated. Category 2 systems are not critical for life support.

(3) Category 3: Normal building system reliabilities are expected. Such systems support patient needs, but failure of such equipment or systems would not immediately affect patient care and are not critical for life support.

(4) Category 4: Such systems have no impact on patient care and would not be noticeable to patients in the event of failure.

The category definitions apply to equipment and systems operations.

A risk assessment should be conducted to evaluate the risk to the patients, staff, and visitors in all healthcare facilities. These categories are not always aligned to occupancy classification. Potential examples of areas/systems and their categories of risk:

(1) Ambulatory surgical center, where patients undergo general anesthesia, Category 1

(2) Reconstructive surgeon's office with general anesthesia, Category 1

(3) Procedural sedation site for outpatient services, Category 2

(4) Cooling systems in Houston, TX, Category 2

(5) Cooling systems in Seattle, WA, Category 3

(6) Heating systems in Chicago, IL Category 2
(7) Dental office, no general anesthesia, Category 3

(8) Typical doctor’s office/exam room, Category 4

(9) Group I-2 Condition 2 facilities most systems would be Category 1

This approach more closely aligns system design, performance and maintenance to the safety risk to the public. It does not create significant additional costs.

This proposal is submitted by the ICC Committee on Healthcare (CHC). The CHC was established by the ICC Board to evaluate and assess contemporary code issues relating to 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. In 2017 and 2018 the CHC held 4 open meetings and numerous conference calls, which included members of the committees as well as any interested parties, to discuss and debate the proposed changes. Information on the CHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CHC effort can be downloaded from the CHC website at: https://www.iccsafe.org/codes-tech-support/cs/icc-committee-on-healthcare/.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This change aligns with existing federal requirements for the healthcare industry.

Proposal # 4242
**EB100-19**

IEBC®: 1009.5 (New)

**Proponent:** John Williams, representing Healthcare Committee (AHC@iccsafe.org)

**2018 International Existing Building Code**

Revise as follows:

**1009.5 Group I-2.** If the occupancy group is changed to Group I-2, the plumbing system and medical gas system shall comply with the applicable requirements of the International Plumbing Code.

**Reason:** The *International Plumbing Code* includes medical gas system requirements which are important to comply in many I-2 occupancies. The International Plumbing code provides guidance for medical gas systems to comply with federal guidelines (K903).

This proposal is submitted by the ICC Committee on Healthcare (CHC). The CHC was established by the ICC Board to evaluate and assess contemporary code issues relating to 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. In 2017 and 2018 the CHC held 4 open meetings and numerous conference calls, *which included members of the committees as well as any interested parties, to discuss and debate the proposed changes*. Information on the CHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CHC effort can be downloaded from the CHC website at: https://www.iccsafe.org/codes-tech-support/cs/icc-committee-on-healthcare/.

**Cost Impact:** The code change proposal will not increase or decrease the cost of construction

This change aligns with existing federal requirements for the healthcare industry.
**EB101-19 Part I**

**PART I — IEBC: 1011.4.1, 1011.4.6 (New), 506.4 (New); IRC: R310.5, R310.6, 310.9.1 (New)**

**PART II — IRC®: SECTION R310 (New), R310.5 (New), R310.6 (New), R310.9.1 (New)**

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

**THIS IS A 2 PART CODE CHANGE PROPOSAL. PART I WILL BE HEARD THE IEBC COMMITTEE, PART II WILL BE HEARD BY THE IRC-BUILDING COMMITTEE. PLEASE SEE THE TENTATIVE HEARING ORDERS FOR THE RESPECTIVE COMMITTEES.**

### 2018 International Existing Building Code

Revise as follows:

**SECTION 1011**

**CHANGE OF OCCUPANCY CLASSIFICATION**

1011.4 Means of egress, general. Hazard categories in regard to life safety and means of egress shall be in accordance with Table 1011.4.

<table>
<thead>
<tr>
<th>RELATIVE HAZARD</th>
<th>OCCUPANCY CLASSIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Highest Hazard)</td>
<td>H</td>
</tr>
<tr>
<td>2</td>
<td>I-2; I-3; I-4</td>
</tr>
<tr>
<td>3</td>
<td>A; E; I-1; M; R-1; R-2; R-4, Condition 2</td>
</tr>
<tr>
<td>4</td>
<td>B; F-1; R-3; R-4, Condition 1; S-1</td>
</tr>
<tr>
<td>5 (Lowest Hazard)</td>
<td>F-2; S-2; U</td>
</tr>
</tbody>
</table>

1011.4.1 Means of egress for change to a higher-hazard category. Where a change of occupancy classification is made to a higher-hazard category (lower number) as shown in Table 1011.4, the means of egress shall comply with the requirements of Chapter 10 of the International Building Code.

**Exceptions:**

1. Stairways shall be enclosed in compliance with the applicable provisions of Section 903.1.
2. Existing stairways including handrails and guards complying with the requirements of Chapter 9 shall be permitted for continued use subject to approval of the code official. Any stairway replacing an existing stairway within a space where the pitch or slope cannot be reduced because of existing construction shall not be required to comply with the maximum riser height and minimum tread depth requirements.
3. Existing corridor walls constructed on both sides of wood lath and plaster in good condition or 1/2 inch-thick (12.7 mm) gypsum wallboard shall be permitted. Such walls shall either terminate at the underside of a ceiling of equivalent construction or extend to the underside of the floor or roof next above.
4. Existing corridor doorways, transoms and other corridor openings shall comply with the requirements in Sections 805.5.1, 805.5.2 and 805.5.3.
5. Existing dead-end corridors shall comply with the requirements in Section 805.6.
6. An existing operable window with clear opening area not less than 4 square feet (0.38 m²) and minimum opening height and width of 22 inches (559 mm) and 30 inches (762 mm), respectively, operable window complying with Section 1011.4.6, shall be accepted as an emergency escape and rescue opening.

1011.4.2 Means of egress for change of use to an equal or lower-hazard category. Where a change of occupancy classification is made to an equal or lesser-hazard category (higher number) as shown in Table 1011.4, existing elements of the means of egress shall comply with the requirements of Section 905 for the new occupancy classification. Newly constructed or configured means of egress shall comply with the requirements of Chapter 10 of the International Building Code.

**Exception:** Any stairway replacing an existing stairway within a space where the pitch or slope cannot be reduced because of existing construction shall not be required to comply with the maximum riser height and minimum tread depth requirements.

1011.4.3 Egress capacity. Egress capacity shall meet or exceed the occupant load as specified in the International Building Code for the new occupancy.

1011.4.4 Handrails. Existing stairways shall comply with the handrail requirements of Section 805.9 in the area of the change of occupancy.
classification.

1011.4.5 Guards. Existing guards shall comply with the requirements in Section 805.11 in the area of the change of occupancy classification.

Add new text as follows:

1011.4.6 Existing emergency escape and rescue openings. Where a change of occupancy would require emergency escape and rescue opening in accordance with Section 1030.1 of the International Building Code, operable windows serving as the emergency escape and rescue opening shall comply with the following:

1. An existing operable window shall provide a minimum net clear opening of 4 square feet (0.38 m²) with a minimum net clear opening height of 22 inches (559 mm) and a minimum net clear opening width of 20 inches (508 mm).
2. A replacement window where such window complies with both of the following:
   2.1. The replacement window meets the size requirements in Item 1.
   2.2. The replacement window is the manufacturer’s largest standard size window that will fit within the existing frame or existing rough opening. The replacement window shall be permitted to be of the same operating style as the existing window or a style that provides for an equal or greater window opening area than the existing window.

Revise as follows:

SECTION 506
CHANGE OF OCCUPANCY

506.3 Stairways. An existing stairway shall not be required to comply with the requirements of Section 1011 of the International Building Code where the existing space and construction does not allow a reduction in pitch or slope.

Add new text as follows:

506.4 Existing Emergency escape and rescue openings. Where a change of occupancy would require emergency escape and rescue opening in accordance with Section 1030.1 of the International Building Code, operable windows serving as the emergency escape and rescue opening shall comply with the following:

1. An existing operable window shall provide a minimum net clear opening of 4 square feet (0.38 m²) with a minimum net clear opening height of 22 inches (559 mm) and a minimum net clear opening width of 20 inches (508 mm).
2. A replacement window where such window complies with both of the following:
   2.1. The replacement window meets the size requirements in Item 1.
   2.2. The replacement window is the manufacturer’s largest standard size window that will fit within the existing frame or existing rough opening. The replacement window shall be permitted to be of the same operating style as the existing window or a style that provides for an equal or greater window opening area than the existing window.
**EB101-19 Part II**

**IRC®: SECTION R310 (New), R310.5 (New), R310.6 (New), R310.9.1 (New)**

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

2018 International Residential Code

Revise as follows:

**SECTION R310**

**EMERGENCY ESCAPE AND RESCUE OPENINGS**

**R310.5 R310.8 Dwelling additions.** Where *dwelling additions* contain sleeping rooms, an emergency escape and rescue opening shall be provided in each new sleeping room. Where *dwelling additions* have *basements*, an emergency escape and rescue opening shall be provided in the new *basement*.

**Exceptions:**
1. An emergency escape and rescue opening is not required in a new *basement* that contains a sleeping room with an emergency escape and rescue opening.
2. An emergency escape and rescue opening is not required in a new *basement* where there is an emergency escape and rescue opening in an existing *basement* that is *accessed* from the new *basement*.
3. An operable window complying with Section 310.9.1 shall be acceptable as an emergency escape and rescue opening.

**R310.6 R310.9 Alterations or repairs of existing basements.** An emergency escape and rescue opening is not required where existing *basements* undergo alterations or repairs.

**Exception:** New sleeping rooms created in an existing basement shall be provided with emergency escape and rescue openings in accordance with Section R310.1. Other than new sleeping rooms, where existing basements undergo alterations or repairs an emergency escape and rescue opening is not required.

**Exception:** An operable window complying with Section 310.9.1 shall be acceptable as an emergency escape and rescue opening.

Add new text as follows:

**R310.9.1 Existing Emergency escape and rescue openings.** Where a change of occupancy would require emergency escape and rescue opening in accordance with Section 310.1, operable windows serving as the emergency escape and rescue opening shall comply with the following:

1. An existing operable window shall provide a minimum net clear opening of 4 square feet (0.38 m²) with a minimum net clear opening height of 22 inches (559 mm) and a minimum net clear opening width of 20 inches (508 mm).
2. A replacement window where such window complies with both of the following:
   2.1. The replacement window meets the size requirements in Item 1.
   2.2. The replacement window is the manufacturer’s largest standard size window that will fit within the existing frame or existing rough opening. The replacement window shall be permitted to be of the same operating style as the existing window or a style that provides for an equal or greater window opening area than the existing window.

**Reason:** The intent of this proposal is to allow for some existing or replacement windows to be used for emergency escape and rescue openings (EEROs) while still maintaining the level of safety for occupants and emergency responders. EEROs are required in IBC Section 1030 only in R-3 and R-4 dwellings and for R-2 apartments in single exit buildings (4 units per floor, 3 stories maximum). So looking at something converting to a single family home per Table 1011.1, Section 1104.1 would only apply if a house was made out of an F-2, S-2 or U – such as a barn to a house. Any other use being converted to a house would be under Section 1011.4.2 – which has no language for EEROs. There's does not appear to be any justification for a moving to the same or lesser hazard to be more restrictive than what is allowed for an increased hazard.

The provisions in Section 505 and 702 say they are not applicable to COO, so it should be addressed here for any occupancy that converts to R-3, R-4 and single exit R-2. The size currently permitted under Section 1104.1 Exception 7 for existing window is maintained. The requirements for replacement windows is from current language in 505 and 702.

The same language is proposed for COO under the prescriptive method – which currently does not address EEROs at all.

The IRC requires EEROs in Section R310.1. Current Section R310.5 and R310.6 state when a EERO needs to be added. The exceptions say an existing EERO can be used instead of one added, but it does not have the same allowances for existing windows currently found in the IEBC. It is proposed to allow for this by the new exceptions in R310.5 and 310.6 and a new R301.9.1 which mirrors the current language in the IEBC.
The order of R310.6 of the current allowances has been revised because the exception was more restrictive than the main text.

This is one of a series of proposal to coordinate the requirements for emergency escape and rescue openings in the IBC and IRC. While independent issues, if all the proposals are approved, the IRC section would appear as indicated in the reason for the proposal to revise the definition – emergency escape and rescue openings.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. Since 2017 the BCAC has held 6 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: https://www.iccsafe.org/codes-tech-support/codes/codedevelopment-process/building-code-actioncommittee-bcac.

**Cost Impact:** The code change proposal will decrease the cost of construction
The proposed allowance would allow for existing or replacement windows to be used instead of having to install new in some cases.

Proposal # 5755

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EB101-19 Part II
**EB102-19**

IEBC: 1011.1, 1011.1.1, 1011.1.1.1, 1011.1.2, 1011.1.3, 1011.2.1

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

### 2018 International Existing Building Code

Revise as follows:

**SECTION 1011**

**CHANGE OF OCCUPANCY CLASSIFICATION**

1011.1 General. The provisions of this section shall apply to buildings or portions thereof undergoing a change of occupancy classification. This includes a change of occupancy classification within a group as well as a change of occupancy classification from one group to a different group or where there is a change of occupancy within a space where there is a different fire protection system threshold requirement in Chapter 9 of the International Building Code. Such buildings shall also comply with Sections 1002 through 1010 of this code. The application of requirements for the change of occupancy shall be as set forth in Sections 1011.1 through 1011.1.4. A change of occupancy, as defined in Section 202, without a corresponding change of occupancy classification shall comply with Section 1001.2.

Delete without substitution:

**1011.1.1 Compliance with Chapter 9.** The requirements of Chapter 9 shall be applicable throughout the building for the new occupancy classification based on the separation conditions set forth in Sections 1011.1.1.1 and 1011.1.1.2.

**1011.1.1.1 Change of occupancy classification without separation.** Where a portion of an existing building is changed to a new occupancy classification or where there is a change of occupancy within a space where there is a different fire protection system threshold requirement in Chapter 9 of the International Building Code, and that portion is not separated from the remainder of the building with fire barriers having a fire-resistance rating as required in the International Building Code for the separate occupancy, the entire building shall comply with all of the requirements of Chapter 9 of this code applied throughout the building for the most restrictive occupancy classification in the building and with the requirements of this chapter.

**1011.1.1.2 Change of occupancy classification with separation.** Where a portion of an existing building is changed to a new occupancy classification or where there is a change of occupancy within a space where there is a different fire protection system threshold requirement in Chapter 9 of the International Building Code, and that portion is separated from the remainder of the building with fire barriers having a fire-resistance rating as required in the International Building Code for the separate occupancy, that portion shall comply with all of the requirements of Chapter 9 of this code for the new occupancy classification and with the requirements of this chapter.

**1011.1.2 Fire protection and interior finish.** The provisions of Sections 1011.2 and 1011.3 for fire protection and interior finish, respectively, shall apply to all buildings undergoing a change of occupancy classification.

**1011.3 Change of occupancy classification based on hazard category.** The relative degree of hazard between different occupancy classifications shall be determined in accordance with the categories specified in Tables 1011.4, 1011.5 and 1011.6. Such a determination shall be the basis for the application of Sections 1011.4 through 1011.7.

Revise as follows:

**1011.2 Fire protection systems.** Fire protection systems shall be provided in accordance with Sections 1011.2.1 and 1011.2.2.

**1011.2.1 Fire sprinkler system.** Where a change in occupancy classification occurs or where there is a change of occupancy within a space where there is a different fire protection system threshold requirement in Chapter 9 of the International Building Code that requires an automatic fire sprinkler system to be provided based on the new occupancy in accordance with Chapter 9 of the International Building Code, such The installation of the automatic sprinkler system shall be provided throughout the area where the change of occupancy occurs, required within the area of the change of occupancy and areas of the building not separated horizontally and vertically from the change of occupancy by one of the following:

1. Non rated permanent partition
2. Fire Partition
3. Smoke Partition
4. Smoke Barrier
5. Fire Barrier
6. Fire wall

**Exceptions:**

1. An automatic sprinkler system shall not be required in a one or two family dwelling constructed in accordance with the IRC.
2. Automatic sprinkler system shall not be required in a townhouse constructed in accordance with the IRC.
3. The townhouse shall be separated from adjoining units in accordance with Section R302.2 of the International Residential Code.

1011.2.2 Fire alarm and detection system. Where a change in occupancy classification occurs or where there is a change of occupancy within a space where there is a different fire protection system threshold requirement in Chapter 9 of the International Building Code that requires a fire alarm and detection system to be provided based on the new occupancy in accordance with Chapter 9 of the International Building Code, such system shall be provided throughout the area where the change of occupancy occurs. Existing alarm notification appliances shall be automatically activated throughout the building. Where the building is not equipped with a fire alarm system, alarm notification appliances shall be provided throughout the area where the change of occupancy occurs in accordance with Section 907 of the International Building Code as required for new construction.

Reason: The point of the revisions to 1011.2.1 is to allow for existing buildings that wish to add a sprinkler system to do so in such a manner that the partial sprinkler system will be within walls so that it will activate appropriately. So, regardless of a work area, the sprinkler system is within a space confined by walls that will allow for the heat to activate the sprinkler system. The end result, while not confined to separated occupancies or fire areas, should get existing buildings sprinklered over time. This would be required even if the area was of a lesser hazard, unlike some of the breaks offered in Sections 1011.4 through 1011.6.

The current language could be read to require the entire fire area or building to be sprinklered, even where only a single tenant is undergoing a change of occupancy. In looking to make the general reference to Chapter 9 in Section 1011.1.1, 1011.1.1.1 and 1011.1.1.2 consistent with the allowances in 1022.2 through 1011.2.2, it seemed more appropriate to delete the language since this will be specifically addressed.

The exceptions to Section 1011.2.1 were for consistency with the allowances for existing building in the IRC. Note that townhouses would be required to be separated.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. Since 2017 the BCAC has held 6 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: https://www.iccsafe.org/codes-tech-support/codes/codedevelopment-process/building-code-actioncommittee-bcac.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This would allow sprinkler systems to be added in a building over time rather than throughout where a COO occurs.
2018 International Existing Building Code

Add new text as follows:

### 1011.2.1.1 Nonrequired automatic sprinkler systems

The code official is authorized to permit the removal of existing automatic sprinkler system where all of the following conditions exist:

1. The system is not required for new construction.
2. The system is removed in its entirety throughout the building.
3. The system was not installed as part of any special construction features, including fire-resistance-rated assemblies and smoke-resistive assemblies, conditions of occupancy, means of egress conditions, fire code deficiencies, approved modifications or approved alternative materials, design and methods of construction, and equipment applying to the building.

### 1011.2.1.1.1 Approval

Plans, investigation and evaluation reports, and other data shall be submitted documenting compliance with Items 1 and 2 of Section 1011.2.1.1 for review and approval in support of a determination authorizing the removal of the automatic sprinkler system by the code official.

**Reason:** A change of occupancy could be to an occupancy that did not require a sprinkler system. If the system was old, outdated or needed extensive reconfiguration, costs could be high. The new Section 1011.2.1.1 allows for non required systems to be removed. To be removed the designer/building owner would have to demonstrate to the code official that the building did not need the sprinklers for occupancy, fire areas or type of construction limitations, and that none of the trade off’s for items such as travel distance or corridor rating were in effect in the building. The system would have to be removed totally – including the system in the ceiling, standpipes and the connections for the fire department outside of the building.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. Since 2017 the BCAC has held 6 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: https://www.iccsafe.org/codes-tech-support/codes/codedevelopment-process/building-code-actioncommittee-bcac.

**Cost Impact:** The code change proposal will not increase or decrease the cost of construction.

There will be the cost of removal, but this may be less than the cost of repairing or replacing an older system.
2018 International Existing Building Code

Revise as follows:

1011.7.2 Stairways. Where a change of occupancy classification is made to a higher-hazard category as shown in Table 1011.4, interior stairways shall be enclosed as required by the International Building Code.

Exceptions:

1. In other than Group I occupancies, an enclosure shall not be required for openings serving only one adjacent floor and that are not connected with corridors or stairways serving other floors.
2. Unenclosed existing stairways need not be enclosed in a continuous vertical shaft if each story is separated from other stories by 1-hour fire-resistance-rated construction or approved wired glass set in steel frames and all exit corridors are sprinklered. The openings between the corridor and the occupant space shall have not fewer than one sprinkler head above the openings on the tenant side. The sprinkler system shall be permitted to be supplied from the domestic water-supply systems, provided that the system is of adequate pressure, capacity, and sizing for the combined domestic and sprinkler requirements.
3. Existing penetrations of stairway enclosures shall be accepted if they are protected in accordance with the International Building Code.

1011.7.4 Openings. Openings into existing vertical shaft enclosures shall be protected by fire assemblies having a fire protection rating of not less than 1 hour and shall be maintained self-closing or shall be automatic-closing by actuation of a smoke detector. Other openings shall be fire protected in an approved manner. Existing fusible linktype automatic door-closing devices shall be permitted in all shafts except stairways if the fusible link rating does not exceed 135°F (57°C).

Exception: Existing penetrations of stairway enclosures shall be accepted if they are protected in accordance with the International Building Code.

Reason: This is an editorial correction. Without this exception, the means of egress allowance to use the provisions of Section 903.1 (and 802.2) would not be applicable in change of occupancy classification with alterations projects. This will make the requirements consistent and provide a pointer to 903.1. The exception related to openings (1011.7.2 Exception 3) is moved to Section 1011.7.4 since that deals with openings into exiting vertical shafts.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. Since 2017 the BCAC has held 6 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: https://www.iccsafe.org/codes-tech-support/codes/codedevelopment-process/building-code-actioncommittee-bcac.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. The proposal is an editorial correction and may reduce potential costs by providing design options.
2018 International Existing Building Code

Add new text as follows:

1012
STORM SHELTER

1012.1 **Group E occupancy.** In areas where the shelter design wind speed for tornados is 250 mph in accordance with Figure 1304.2(1) of ICC 500, all buildings undergoing a change a occupancy to Group E where the occupant load is 50 or more, shall have a storm shelter constructed in accordance with ICC 500.

**Exceptions:**

1. Group E day care facilities.
2. Group E occupancies accessory to places of religious worship.
3. Buildings meeting the requirements for storm shelter design in ICC 500.

1012.1.1 **Required occupant capacity.** The required occupant capacity of the storm shelter shall include all buildings on the site, and shall be the total occupant load of the classrooms, vocational rooms and offices in the Group E occupancy.

**Exceptions:**

1. Where the change of occupancy to Group E is on an existing Group E site, and where the area of the change of occupancy to Group E is not of sufficient size to accommodate the required occupant capacity of the storm shelter for all of the buildings on-site, the storm shelter shall at a minimum accommodate the required capacity for the area undergoing the change of occupancy to Group E.
2. Where approved by the code official, the required occupant capacity of the shelter shall be permitted to be reduced by the occupant capacity of any existing storm shelters on the site.

**Reason:** The IEBC currently requires tornado shelters for additions in Section 502.8, 1106, 1301.2.3.1. However, Chapter 10, related to change of occupancy, has no provisions requiring tornado shelters for areas changed to Group E occupancy. It is common in many areas of the country for schools to purchase existing buildings that were designed for commercial or public use other than a Group E occupancy so that the school can convert the facilities into a Group E occupancy. This is especially common for smaller private schools however it can also occur in public-private partnerships. If a storm shelter is required for new buildings and for additions, building officials have indicated that this should be required for changes of use to Group E occupancy and have requested this code change to clarify the code intent.

**Cost Impact:** The code change proposal will increase the cost of construction. This would increase the cost of construction by requiring tornado shelters in existing buildings that do not have any Group E occupancies where they are being changed to a Group E occupancy.
2018 International Existing Building Code

Revise as follows:

SECTION 1104
SMOKE ALARMS IN OCCUPANCYGROUPS R AND I-1

1104.1 Smoke alarms in existing portions of a building. Where an addition is made to a building or structure of a Group R or I-1 occupancy, the existing building shall be provided with smoke alarms as required by Section 1103.8 of the International Fire Code or Section R314 of the International Residential Code as applicable.

SECTION 1105
CARBON MONOXIDE ALARMS IN GROUPS I-1, I-2, I-4 AND R

1105.1 Carbon monoxide alarms in existing portions of a building. Where an addition is made to a building or structure of a Group I-1, I-2, I-4 or R occupancy, the existing building shall be equipped with carbon monoxide alarms in accordance with Section 1103.9 of the International Fire Code or Section R315 of the International Residential Code, as applicable.

Reason: The reference to the IRC for requirements in the existing building, where there is no work (addition) occurring is incorrect and not applicable as there are no IRC requirements for an area that is not undergoing repair, alteration or addition. The change in the IFC reference section is simply to simplify the pointer; IFC Section 1103.9 basically refers to Section 915 with the only technical difference being Exception 1 which states “Carbon monoxide detectors are permitted to be solely battery operated where the code that was in effect at the time of construction did not require carbon monoxide detectors to be provided”; which is an appropriate exception for the retroactive requirements in IFC Chapter 11. If an Addition is being conducted, the carbon monoxide alarm requirements for new construction are appropriate.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. Since 2017 the BCAC has held 6 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: https://www.iccsafe.org/codes-tech-support/codes/codedevelopment-process/building-code-actioncommittee-bcac.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This is providing a more appropriate reference, not a change in requirements.
EB107-19
IEBC: 1106.1.1, 110.1.3 (New)

Proponent: Ek Kulik, representing ICC Building Code Action Committee (bcac@iccsafe.org); Marc Levitan, representing the ICC 500 Storm Shelter Development Committee

2018 International Existing Building Code

SECTION 1106
STORM SHELTERS

1106.1 Addition to a Group E occupancy. Where an addition is added to an existing Group E occupancy located in an area where the shelter design wind speed for tornados is 250 mph in accordance with Figure 304.2(1) of ICC 500 and the occupant load in the addition is 50 or more, the addition shall have a storm shelter constructed in accordance with ICC 500.

Exceptions:
1. Group E day care facilities.
2. Group E occupancies accessory to places of religious worship.
3. Additions meeting the requirements for shelter design in ICC 500.

Revise as follows:

1106.1.1 Required occupant capacity. The required occupant capacity of the storm shelter shall include all buildings on the site, and shall be the greater of the following:

1. The total occupant load of the classrooms, vocational rooms and offices in the Group E occupancy.
2. The occupant load of any the largest indoor assembly space that is associated with the Group E occupancy.

Exceptions:
1. Where an addition is being added on an existing Group E site, and where the addition is not of sufficient size to accommodate the required occupant capacity of the storm shelter for all of the buildings on-site, the storm shelter shall at a minimum accommodate the required capacity for the addition.
2. Where approved by the code official, the required occupant capacity of the shelter shall be permitted to be reduced by the occupant capacity of any existing storm shelters on the site.

1106.1.2 Location. Storm shelters shall be located within the buildings they serve, or shall be located where the maximum distance of travel from not fewer than one exterior door of each building to a door of the shelter serving that building does not exceed 1,000 feet (305 m).

Add new text as follows:

1106.1.3 Occupancy classification. The occupancy classification for storm shelters shall be determined in accordance with Section 423.3 of the International Building Code.

Reason: Occupancy classification was added in the IBC Section 423 by G59-18. Since the IEBC uses the IBC for occupancy classifications, it seems appropriate to make this a reference. G65-18 made the clarification in Section 1106.1.1 Item 2 for assembly spaces in Section 423.4.1 Item 2.

This proposal is submitted by the ICC Building Code Action Committee (BCAC) and the ICC 500 Code Development committee.

BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. Since 2017 the BCAC has held 6 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: https://www.iccsafe.org/codes-tech-support/codes/codedevelopment-process/building-code-actioncommittee-bcac.

The ICC 500 Standards Development committee is responsible for the development of the ICC/NSSA Standard for the Design and Construction of Storm Shelters. The committee is currently working on the development of the 2020 edition. In 2017 the ICC 500 committee held 7 open conference calls. In addition, there were numerous Working Group meetings and conference calls, 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: https://www.iccsafe.org/codes-tech-support/codes/code-development-process/standards-development/is-stm.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is a coordination with clarifications added to 2021 IBC.
2018 International Existing Building Code

SECTION 1106
STORM SHELTERS

Revise as follows:

1106.1 Addition to a Group E occupancy. Where an addition is added to an existing Group E occupancy located in an area where the shelter design wind speed for tornados is 250 mph in accordance with Figure 304.2(1) of ICC 500 and the occupant load in the addition is 50 or more, the addition shall have a storm shelter constructed in accordance with ICC 500.

Exceptions:
1. Group E day care facilities.
2. Group E occupancies accessory to places of religious worship.
3. Additions meeting the requirements for shelter design in ICC 500.

1106.1.1 Required occupant capacity. The required occupant capacity of the storm shelter shall include all buildings on the site, and shall be the greater of the following:

1. The total occupant load of the classrooms, vocational rooms and offices in the Group E occupancy.
2. The occupant load of any indoor assembly space that is associated with the Group E occupancy.

Exceptions:
1. Where an addition is being added on an existing Group E site, and where the addition is not of sufficient size to accommodate the required occupant capacity of the storm shelter for all of the buildings on-site, the storm shelter shall at a minimum accommodate the required capacity for the addition.
2. Where approved by the code official, the required occupant capacity of the shelter shall be permitted to be reduced by the occupant capacity of any existing storm shelters on the site.

Reason: This proposal is submitted by the National Storm Shelter Association (NSSA) and the ICC 500 Storm Shelter Standard Development committee. The ICC 500 Standards Development committee is responsible for the development of the ICC/NSSA Standard for the Design and Construction of Storm Shelters. The committee is currently working on the development of the 2020 edition. In 2017 the ICC 500 committee held 7 open conference calls. In addition, there were numerous Working Group meetings and conference calls, 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: https://www.iccsafe.org/codes-tech-support/codes/code-development-process/standards-development/is-stm.

NSSA was responsible for the development of the original standard for storm shelters in 2001, which ICC 500 replaced through an agreement between ICC and NSSA. Representing General, User and Producer interest categories, NSSA is a technical organization that is committed to promoting consistent quality in both residential and community storm shelters.

For the same reason that the code does not require shelters for the entire population that outdoor venues can accommodate, such as outdoor football fields, it should not be necessary for schools to increase the size of the shelters for criteria 2. It is common for schools to share sites with other buildings that have indoor assembly areas that many building officials conservatively consider to be associated with a Group E occupancy. These assembly areas are often on the same site as the school and are sometimes even used by students during the school day, but these assembly areas do not add to the normal population of students in school and the staff that are associated with those students. Many school communities can understand and support the unfunded mandate in tornado prone areas that schools bear the cost of providing tornado shelters for minors that are required by law to be in the care of a school and those adult individuals taking care of them, out of an elevated obligation that comes with having school be mandatory for minors in our country. However, it is inappropriate to require that school systems bear the cost of sheltering possible occupants from the public at these areas. The population for criteria 2 can be significantly larger than criteria 1 when there are large assembly spaces on the site such as a public library (e.g. when a public library operates on a school campus and also functions as the school library), indoor football field, performing arts center, equestrian arena, natatorium, competition basketball arena, and/or professional development center.
The additional people in question (above and beyond criteria 1) elect to be in those assembly areas (as adults, or as minors before or after normal school hours at the permission of their parents/guardians), just like they do in any commercial or other public assembly area. If ICC believed that the public in all assembly areas needed to be sheltered because the tornado hazards are that significant in those areas, then those types of businesses should be required to build tornado shelters too. The current code places an inequitable financial burden on school districts. More importantly, though, the additional area of shelter will most likely never be used.

Yes, if a tornado with windspeeds greater than the main building was designed to withstand happens to occur at the exact moment that there is an assembly with more people than the criteria 1 population, the additional area of the shelter could be used. However, there is a very low probability of this occurring and, other than this occurrence, the additional area of shelter would typically never be used because school districts that are constructing code-required shelters (not FEMA funded safe rooms) typically have no intention of ever opening their tornado shelters up to the general public because of the many operational challenges (e.g. concern with overcrowding above the shelter capacity) and increased liability.

This issue is further complicated by the fact that Section 1106.1.2 requires storm shelters be within 1,000 feet of the buildings they serve. Many high school campuses have buildings with Assembly functions (that building officials conservatively consider to be associated with an E occupancy) greater than 1,000 feet from the school building. The code is not clear whether these assembly areas require their own tornado shelter. Removing criteria 2 would resolve this dilemma by clearly identifying that the occupant load of the classrooms, vocational areas and offices are the areas that need to be served with tornado shelters.

The rationale to remove criteria 2 applies to new campuses as well as existing construction; however, it is especially applicable for additions to existing campuses where options to provide a tornado shelter are much more limited because the existing buildings were not designed with a future tornado shelter in mind.

The following is an example based on a real case provided by a school district in Texas, with some modifications made to simplify the example:

There is an existing academy and an existing performing arts center on a 100 Acre site, with the two buildings more than 1,000 feet apart, and the 2018 IEBC is in effect. The school system proposed an addition to the existing academy to double the criteria 1 population from 1,000 to 2,000. The criteria 1 population of the performing arts center is 0. The Building Official considers the performing arts center to be an A that is associated with an E occupancy. There are moveable partitions in the performing arts center that allow all of the rooms (except for the lobby) to open up into one large performing arena for 5,000 people in seats and up to 500 people on stage, making the criteria 2 population (the largest indoor assembly area associated with the E occupancy on the site) 5,500 people. The school system is required to build a shelter for at least 5,500 people because the floor plan area of the proposed addition to the academy could accommodate 5,500 people if the entire addition was one large tornado shelter. If the two buildings were closer than 1,000 feet, the 2018 IEBC would require $10 Million of sheltering ($5.6 Million for the 2,000 people in a multi-purpose shelter and $4.4 Million for 3,500 people in a dedicated, single-use shelter). This means that even in the 1,000 feet proximity rule was not in effect, this school system would need to spend $4.4 Million on sheltering the additional population that could be in a performing arts center. However, because the buildings are more than 1,000 feet apart, the actual cost impact of criteria 2 is much greater at this campus because 2 separate shelters are required to accommodate the travel distance requirement. 2018 IEBC section 1106.1.2 requires that the shelters be located within 1,000 feet of the "population they serve" and these two buildings are more than 1,000 feet apart. Therefore, the code requires that a 5,500 person shelter be constructed as a new addition to the performing arts center to accommodate that population and a 2,000 person shelter be constructed as part of the proposed addition to the academy. The combined cost of these two shelters would be $12.5 Million ($5.6 Million for the 2,000 people in the multi-purpose shelter by the academy and $6.9 Million for 5,500 people in a dedicated, single-use shelter by the performing arts center). The school system was prepared to construct a $5.6 Million shelter for the 2,000 people in the multi-purpose shelter by the academy but could not fund the additional $6.9 Million (associated with the criteria 2 requirement) to shelter the performing arts center population, which is a special events center. Therefore, the school system was not able to double the population of their academy as they had hoped.

Cost Impact: The code change proposal will decrease the cost of construction
There will be a decrease in the cost for storm shelters for existing schools that have associated assembly spaces larger than the student population.
EB109-19

IEBC®: 1106.1.2

Proponent: Benchmark Harris, representing self

2018 International Existing Building Code

Delete without substitution:

1106.1.2 Location. Storm shelters shall be located within the buildings they serve, or shall be located where the maximum distance of travel from not fewer than one exterior door of each building to a door of the shelter serving that building does not exceed 1,000 feet (305 m).

Reason: While 1,000 feet maximum travel may be appropriate for new schools, this can be an undue hardship for existing buildings. Where an addition is located may be limited by a variety of building and site constraints. Good disaster management practices will typically give schools a response time long enough to be able to move students to on-site shelters. And, good management of a storm shelter is often better when there is 1 location instead of many smaller tornado shelters. For example, it’s possible to overcrowd a tornado shelter when there are multiple shelters onsite and it is not clear which shelter has room available, unless all tornado shelters are designed to accommodate the entire population of the campus which would be a significant, redundant cost. Furthermore, emergency rescue is greatly assisted when there are a fewer number of tornado shelters for people to be rescued from.

An example of how the current provision can create a significant and unnecessary financial impact at a campus: A large, existing community college in Texas with 25 buildings throughout an approximately 200 Acre campus. 1 building in the middle of the campus is for high school students that want to earn early college credit, making this existing building a Group E building. The other 24 buildings have assembly spaces that are considered an accessory to the Group E occupancy because they can be used by the high school students. The campus wants to build a large addition to the early college learning building for high school students, one that is large enough to accommodate the population required by Section 1106.1.1. However, there are indoor assembly spaces that are spread throughout the entire campus, much greater than 1,000 feet, requiring that multiple new tornado shelters be constructed for the assembly spaces that are accessory to a Group E occupancy. Tornado Shelters are not required for college campus classrooms, which are Group B. It is an unnecessary burden to require a community college campus construct multiple tornado shelters throughout their campuses when there are emergency planning alternatives. The community college can manage the high school student population by directing those students to their designated shelters at early signs of an approaching storm, even though some students may be in a building farther than 1,000 feet from the shelter when a tornado approaches.

Cost Impact: The code change proposal will decrease the cost of construction

Decrease. Removing the requirement for a maximum 1,000 foot travel distance avoids constructing multiple tornado shelters at large campuses, instead of one.

Proposal # 5628

EB109-19

ICC COMMITTEE ACTION HEARINGS :: April, 2019

EB202
2018 International Existing Building Code

Revise as follows:

1201.3 Special occupancy exceptions—museums. Where a building in Group R-3 is used for Group A, B or M purposes such as museum tours, exhibits, and other public assembly activities, or for museums less than 3,000 square feet (279 m²), the code official may determine that the occupancy is Group B where life safety conditions can be demonstrated in accordance with Section 1201.2. Adequate means of egress in such buildings, which may include, but are not limited to, a means of maintaining doors in an open position to permit egress, a limit on building occupancy to an occupant load permitted by the means of egress capacity, a limit on occupancy of certain areas or floors, or supervision by a person knowledgeable in the emergency exiting procedures, shall be provided.

Reason: This addresses non mandatory language.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. Since 2017 the BCAC has held 6 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: https://www.iccsafe.org/codes-tech-support/codes/codedevelopment-process/building-code-actioncommittee-bcac.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

Editorial.
EB111-19
IEBC®: 1203.3 (New)

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

2018 International Existing Building Code
Revise as follows:

1203.3 Means of egress. Existing door openings and corridor and stairway widths less than those specified elsewhere in this code may be approved, provided that, Where, in the opinion of the code official, there is sufficient width and height for a person to pass through the opening or traverse the means of egress, existing door openings and corridor and stairway widths not required to meet the widths required by the International Building Code or this code. Where approved by the code official, the front or main exit doors need not swing in the direction of the path of exit travel, provided that other approved means of egress having sufficient capacity to serve the total occupant load are provided.

Reason: This addresses non mandatory language and also addresses the fact that this is likely intending to refer also to the IBC. This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. Since 2017 the BCAC has held 6 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: https://www.iccsafe.org/codes-tech-support/codes/codedevelopment-process/building-code-actioncommittee-bcac.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is editorial.
IEBC®: 1204.9

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

2018 International Existing Building Code
Revise as follows:

1204.9 Finishes. Interior finish Where interior finish materials are required to have a flame spread index of Class C or better, when tested in accordance with ASTM E84 or UL 723 comply with the fire test requirements of Section 803.1 of the International Building Code, existing nonconforming materials shall be permitted to be surfaced with an approved fire-retardant paint or finish coating to achieve the required fire performance.

Exception: Existing nonconforming materials need not be surfaced with an approved fire-retardant paint or finish coating where the building is equipped throughout with an automatic sprinkler system installed in accordance with the International Building Code and the nonconforming materials can be substantiated as being historic in character.

Reason: This code proposal makes two changes:
1. Neither the IBC nor the IFC allow all interior finish materials to be tested to ASTM E84 or UL 723. In fact, although all materials are allowed to be classified by NFPA 286 (a room corner test), some materials are not allowed to be classified by using ASTM E84 or UL 723. Any material that meets the requirements of the IBC code (or IFC code) based on testing to NFPA 286 is considered to comply with a Class A, Class B or Class C requirement, in accordance with ASTM E84 or UL 723. The requirements are contained in Section 803.1 of the IBC (with 803.1.1 dealing with NFPA 286, 803.1.2 dealing with ASTM E84 or UL 723 and 803.1.3 dealing with materials with special requirements). Therefore it is possible that interior finish materials have been shown to meet NFPA 286 requirements and they are (in accordance with the IBC) acceptable as materials with a “Class C or better” in accordance with ASTM E84 or UL 723 and don’t need retesting (or may not even be allowed by the IBC to be tested to ASTM E84 or UL 723). The use of a reference exclusively to a Class C, without a reference to the IBC or IFC, prevents the use of materials tested to (or needing testing to) NFPA 286.

2. The typical nomenclature used in the IBC and IFC is fire-retardant coating.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

The revision simply permits materials already tested to NFPA 286 to be covered.
Proponent: Tim Earl, representing GBH International (tearl@gbhinternational.com)

2018 International Existing Building Code
Revise as follows:

1204.9 Finishes. Where interior finish materials are required to have a flame spread index of Class C or better, when tested in accordance with ASTM E84 or UL 723, existing nonconforming materials shall be surfaced with approved fire-retardant paint or finish, fire-retardant coating. Compliance with this section shall be demonstrated by testing the fire-retardant coating on the same material and achieving the required performance. If the same material is not available, it shall be permitted to test on a similar material.

Exception: Existing nonconforming materials need not be surfaced with an approved fire-retardant paint or finish coating where the building is equipped throughout with an automatic sprinkler system installed in accordance with the International Building Code and the nonconforming materials can be substantiated as being historic in character.

Reason: It is important to clarify that, if fire retardant coatings are to be used to achieve improved fire performance, they must have been tested on the actual product (substrate) to which they will be applied. There have been instances of manufacturers applying coatings to a noncombustible surface and running an ASTM E84 test in an attempt to demonstrate compliance. (See figures below). This obviously does not reflect real world performance and is not the intent of the code. This proposal would make the requirement more explicit.

This proposal also replaces “paint or finish” with the more generic term “coating” which is used throughout the I-codes.
Cost Impact: The code change proposal will increase the cost of construction
This may increase the cost of construction by requiring tests to be run on the surface intended to be used.
EB114-19
IEBC®: 1301.2

Proponent: Kevin Duerr-Clark, representing NYS Department of State (kevin.duerr-clark@dos.ny.gov)

2018 International Existing Building Code
Revise as follows:

1301.2 Applicability. Existing buildings in which there is work involving additions, alterations or changes of occupancy shall be made to conform to the requirements of this chapter or the provisions of Chapters 6 through 10. The provisions of Sections 1301.2.1 through 1301.2.5 shall apply to existing occupancies that will continue to be, or are proposed to be, in Groups A, B, E, F, I-2, M, R and S. These provisions shall apply to Group U occupancies only where such occupancies are undergoing a change of occupancy or a partial change in occupancy with separations in accordance with Section 1301.2.2. These provisions shall not apply to buildings with occupancies in Group H or I-1, I-3 or I-4.

Reason: Currently, the applicability section is silent on the use of this section on Group U buildings. Although Section 1301.6 Evaluation process, clearly allows it for Group U buildings, the intent is the allows the use of this compliance method for changing from one Group U to another Group. Group U buildings undergoing alterations or additions with no change in occupancy cannot be evaluated using this method. The tables, charts, and point system do not accommodate this.

This proposal simply clarifies the proper use of this method for Group U buildings.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is a clarification of how the code is already used.

Proposal # 4239

EB114-19
EB115-19
IEBC®: 1301.1 (New)

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

2018 International Existing Building Code
Revise as follows:

1301.1 Scope. The provisions of this chapter shall apply to the alteration, addition and change of occupancy of existing structures, including historic structures, as referenced in Section 301.3.3. The provisions of this chapter are intended to maintain or increase the current degree of public safety, health and general welfare in existing buildings while permitting, alteration, addition and change of occupancy without requiring full compliance with the prescriptive method of Chapter 5 or the work area method of Chapters 6 through 12, except where compliance with other provisions of this code is specifically required in this chapter.

Reason: This compliance method should not require compliance with both the prescriptive and work area methods. As currently written, because only Chapters 6 through 12 are listed, it could be construed that compliance with Chapter 5, Prescriptive Compliance Method is required. By adding the Chapter 5 reference, it clarifies the intent to absolve projects that are properly design in accordance with Chapter 13 from compliance with both the Prescriptive and Work Area methods.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. Since 2017 the BCAC has held 6 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: https://www.iccsafe.org/codes-tech-support/codes/codedevelopment-process/building-code-actioncommittee-bcac.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is merely further clarification that this method would not require further compliance with the prescriptive method, if compliance with the performance method is established.
2018 International Existing Building Code

Revise as follows:

1301.2 Applicability. *Existing buildings* in which there is work involving *additions, alterations or changes of occupancy* shall be made to conform to the requirements of this chapter or the provisions of Chapters 6 through 10. The provisions of Sections 1301.2.1 through 1301.2.5 shall apply to existing occupancies that will continue to be, or are proposed to be, in Groups A, B, E, F, I-2, M, R and S. These provisions shall not apply to buildings with occupancies in Group H or I-1, I-3 or I-4.

Add new text as follows:

1301.2.6 Plumbing Fixtures. Plumbing fixtures shall be provided in accordance with Section 1009 for a *Change of Occupancy* and Section 809 for *Alterations*. Plumbing fixtures for *additions* shall be in accordance with the *International Plumbing Code*.

Reason: Currently there does not appear to be a code path, within the performance compliance method, to require additional plumbing facilities or fixtures for buildings undergoing alterations, additions, and changes in occupancy, where the occupant load is increased. The performance compliance method focuses primarily on fire and life safety. Historically, applicants have argued that due to the lacking code path, they can increase the occupant load of a building and achieve compliance using the performance method, without increasing the number of plumbing fixtures or facilities to account for the increased occupant load. This new language would provide a code path to specifically require fixtures and facilities yet provides the same level of leniency as the other compliance paths available in the Existing Building Code.

Cost Impact: The code change proposal will increase the cost of construction. This may increase the cost of construction because today, the code path to require the additional facilities does not exist.
EB117-19
IEBC®: 1301.2.2

Proponent: Gregory Nicholls, representing American Institute of Architects (gnicholls@preview-group.com)

2018 International Existing Building Code
Revise as follows:

1301.2.2 Partial change in occupancy. Where a portion of the building is changed to a new occupancy classification and that portion is separated from the remainder of the building with fire barrier or horizontal assemblies having a fire-resistance rating as required by Table 508.4 of the International Building Code or Section R302 of the International Residential Code for the separate occupancies, or with approved compliance alternatives, the portion changed shall be made to conform to the provisions of this section. Only the portion separated shall be required to be evaluated for compliance.

Where a portion of the building is changed to a new occupancy classification and that portion is not separated from the remainder of the building with fire barriers or horizontal assemblies having a fire-resistance rating as required by Table 508.4 of the International Building Code or Section R302 of the International Residential Code for the separate occupancies, or with approved compliance alternatives, the provisions of this section which apply to each occupancy shall apply to the entire building. Where there are conflicting provisions, those requirements which secure the greater public safety shall apply to the entire building or structure.

Reason: The code text does not explain how to evaluate a separated partial change of occupancy. The current ICC code commentary is not at all consistent with how a partial change of occupancy is treated in Section 1011.1.1.2 IEBC, even though the wording is almost the same. The code text and commentary for Section 1011.1.1.2 IEBC specifically only require compliance with Chapter 9 IEBC for that portion within the fire-resistance rated separations. When using the Performance Compliance Method in Section 1301 IEBC, once again the code text only dictates that the portion changed and separated has to comply. But that leaves some confusion as to how the evaluation needs to be done, and this is apparent with the over-reaching interpretation in the IEBC commentary, which reads,

“Where a portion of the building is changed to a new occupancy classification and that portion is separated from the remainder of the building by a fire barrier that complies with the requirements for new construction, the new occupancy portion must be evaluated with the existing or proposed building design to be in full compliance with the provisions of Chapter 13. The remainder of the existing building must also be evaluated in accordance with Chapter 13. The mandatory safety scores for the new occupancy portion of the building and the existing occupancy are obtained from those listed in Table 1401.8 and are incorporated in the building’s final evaluation score (see Table 1401.7).”

The requirement stated in the commentary to evaluate the remainder of the building is in contrast to the code text, and opposite of the code text and intent for partial change of occupancy without the performance compliance method. Why should a fully separated partial change of occupancy on the first floor of a 20-story building need the other stories to comply with the mandatory safety scores when no change of occupancy or alterations are proposed? So if the existing floors above are over the allowable height in current code, then what? This interpretation, which has no support in code text, will make it unfeasible for small changes in occupancy in existing non-compliant buildings.

By adding the text shown, it is then clear that only the portion separated needs to comply and that this is the only portion that needs to be evaluated. This is also making application of the evaluation clear and consistent with Section 1301.2.2 IEBC.

Cost Impact: The code change proposal will decrease the cost of construction
By clarifying the code text to meet the intent of how a partial change in occupancy is limited in scope, the cost of construction to the remainder of the building is reduced.
**EB118-19**

IEBC®: 1301.3

**Proponent:** Jeffrey Harper, JENSEN HUGHES, representing JENSEN HUGHES (jharper@jensenhughes.com); Sean Donohue, representing JENSEN HUGHES (sdonohue@jensenhughes.com)

**2018 International Existing Building Code**

Revise as follows:

**1301.3 Acceptance.** For repairs, alterations, additions, and changes of occupancy to existing buildings that are evaluated in accordance with this section, compliance with this section shall be accepted by the code official. Existing buildings without repairs, alterations, additions or a change of occupancy that are evaluated and receive a passing score in accordance with Table 1301.8 shall be deemed to comply with Chapter 11 of the International Fire Code.

**Reason:** Chapter 11 of the IFC provides no alternate to compliance for existing buildings in the same manner that NFPA 101A provides for existing buildings regulated by NFPA 101. The IEBC only applies to buildings undergoing repair, alteration, change of occupancy, addition and relocation of existing buildings. However, Chapter 13 of IEBC allows the performance compliance method to be used for existing occupancies. Per 1301.2: "The provisions of Sections 1301.2 through 1301.5 shall apply to existing occupancies that will continue to be, or are proposed to be in Groups A, B, E, F, I-2, M, R and S." Therefore, no change is needed to allow the use of this Chapter to existing buildings.

By adding an applicability section to the administrative provisions of the fire code (included in a separate Proposal), the user is given a code path to use the evaluation methods prescribed in Chapter 13 of the IEBC for existing buildings.

Therefore, the change to Section 1301.3 of the IEBC is necessary to add authority for acceptance of the performance compliance method on existing buildings wherein no work is planned. Currently this acceptance section only applies to buildings undergoing construction.

For example: An existing office building’s highest story is 55 feet above the lowest level of fire department access and has been cited for not having any standpipes. Per IFC Section 1103.6, standpipes are required. The building is fully sprinkler protected per NFPA 13 and provided with a fire alarm system throughout. All shafts are 2-hour rated and corridors are 1-hour rated. Egress capacity, travel distances and common paths all exceed that required by the IBC for new construction and elevators have been recently replaced with fully compliant Stage 2 recall capability. The fire code would require standpipes regardless of these other systems. The Performance Compliance Method permits an accepted method of evaluating all components of a building and providing a score to account for deficiencies.

**Cost Impact:** The code change proposal will not increase or decrease the cost of construction

This code provision will not increase cost and has a high likelihood of reducing cost by providing flexibility that does not currently exist in the code.
Revise as follows:

1301.6.2 Building area. The value for building area shall be determined by the formula in Section 1301.6.2.2. Section 506 of the International Building Code and the formula in Section 1301.6.2.1 shall be used to determine the allowable area of the building. Subtract the actual building area from the allowable area and divide by 1,200 square feet (112 m²). Enter the area value and its sign (positive or negative) in Table 1301.7 under Safety Parameter 1301.6.2, Building Area, for fire safety, means of egress and general safety. In determining the area value, the maximum permitted positive value for area is 50 percent of the fire safety score as listed in Table 1301.8, Mandatory Safety Scores. Group I-2 occupancies shall be scored zero.

1301.6.2.1 Allowable area formula. The following formula shall be used in computing allowable area:

\[ A_p = A_t \times (NS \times I) \]  

(Equation 13-3)

where:

- \( A_t \) = Allowable building area per story (square feet).
- \( A_p \) = Tabular allowable area factor (NS, S1, S13R, or SM value, as applicable) in accordance with Table 506.2 of the International Building Code.
- \( NS \) = Tabular allowable area factor in accordance with Table 506.2 of the International Building Code for a nonsprinklered building (regardless of whether the building is sprinklered).
- \( I \) = Area factor increase due to frontage as calculated in accordance with Section 506.3 of the International Building Code.

1301.6.2.2 Area formula. The following formula shall be used in computing the area value. Determine Equation 13-4 shall be used for a single occupancy buildings and Equation 13-5 shall be used for multiple occupancy buildings. Determine the area value for each occupancy floor area on a floor-by-floor basis. For each multiple occupancy, choose buildings the minimum area value of the set of values obtained for the particular occupancy shall be used as the area value for that occupancy.

For single occupancy buildings:

\[ \text{Area value}_i = \left( \frac{\text{Allowable area}_i}{1200\text{ square feet}} \right) \]  

(Equation 13-4)

For multiple occupancy buildings:

\[ \text{Area value}_i = \left( \frac{\text{Allowable area}_i}{1200\text{ square feet}} \right) \times \left[ 1 - \left( \frac{\text{Actual area}_i}{\text{Allowable area}_i} \right) \right] \]  

Where:

- \( i \) = Value for an individual separated occupancy on a floor.
- \( n \) = Number of separated occupancies on a floor.

Reason: This section as written is confusing and does not differentiate well between single occupancy buildings and multiple occupancy buildings. This proposal creates two equations to address this.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. Since 2017 the BCAC has held 6 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: https://www.iccsafe.org/codes-tech-support/codes/codedevelopment-process/building-code-actioncommittee-bcac.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This proposed code change is clarification of existing code language and neither adds to or decreases cost of construction.
2018 International Existing Building Code

Revise as follows:

1301.6.3 Compartmentation. Evaluate the compartments created by fire barriers or horizontal assemblies which comply with Sections 1301.6.3.1 and 1301.6.3.2 and 1301.6.3.3 and which are exclusive of the wall elements considered under Sections 1301.6.4 and 1301.6.5. Conforming compartments shall be figured as the net area and do not include shafts, chases, stairways, walls, or columns. Using Table 1301.6.3, determine the appropriate compartmentation value (CV) and enter that value into Table 1301.7 under Safety Parameter 1301.6.3, Compartmentation, for fire safety, means of egress, and general safety.

<table>
<thead>
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<th>OCCUPANCY</th>
<th>CATEGORIES</th>
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<td>a</td>
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<td>Compartme nt size equal to or greater than 15,000 square feet</td>
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</table>

For SI: 1 square foot = 0.0929 m².

Add new text as follows:

1301.6.3.1 Categories. The categories for compartment separations are:

1. Category a—compartment size of 15,000 square feet or more.
2. Category b—maximum compartment size of 10,000 square feet.
3. Category c—maximum compartment size of 7,500 square feet.
4. Category d—maximum compartment size of 5,000 square feet.
5. Category e—maximum compartment size of 2,500 square feet.

Add new text as follows:

1301.6.3.1 1301.6.3.2 Wall construction. A wall used to create separate compartments shall be a fire barrier conforming to Section 707 of the International Building Code with a fire-resistance rating of not less than 2 hours. Where the building is not divided into more than one compartment, the compartment size shall be taken as the total floor area on all floors. Where there is more than one compartment within a story, each compartmented area on such story shall be provided with a horizontal exit conforming to Section 1026 of the International Building Code. The fire door serving as the horizontal exit between compartments shall be so installed, fitted, and gasketed that such fire door will provide a substantial barrier to the passage of smoke.

1301.6.3.2 1301.6.3.3 Floor/ceiling construction. A floor/ceiling assembly used to create compartments shall conform to Section 711 of the International Building Code and shall have a fire-resistance rating of not less than 2 hours.

Reason: This proposal is designed to correct an inconsistency in Table 1301.6.3. Currently, there is a hole in the size values for compartment size. There is no recognition of a fire compartment that is between 10,000 and 15,000 square feet.

1. Category a applies to 15,000 sq. ft. or larger
2. Category b applies to 10,000 sq. ft. or less
So what value is applied when the fire compartment is 12,000 square feet. It is not listed on the table and there is no guidance as to the value associated to this size. Obviously, it is better than 15,000 square feet, but is it the same value as 10,000 square feet.

Therefore, this proposal makes two revisions:

1. Moves the criteria out of the table header
2. Corrects the gap in compartment sizes

Moving the criteria out of the table header is an editorial change. But it is consistent with the format used in all the other tables in Chapter 13. It also allows for easier application and use of the table.

The gap between 10,000 and 15,000 square feet is resolved by adding Footnote a. Footnote a allows interpolation between categories. For example, consider a Group B occupancy with the largest compartment of 13,000 square feet. It does not fit into a category, it is between Category a – 15,000 square feet or more, and Category b – 10,000 square feet or less. The score for Category a is “0” and the score for Category b is “5”. By interpolation, the Group B compartment at 13,000 square feet receives a score of “2”. See the table below.

![Graph showing interpolation between compartment sizes](image)

**Cost Impact:** The code change proposal will decrease the cost of construction

This revision allows credit for compartment size between 10,000 and 15,000 square feet where no credit was giving previously.
**Proponent:** Ed Kulik, representing ICC Building Code Action Committee (bcac@iccsafe.org)

### 2018 International Existing Building Code

**1301.6.3 Compartmentation.** Evaluate the compartments created by fire barriers or horizontal assemblies which comply with Sections 1301.6.3.1 and 1301.6.3.2 and which are exclusive of the wall elements considered under Sections 1301.6.4 and 1301.6.5. Conforming compartments shall be figured as the net area and do not include shafts, chases, stairways, walls, or columns. Using Table 1301.6.3, determine the appropriate compartmentation value (CV) and enter that value into Table 1301.7 under Safety Parameter 1301.6.3, Compartmentation, for fire safety, means of egress, and general safety.

Revise as follows:

<table>
<thead>
<tr>
<th>OCCUPANCY</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1, A-3</td>
<td>0</td>
<td>6</td>
<td>10</td>
<td>14</td>
<td>18</td>
</tr>
<tr>
<td>A-2</td>
<td>0</td>
<td>4</td>
<td>10</td>
<td>14</td>
<td>18</td>
</tr>
<tr>
<td>A-4, B, E, S-2</td>
<td>0</td>
<td>5</td>
<td>10</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>F, M, R, S-1</td>
<td>0</td>
<td>4</td>
<td>10</td>
<td>16</td>
<td>22</td>
</tr>
</tbody>
</table>

For SI: 1 square foot = 0.0929 m².

a. For areas between categories, the determination of the compartmentation value obtained by linear interpolation shall be permitted.

**Reason:** This table when placed in the IEBC never carried over the footnote a that was found in the same table in the IBC Chapter 34. This question arises and this appears within the intent to allow interpolation.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. Since 2017 the BCAC has held 6 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: https://www.iccsafe.org/codes-tech-support/codes/codedevelopment-process/building-code-actioncommittee-bcac.

**Cost Impact:** The code change proposal will not increase or decrease the cost of construction
This proposed change is a coordination item between the IEBC and the IBC and neither adds to or decreases cost of construction.
**EB122-19**

IEBC®: TABLE 1301.6.3

**Proponent:** Jeffrey Harper, JENSEN HUGHES, representing JENSEN HUGHES (jharper@jensenhughes.com); Sean Donohue, representing JENSEN HUGHES (sdonohue@jensenhughes.com)

2018 International Existing Building Code

Revise as follows:

**TABLE 1301.6.3 COMPARTMENTATION VALUES**

<table>
<thead>
<tr>
<th>OCCUPANCY</th>
<th>aCompartment size equal to or greater than 15,000 square feet</th>
<th>bCompartment size of 10,000 square feet</th>
<th>cCompartment size of 7,500 square feet</th>
<th>dCompartment size of 5,000 square feet</th>
<th>eCompartment size of 2,500 square feet or less</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1, A-3</td>
<td>0</td>
<td>6</td>
<td>10</td>
<td>14</td>
<td>18</td>
</tr>
<tr>
<td>A-2</td>
<td>0</td>
<td>4</td>
<td>10</td>
<td>14</td>
<td>18</td>
</tr>
<tr>
<td>A-4, B, E, S-2</td>
<td>0</td>
<td>5</td>
<td>10</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>F, M, R, S-1</td>
<td>0</td>
<td>4</td>
<td>10</td>
<td>16</td>
<td>22</td>
</tr>
<tr>
<td>I-2</td>
<td>0</td>
<td>2</td>
<td>8</td>
<td>10</td>
<td>14</td>
</tr>
</tbody>
</table>

For SI: 1 square foot = 0.0929 m².

**Reason:** This table does not provide Group I-2 occupancies with any benefit of fire compartmentation. This should not be confused with 1301.6.20 which provides for smoke zones because 1301.6.3.1 clearly indicates the compartmentation is to be defined based on the use or presence of fire barriers having a fire rating of 2-hours or more. I-2 occupancy should be included on this table to remain consistent with the rest of the Performance Compliance Methods sections. Just as in 1301.6.20, I-2 occupancies on this table should be scored at zero for compartments that comply with 22,500 square feet. Although the code has gone to 40,000 SF compartment sizes for hospitals, this recognizes that nursing homes (I-2 Condition 1) are still at 22,500. There should not be a negative value for being larger than 22,500 SF because this is fire compartmentation, not smoke compartmentation.

**Cost Impact:** The code change proposal will not increase or decrease the cost of construction. This code provision will not increase cost and has a high likelihood of reducing cost by providing flexibility that does not currently exist in the code.
IEBC®: TABLE 1301.6.3

Proponent: Kevin Duerr-Clark, NYS Department of State, representing NYS Department of State (kevin.duerr-clark@dos.ny.gov); Ronald Stark, NYS Department of State, representing NYS Department of State (ronald.stark@dos.ny.gov)

2018 International Existing Building Code

Revise as follows:

<table>
<thead>
<tr>
<th>OCCUPANCY</th>
<th>CATEGORIES</th>
<th>aCompartment size equal to or greater than 15,000 square feet</th>
<th>bCompartment size of 10,000 square feet</th>
<th>cCompartment size of 7,500 square feet</th>
<th>dCompartment size of 5,000 square feet</th>
<th>eCompartment size of 2,500 square feet or less</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1, A-3</td>
<td>0 6 10 14 18</td>
<td>0 6 10 14 18</td>
<td>0 4 10 14 18</td>
<td>0 5 10 15 20</td>
<td>0 4 10 16 22</td>
<td></td>
</tr>
<tr>
<td>A-2</td>
<td>0 4 10 14 18</td>
<td>0 4 10 14 18</td>
<td>0 5 10 15 20</td>
<td>0 4 10 16 22</td>
<td>0 4 10 16 22</td>
<td></td>
</tr>
<tr>
<td>A-4, B, E, S-2</td>
<td>0 5 10 15 20</td>
<td>0 5 10 15 20</td>
<td>0 5 10 15 20</td>
<td>0 5 10 15 20</td>
<td>0 5 10 15 20</td>
<td></td>
</tr>
<tr>
<td>F, M, R, S-1</td>
<td>0 4 10 16 22</td>
<td>0 4 10 16 22</td>
<td>0 4 10 16 22</td>
<td>0 4 10 16 22</td>
<td>0 4 10 16 22</td>
<td></td>
</tr>
</tbody>
</table>

For SI: 1 square foot = 0.0929 m².

a. For compartment sizes between categories, values shall be obtained by linear interpolation.

Reason: The compartment sizes given in Table 1301.6.3 are neither consecutive, not all inclusive. The table does not provide guidance for compartment sizes outside of the values given. This leads some applicants to advocate for the higher value and some code officials to argue in favor of the more restrictive lower values. In some instances, the value increase is as high as 6 points, which could make a considerable difference in the Summary Sheet results of Table 1301.7.

To resolve this discrepancy and ensure uniform enforcement, Table 1301.6.3 should include a footnote similar to those found in Tables 1301.6.12 and 1301.6.16, indicating that values between categories shall be obtained by linear interpolation.

The IEBC Commentary states that “the evaluation of the compartments contained in an existing building is a linear function allowing interpolation between the various categories. This approach allows the compartmentation value to increase or decrease consistent with the actual changes in compartment sizes.” However, the language of neither Section 1301.6.3, nor Table 1301.6.3 reflects this intent and therefore, a footnote is needed to remove the ambiguity and facilitate enforcement.

Cost Impact: The code change proposal will not increase or decrease the cost of construction.

This proposal is to provide clarification consistent with the IEBC Commentary and does not have a cost implication.
Proponent: Gregory Nicholls, representing American Institute of Architects (gnicholls@preview-group.com)

2018 International Existing Building Code

Revise as follows:

1301.6.4 Tenant and dwelling unit separations. Evaluate the fire-resistance rating of floors and walls separating tenants, including dwelling units, and not evaluated under Sections 1301.6.3 and 1301.6.5. Group I-2 occupancies shall evaluate the rating of the separations between patient sleeping rooms.

Under the categories and occupancies in Table 1301.6.4, determine the appropriate value and enter that value in Table 1301.7 under Safety Parameter 1301.6.4, Tenant and Dwelling Unit Separation, for fire safety, means of egress, and general safety. The value shall be zero for single tenant buildings, and buildings without dwelling units.

Reason: The current code text gives no direction on what the appropriate scoring category is for non-residential, single tenant buildings. Since the categories only have partition ratings, the default would penalize the building scores without any justification that having a single tenant is less safe. The added text gives an appropriate score of zero, which does not penalize the building but also does not give points to achieve a passing score.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

The code change clarifies the disposition of buildings without dwelling units or multiple tenants. There is no current cost to modify.

Proposal # 5292
Proponent: Gregory Nicholls, representing American Institute of Architects (gnicholls@preview-group.com)

2018 International Existing Building Code

Revise as follows:

1301.6.5.1 Categories. The categories for corridor walls are:

1. Category a—No fire partitions; incomplete fire partitions; no doors; or doors not self-closing.
2. Category b—Less than 1-hour fire-resistance rating or not constructed in accordance with Section 708.4 of the International Building Code.
3. Category c—1-hour to less than 2-hour fire-resistance rating, with doors conforming to Section 716 of the International Building Code or without corridors as permitted by Section 1020 of the International Building Code.
4. Category d—2-hour or greater fire-resistance rating, with doors conforming to Section 716 of the International Building Code.

Reason: The IBC does not require corridors for any project, it only has criteria for corridors when they are proposed. As written, the current code text makes no sense, and nowhere in Section 1020 IBC does it say where corridors are permitted. Further, the current text does not say what to do when a corridor does not have to have a rating, leading to some interpretations that ALL projects using the Performance Compliance method have to have corridors, no matter the occupancy or occupant load.

This appears to be the result of a historical error in editing, one that occurred without a code change, done by ICC staff. Back in the 1995 Basic Building Code (BOCA), the code section for corridors, category c used to read:

Fire partitions having a fire-resistance rating from 1 hour to less than 2 hours, with doors conforming to Section 1011.4.2 or without corridors as required by Section 1011.4. Section 1011.4 OBC (1995) was entitled “Enclosure” and only addressed corridors if they were provided (and that was when section titles sort of meant something). When this was transferred to the IBC, the code section on enclosure was no longer worded the same, and was changed to “Construction”. Along with this change in section title the reference from Chapter 34 was to the entire Section on corridors, so the distinction between corridors permitted without a fire-resistance rating went to without corridors.

Compliance Alternatives are not meant to do either of two things:

1. To require corridors in order to comply with one of the categories, even when none are proposed;
2. To require corridors allowed to be non-fire-resistance rated by Section 1020 to have to be 1 hour rated to keep from being severely punished by negative points.

It should be noted that the scoring for all occupancies in category c is zero except for I-2, which is typical in the 3412 scoring system for meeting code for non-3412 projects but not exceeding standard code. In other words, a score of zero does not mean the level of performance is penalized, but without a positive score will not provide any points to pass.

Cost Impact: The code change proposal will decrease the cost of construction

By allowing buildings to not have corridors, and allowing the option to comply without negative points will decrease the cost of compliance.

Proposal #: 5293
2018 International Existing Building Code

Revise as follows:

1301.6.7.1 Categories. The categories for HVAC systems are:

1. Category a—Plenums not in accordance with Section 602 of the International Mechanical Code. -10 points.
2. Category b—Air movement in egress elements not in accordance with Section 1020.5 of the International Building Code. -5 points.
3. Category c—Both Categories a and b are applicable. -15 points.
4. Category d—Compliance of the HVAC system with Section 1020.5 of the International Building Code and Section 602 of the International Mechanical Code; or where HVAC systems do not contain ductwork. 0 points.
5. Category e—Systems serving one story; or a central boiler/chiller system without ductwork connecting two or more stories. +5 points.

Reason: The stated intent of Section 1301.6.7 is to “evaluate the ability of the HVAC system to resist the movement of smoke and fire.” Points are awarded to systems with a limited ability to spread smoke and fire, such as systems serving only one story. However, the code is silent regarding instances where heating and air conditioning systems utilizing ductwork are not proposed, thus eliminating the risk of spreading smoke and fire. The silence leads to confusion and disagreement among code users on whether to interpret that those instances constitute a category “d” or a category “e”.

Without heating and air conditioning ductwork, the degree of code compliance and fire safety is equal to or greater than category “e” and points should be gained. That change in code language is proposed under the title “HVAC System Categories I.” However, should that previous proposal not be approved, the code language should at least mention the lack of ductwork as a condition in category “d” and eliminate the ambiguity.

Cost Impact: The code change proposal will increase the cost of construction

This change addresses a silent provision in the code. There is no change if the provision was previously interpreted to constitute category “d”.

There is a small likelihood that it could increase the cost of construction if code users had interpreted the silent provision to constitute category “e”.

Proposal # 4211
2018 International Existing Building Code

Revise as follows:

1301.6.7.1 Categories. The categories for HVAC systems are:

1. Category a—Plenums not in accordance with Section 602 of the International Mechanical Code. -10 points.
2. Category b—Air movement in egress elements not in accordance with Section 1020.5 of the International Building Code. -5 points.
3. Category c—Both Categories a and b are applicable. -15 points.
4. Category d—Compliance of the HVAC system with Section 1020.5 of the International Building Code and Section 602 of the International Mechanical Code. 0 points.
5. Category e—Systems serving one story; or a central boiler/chiller system without ductwork connecting two or more stories; or where systems have no ductwork. +5 points.

Reason: The stated intent of Section 1301.6.7 is to “evaluate the ability of the HVAC system to resist the movement of smoke and fire.” Points are awarded to systems with a limited ability to spread smoke and fire, such as systems serving only one story. The code is silent regarding instances where the heating and air conditioning systems do not utilize ductwork, thus eliminating the risk of spreading smoke and fire. Without heating and air conditioning ductwork, the degree of code compliance and fire safety is equal or greater than category “e” and points should be gained.

Cost Impact: The code change proposal will decrease the cost of construction
There is a small likelihood that points potentially gained by this code change would result in a decrease in cost. This is dependent on the total building score on Table 1301.7 and other decisions made by the applicant.
EB128-19

2018 International Existing Building Code

Revise as follows:

1301.6.12 Dead ends. In spaces required to be served by more than one means of egress, evaluate the length of the exit access travel path in which the building occupants are confined to a single path of travel. Under the categories and occupancies in Table 1301.6.12, determine the appropriate value and enter that value into Table 1301.7 under Safety Parameter 1301.6.12, Dead Ends, for means of egress and general safety.

TABLE 1301.6.12
DEAD-END VALUES

<table>
<thead>
<tr>
<th>OCCUPANCY</th>
<th>CATEGORIES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a</td>
</tr>
<tr>
<td>A-2, E</td>
<td>-2</td>
</tr>
<tr>
<td>I-2</td>
<td>-2</td>
</tr>
</tbody>
</table>

Reason:
For dead-end distances between categories, the dead-end value shall be obtained by linear interpolation based on the longest dead-end corridor.

1301.6.12.1 Categories. The categories for dead ends are:

1. Category a: Dead ends exceeding Category b.
2. Category b: Dead end not greater than 35 feet (10 670 mm) in nonsprinklered buildings or 70 feet (21 340 mm) in sprinklered buildings.
3. Category c: Dead end of not greater than 20 feet (6096 mm); or 50 feet (15 240 mm) in Group B, E, F, M, R-1, R-2, R-4 and S in accordance with Section 1020.4, Exception 2, of the International Building Code.
4. Category d: No dead ends; or ratio of length to width (l/w) is less than 2.5:1. Category d: Dead ends exceeding Category a.

Reason:
This code change accomplishes several things:

1. Table 1301.6.12 currently has failure modes at both ends of the table (Categories a and d). This is completely contrary to all of the other tables in Chapter 134. This revision places both failure modes as Categories a and b. This is consistent with the other tables in Chapter 13 and will reduce confusion in application of the table. As a result of revising the category order, Section 1301.6.12.1 is reorganized to match the table format.

2. The values for Group A-2 and E are identical to the scores for Groups A-1, A-3, A-4, B, F, M, R, and S. Therefore, the separate row for A-2 and E is deleted and these occupancies are moved into the row with the other occupancies.

3. Correlation of the new Category c with the current provisions in the IBC for new construction, otherwise the building will receive a deficit even though the building complies with the code. The current requirement states that only dead-end corridors in Group B occupancies can be up to 50 feet in length. However, the 2018 IBC allows dead-end corridors up to 50 feet in length in Group B, E, F, M, R-1, R-2, R-4, and S occupancies.

There is no change in the values applied from this table.

Cost Impact: The code change proposal will not increase or decrease the cost of construction.
This is editorial for clarity and correlation.
Proponent: Ed Kulik, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2018 International Existing Building Code

Revise as follows:

1301.6.16.1 Categories. The categories for mixed occupancies are:

1. Category a—Occupancies separated by minimum 1-hour fire barriers or minimum 1-hour horizontal assemblies, or both.
2. Category b—Separations between occupancies in accordance with Section 508.4 of the International Building Code.
3. Category c—Separations between occupancies having a fire-resistance rating of not less than twice the 1-hour, 2-hour, 3-hour or 4-hour fire-resistance ratings that are specified in Table 508.4, where that required by Section 508.4 of the International Building Code.

Reason: The original intent was to provide a benefit where a wall provided double the hourly rating required for some type of separation. The rewording is simply to not allow for a project to get points for a wall with a zero rating.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. Since 2017 the BCAC has held 6 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: https://www.iccsafe.org/codes-tech-support/codes/codedevelopment-process/building-code-actioncommittee-bcac.

Cost Impact: The code change proposal will not increase or decrease the cost of construction.

This is a rating system and design alternative, not a requirement.
2018 International Existing Building Code

Revise as follows:

1301.9.1 Mixed occupancies. For mixed occupancies, the following provisions shall apply:

1. Where the separation between mixed occupancies does not qualify for any category indicated in Section 1301.6.16, the mandatory safety scores for the occupancy with the lowest general safety score in Table 1301.8 shall be utilized (see Section 1301.6).

2. Where the separation between mixed occupancies qualifies for any category indicated in Section 1301.6.16, the mandatory safety scores for each occupancy shall be placed against the evaluation scores for the appropriate occupancy. An evaluation is not required for areas of the building with separated occupancies in accordance with Table 508.4 of the International Building Code in which there are no alterations or change of occupancy.

Reason: The code text is intended to address a condition with multiple occupancies that are being altered or changed in occupancy classification. It does not address the situation where only portions of the building within the building are being changed. This added text is make it clear that while the portions altered or changed can have multiple separated occupancies, this does not have any bearing for the separated areas outside the work areas being addressed by the performance method.

Cost Impact: The code change proposal will decrease the cost of construction

By clarifying what happens with partial change in occupancy and conditions of mixed occupancies within the separated areas that are proposed to change in occupancy, the cost to the remainder of the building is decreased.
EB131-19
IEBC®: TABLE 1301.6.20, 1301.6.20.1

Proponent: Jeffrey Harper, JENSEN HUGHES, representing JENSEN HUGHES (jharper@jensenhughes.com); Sean Donohue, representing JENSEN HUGHES (sdonohue@jensenhughes.com)

2018 International Existing Building Code
Revise as follows:

TABLE 1301.6.20
SMOKE COMPARTMENTATION VALUES

<table>
<thead>
<tr>
<th>OCCUPANCY</th>
<th>CATEGORIES&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a</td>
</tr>
<tr>
<td>A, B, E, F, M, R and S</td>
<td>0</td>
</tr>
<tr>
<td>I-2</td>
<td>0</td>
</tr>
</tbody>
</table>

For SI: 1 square foot = 0.093 m².

NP = Not Permitted.

a. For areas between categories, the smoke compartmentation value shall be obtained by linear interpolation.

1301.6.20.1 Categories. Categories for smoke compartment size are:

1. Category a-Smoke compartment size is equal to or less than 22,500 square feet (2092 m²) - in a Group I-2, Condition 1 occupancy; or less that 40,000 square feet (3716 m²) in a Group I-2, Condition 2 occupancy as prescribed by IBC 407.5.1.
2. Category b-Smoke compartment size is greater than 22,500 square feet (2092 m²) - in a Group I-2, Condition 1 occupancy.
3. Category c-Smoke compartment size is greater than 40,000 square feet (3716 m²) in a Group I-2, Condition 2 occupancy.
4. Category d-Smoke compartments are not provided.

Reason: The effect of this table as currently written is to either allow or disallow the use of the performance compliance method for Group I-2 occupancies. There is no middle ground to account for a deficient smoke compartment. I-2 occupancies that fall under category ‘b’ should not create an automatic fail (NP), but rather should be assigned a certain negative value. Being over the maximum smoke compartment size does not cause the NFPA 101-A FSES to fail automatically; and if the intent is to echo the process, then it should cause a similar scoring condition. Currently, FSES allows smoke compartments that are greater than that required by the applicable governing section of NFPA 101. Having category ‘b’ as automatic fail contradicts this intent. A value of -10 has been chosen to show that the importance of smoke compartmentation is on par with the inclusion of sprinkler protection.

Lastly, the table has been adjusted to reflect the difference between I-2 conditions 1 and 2 having different allowable smoke compartment sizes.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

This code provision will not increase cost and has a high likelihood of reducing cost by providing flexibility that does not currently exist in the code.

Proposal # 5477
2018 International Existing Building Code

Revise as follows:

### TABLE 1301.6.21.1
PATIENT ABILITY VALUES

<table>
<thead>
<tr>
<th>OCCUPANCY</th>
<th>CATEGORIES</th>
<th>a</th>
<th>b</th>
<th>c</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-2</td>
<td></td>
<td>+3</td>
<td>2</td>
<td>4.1</td>
</tr>
</tbody>
</table>

### TABLE 1301.6.21.2
PATIENT CONCENTRATION VALUES

<table>
<thead>
<tr>
<th>OCCUPANCY</th>
<th>CATEGORIES</th>
<th>a</th>
<th>b</th>
<th>c</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-2</td>
<td></td>
<td>+3</td>
<td>2</td>
<td>4.1</td>
</tr>
</tbody>
</table>

### TABLE 1301.6.21.3
ATTENDANT-TO-PATIENT RATIO VALUES

<table>
<thead>
<tr>
<th>OCCUPANCY</th>
<th>CATEGORIES</th>
<th>a</th>
<th>b</th>
<th>c</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-2</td>
<td></td>
<td>+3</td>
<td>2</td>
<td>4.1</td>
</tr>
</tbody>
</table>

**Reason:** The point values for categories ‘a’ and ‘c’ in these three tables were incorrectly arranged during the original code change process and are not providing the higher score for what is the better situation and should be reversed in each of the three tables. In Table 1301.6.21.1, Category ‘a’ states “patients are capable of self-preservation without assistance.” On the other hand, category ‘c’ states that “patients cannot be evacuated or relocated.” Regarding means of egress and general safety, patient’s ability to be mobile should be awarded more points. In Table 1301.6.21.2, Category ‘a’ states “smoke compartment has 1 to 10 patients.” Category ‘c’, on the other hand, states “smoke compartment has more than 40 patients.” The more patients there are in a single compartment, the worse it is in regard to means of egress and general safety. Thus, category ‘c’ should be awarded less points, having a higher concentration of patients. And finally in Table 1301.6.21.3, Category ‘a’ states “attendant-to-patient concentration is 1:5.” Category ‘c’ states “attendant-to-patient concentration is greater than 1:10 or no patients.” When it comes to means of egress and general safety, having a smaller attendant-to-patient ratio is more beneficial when compared to a larger ratio. Thus, category ‘a’ should be awarded more points as it has the smallest ratio.

**Cost Impact:** The code change proposal will not increase or decrease the cost of construction. This code provision will not increase cost and has a high likelihood of reducing cost by providing flexibility that does not currently exist in the code.
**2018 International Existing Building Code**

Add new definition as follows:

**WILDLAND-URBAN INTERFACE AREA.** That geographical area where structures and other human development meets or intermingles with wildland or vegetative fuels.

Add new text as follows:

1402.8 Wildland-Urban Interface Areas. If moved into a wildland-urban interface area, buildings shall comply with the International Wildland-Urban Interface Code as applicable.

Exception: Buildings previously located in a wildland-urban interface area or moved within a wildland-urban interface area.

Reason: The wildland-urban interface code provides additional building standards for buildings subjected to fire hazards within a wildland-urban interface area and as a result are subject the increased fire risk when relocated into such an area. The Scope of Section 101.2 of the IWUIC includes moved buildings. This code change merely correlates the two codes. The alterations Sections are not proposed to be amended nor is an exception being added for historical buildings to allow local jurisdictions to determine whether to exempt their historical resources or exterior building alterations from from compliance. It makes no sense that if a building is moved to a vacant lot that a site built adjacent building is required to satisfy WUI regulations but not the relocated building.

Cost Impact: The code change proposal will increase the cost of construction

By moving a building into a wui area the exterior roof, walls and openings may require upgrading. However the cost of the enhanced protection will provide a community benefit since in the WUI it is not unusual for conflagration hazards to occur when non compliant buildings burn and expose compliant buildings to hazards that they were not quite designed for since exterior fire fighting supression may not be available to control the non-compliant building.
EB134-19

IEBC®: [A] 101.4.2, CHAPTER 16 (New), 1601.1 (New), 1601.2 (New), 1601.3 (New), 1601.4 (New), 1601.4.1 (New), 1601.4.2 (New), 1601.4.3 (New)

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

2018 International Existing Building Code

Revise as follows:

[A] 101.4.2 Buildings previously occupied. The legal occupancy of any building existing on the date of adoption of this code shall be permitted to continue without change, except as is specifically covered in Chapter 16 of this code, the International Fire Code, or the International Property Maintenance Code, or as is deemed necessary by the code official for the general safety and welfare of the occupants and the public.

Add new text as follows:

CHAPTER 16 CONSTRUCTION REQUIREMENTS FOR EXISTING BUILDINGS

1601.1 Scope The provisions of this chapter shall apply to existing buildings constructed prior to the adoption of this code.

1601.2 Intent. The intent of this chapter is to provide a minimum degree of fire and life safety to persons occupying existing buildings by providing minimum construction requirements where such existing buildings do not comply with the minimum requirements of the International Building Code.

1601.3 Compliance. Existing buildings shall comply with not less than the minimum provisions specified in Chapter 11 of the International Fire Code and the International Property Maintenance Code prior to the application of the requirements in the International Existing Building Code.

1601.4 Owner notification. When a building is found to be in noncompliance with Section 1601.3, the code official shall duly notify the owner of the building or owner’s authorized agent. Upon receipt of such notice, the owner or owner's authorized agent shall, subject to the following time limits, take necessary actions to comply with the provisions of this chapter.

1601.4.1 Construction documents. Construction documents necessary to comply with Section 1601.3 shall be completed and submitted within a time schedule approved by the code official.

1601.4.2 Completion of work. Work necessary to comply with this chapter shall be completed within a time schedule approved by the code official.

1601.4.3 Extension of time. The code official is authorized to grant necessary extensions of time where it can be shown that the specified time periods are not physically practical or pose an undue hardship. The granting of an extension of time for compliance shall be based on the showing of good cause and subject to the filing of an acceptable systematic plan of correction with the code official.

Reason: The IEBC, as expressly stated in the scope (Section 101.2) only applies when work is being done. It does not establish the minimum requirements for existing buildings. The International Fire Code, Chapter 11, establishes the minimum threshold of existing buildings.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This proposal just clarifies the intent of how the code should be enforced. There is no impact to cost.

Proposal # 5541
EB135-19


Proponent: Michael Fillion, representing National Council of Structural Engineers Associations (mrf.structure@verizon.net)

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

2018 International Existing Building Code
Revise as follows:

301.1 General. The repair, alteration, change of occupancy, addition or relocation of all existing buildings shall comply with Section 301.2, 301.3, or 301.4. Structural work shall comply with Chapter 16.

301.3 Alteration, addition or change of occupancy. The alteration, addition or change of occupancy of all existing buildings shall comply with one of the methods listed in Section 301.3.1, 301.3.2 or 301.3.3 as selected by the applicant. Sections 301.3.1 through 301.3.3 shall not be applied in combination with each other.

   Exception: Subject to the approval of the code official, alterations complying with the laws in existence at the time the building or the affected portion of the building was built shall be considered in compliance with the provisions of this code. New structural members added as part of the alteration shall comply with the International Building Code. This exception shall not apply to alterations that constitute substantial improvement in flood hazard areas, which shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable. This exception shall not apply to the structural provisions of Chapter 16, or to the structural provisions of Sections 706, 806 and 906.

Add new text as follows:

SECTION 1601
ADMINISTRATION

[BS] 1601.1 Scope. The provisions of this chapter shall govern the structural design of repairs, alterations, changes of occupancy, additions or relocations of all existing buildings, structures and portions thereof regulated by this code

Revise as follows:

[BS] 507.3 1602 Flood hazard areas. Within flood hazard areas established in accordance with Section 1612.3 of the International Building Code, or Section R322 of the International Residential Code, as applicable, where the work proposed constitutes substantial improvement, the building shall be brought into compliance with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.

   Exception: Historic buildings meeting any of the following criteria need not be brought into compliance:

   1. Listed or preliminarily determined to be eligible for listing in the National Register of Historic Places.
   2. Determined by the Secretary of the U.S. Department of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined to qualify as an historic district.
   3. Designated as historic under a state or local historic preservation program that is approved by the Department of Interior.

Add new text as follows:

SECTION 1602
GENERAL PROVISIONS

[BS] 1602.1 Existing Materials. Use of existing materials shall comply with section 302.4.

[BS] 1602.2 New and replacement materials. New and replacement materials shall comply with section 302.5.
Revise as follows:

[BS] 303.3.4.1602.2.1 New structural members and connections. New structural members and connections shall comply with the detailing provisions of the International Building Code for new buildings of similar structure, purpose and location.

Exception: Where alternative design criteria are specifically permitted.

SECTION 303 1603

STRUCTURAL DESIGN LOADS ANDEVALUATION AND EVALUATION AND DESIGN PROCEDURES

[BS] 303.3.1 Live loads. Where an addition or alteration does not result in increased design live load, existing gravity load-carrying structural elements shall be permitted to be evaluated and designed for live loads approved prior to the addition or alteration. If the approved live load is less than that required by Section 1607 of the International Building Code, the area designated for the nonconforming live load shall be posted with placards of approved design indicating the approved live load. Where the addition or alteration results in increased design live load, the live load required by Section 1607 of the International Building Code shall be used.

[BS] 303.3.2 Snow loads on adjacent buildings. Where an alteration or addition changes the potential snow drift effects on an adjacent building, the code official is authorized to enforce Section 7.12 of ASCE 7.

[BS] 303.3.3 Seismic evaluation and design procedures. Where required, seismic evaluation or design shall be based on the procedures and criteria in this section, regardless of which compliance method is used.

[BS] 303.3.4.1603.3.1 Compliance with full seismic forces. Where compliance requires the use of full seismic forces, the criteria shall be in accordance with one of the following:

1. One-hundred percent of the values in the International Building Code. Where the existing seismic force-resisting system is a type that can be designated as “Ordinary,” values of $R$, $\alpha$, and $C_f$ used for analysis in accordance with Chapter 16 of the International Building Code shall be those specified for structural systems classified as “Ordinary” in accordance with Table 12.2-1 of ASCE 7, unless it can be demonstrated that the structural system will provide performance equivalent to that of a “Detailed,” “Intermediate” or “Special” system.
2. ASCE 41, using a Tier 3 procedure and the two-level performance objective in Table 303.3.1-1603.3.1 for the applicable risk category.

[BS] TABLE 303.3.4.1603.3.1

PERFORMANCE OBJECTIVES FOR USE IN ASCE 41 FOR COMPLIANCE WITH FULL SEISMIC FORCES

<table>
<thead>
<tr>
<th>RISK CATEGORY (Based on IBC Table 1604.5)</th>
<th>STRUCTURAL PERFORMANCE LEVEL FOR USE WITH BSE-1N EARTHQUAKE HAZARD LEVEL</th>
<th>STRUCTURAL PERFORMANCE LEVEL FOR USE WITH BSE-2N EARTHQUAKE HAZARD LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Life Safety (S-3)</td>
<td>Collapse Prevention (S-5)</td>
</tr>
<tr>
<td>II</td>
<td>Life Safety (S-3)</td>
<td>Collapse Prevention (S-5)</td>
</tr>
<tr>
<td>III</td>
<td>Damage Control (S-2)</td>
<td>Limited Safety (S-4)</td>
</tr>
<tr>
<td>IV</td>
<td>Immediate Occupancy (S-1)</td>
<td>Life Safety (S-3)</td>
</tr>
</tbody>
</table>

[BS] 303.3.2.1603.3.2 Compliance with reduced seismic forces. Where seismic evaluation and design is permitted to use reduced seismic forces, the criteria used shall be in accordance with one of the following:

1. The International Building Code using 75 percent of the prescribed forces. Values of $R$, $\alpha$, and $C_f$ used for analysis shall be as specified in Section 303.3.4.1603.3.1 of this code.
2. Structures or portions of structures that comply with the requirements of the applicable chapter in Appendix A as specified in Items 2.1 through 2.4 and subject to the limitations of the respective Appendix A chapters shall be deemed to comply with this section.
   2.1. The seismic evaluation and design of unreinforced masonry bearing wall buildings in Risk Category I or II are permitted to be based on the procedures specified in Appendix Chapter A1.
   2.2. Seismic evaluation and design of the wall anchorage system in reinforced concrete and reinforced masonry wall buildings with flexible diaphragms in Risk Category I or II are permitted to be based on the procedures specified in Chapter A2.
   2.3. Seismic evaluation and design of cripple walls and sill plate anchorage in residential buildings of light-frame wood construction in Risk Category I or II are permitted to be based on the procedures specified in Chapter A3.
   2.4. Seismic evaluation and design of soft, weak, or open-front wall conditions in multiple-unit residential buildings of wood construction in Risk Category I or II are permitted to be based on the procedures specified in Chapter A4.
3. ASCE 41, using the performance objective in Table 303.3.2-1603.3.2 for the applicable risk category.

[BS] TABLE 303.3.2.1603.3.2

PERFORMANCE OBJECTIVES FOR USE IN ASCE 41 FOR COMPLIANCE WITH REDUCED SEISMIC FORCES
RISK CATEGORY (Based on IBC Table 1604.5)  | STRUCTURAL PERFORMANCE LEVEL FOR USE WITH BSE-1E EARTHQUAKE HAZARD LEVEL | STRUCTURAL PERFORMANCE LEVEL FOR USE WITH BSE-2E EARTHQUAKE HAZARD LEVEL
---|---|---
I | Life Safety (S-3). See Note a | Collapse Prevention (S-5)
II | Life Safety (S-3). See Note a | Collapse Prevention (S-5)
III | Damage Control (S-2). See Note a | Limited Safety (S-4). See Note b
IV | Immediate Occupancy (S-1) | Life Safety (S-3). See Note c

a. For Risk Categories I, II and III, the Tier 1 and Tier 2 procedures need not be considered for the BSE-1E earthquake hazard level.
b. For Risk Category III, the Tier 1 screening checklists shall be based on the Collapse Prevention, except that checklist statements using the Quick Check provisions shall be based on MS-factors that are the average of the values for Collapse Prevention and Life Safety.
c. For Risk Category IV, the Tier 1 screening checklists shall be based on Collapse Prevention, except that checklist statements using the Quick Check provisions shall be based on MS-factors for Life Safety.

SECTION 304 1604
IN-SITU LOAD TESTS

[BS] 304.1 1604.1 General. Where used, in-situ load tests shall be conducted in accordance with Section 1708 of the International Building Code.

SECTION 405 1605
STRUCTURAL REPAIRS

[BS] 405.1 1605.1 General. Structural repairs shall be in compliance with this section and Section 401.2.

[BS] 405.2 1605.2 Repairs to damaged buildings. Repairs to damaged buildings shall comply with this section.

[BS] 405.2.1 1605.2.1 Repairs for less than substantial structural damage. Unless otherwise required by this section, for damage less than substantial structural damage, the damaged elements shall be permitted to be restored to their predamage condition.

[BS] 405.2.1.1 1605.2.1.1 Snow damage. Structural components whose damage was caused by or related to snow load effects shall be repaired, replaced or altered to satisfy the requirements of Section 1608 of the International Building Code.

[BS] 405.2.2 1605.2.2 Disproportionate earthquake damage. A building assigned to Seismic Design Category D, E or F that has sustained disproportionate earthquake damage shall be subject to the requirements for buildings with substantial structural damage to vertical elements of the lateral force-resisting system.

[BS] 405.2.3 1605.2.3 Substantial structural damage to vertical elements of the lateral force-resisting system. A building that has sustained substantial structural damage to the vertical elements of its lateral force-resisting system shall be evaluated in accordance with Section 405.2.3.1, and either repaired in accordance with Section 405.2.3.2 or repaired and retrofitted in accordance with Section 405.2.3.3, depending on the results of the evaluation.

Exceptions:
1. Buildings assigned to Seismic Design Category A, B or C whose substantial structural damage was not caused by earthquake need not be evaluated or retrofitted for load combinations that include earthquake effects.
2. One- and two-family dwellings need not be evaluated or retrofitted for load combinations that include earthquake effects.

[BS] 405.2.3.1 Evaluation. The building shall be evaluated by a registered design professional, and the evaluation findings shall be submitted to the code official. The evaluation shall establish whether the damaged building, if repaired to its predamage state, would comply with the provisions of the International Building Code for load combinations that include wind or earthquake effects, except that the seismic forces shall be the reduced seismic forces.

[BS] 405.2.3.2 1605.2.3.2 Extent of repair for compliant buildings. If the evaluation establishes that the building in its predamage condition complies with the provisions of Section 405.2.3.1, then the damaged elements shall be permitted to be restored to their predamage condition.

[BS] 405.2.3.3 1605.2.3.3 Extent of repair for noncompliant buildings. If the evaluation does not establish that the building in its predamage condition complies with the provisions of Section 405.2.3.1, then the building shall be retrofitted to comply with the provisions of this section. The wind loads for the repair and retrofit shall be those required by the building code in effect at the time of original construction, unless the damage was caused by wind, in which case the wind loads shall be in accordance with the International Building Code. The seismic loads for this retrofit design shall be those required by the building code in effect at the time of original construction, but not less than the reduced seismic forces.
[BS] 405.2-4.1 1605.2.4 Substantial structural damage to gravity load-carrying components. Gravity load-carrying components that have sustained substantial structural damage shall be rehabilitated to comply with the applicable provisions for dead and live loads in the International Building Code. Snow loads shall be considered if the substantial structural damage was caused by or related to snow load effects. Undamaged gravity load-carrying components that receive dead, live or snow loads from rehabilitated components shall also be rehabilitated if required to comply with the design loads of the rehabilitation design.

[BS] 405.2-4.1 1605.2.4.1 Lateral force-resisting elements. Regardless of the level of damage to vertical elements of the lateral force-resisting system, if substantial structural damage to gravity load-carrying components was caused primarily by wind or seismic effects, then the building shall be evaluated in accordance with Section 405.2.4.1 and, if noncompliant, retrofitted in accordance with Section 405.2.3.3.

Exceptions:

1. Buildings assigned to Seismic Design Category A, B, or C whose substantial structural damage was not caused by earthquake need not be evaluated or retrofitted for load combinations that include earthquake effects.
2. One- and two-family dwellings need not be evaluated or retrofitted for load combinations that include earthquake effects.

[BS] 405.2-4.5 1605.2.5 Flood hazard areas. In flood hazard areas, buildings that have sustained substantial damage shall be brought into compliance with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.

Add new text as follows:

1606 ADDITIONS

1606.1 General Additions shall comply with section 502.1 and this section.

Revise as follows:

[BS] 409.3 1606.2 Flood hazard areas. Additions and foundations in flood hazard areas shall comply with the following requirements:

1. For horizontal additions that are structurally interconnected to the existing building:
   1.1. If the addition and all other proposed work, when combined, constitute substantial improvement, the existing building and the addition shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.
   1.2. If the addition constitutes substantial improvement, the existing building and the addition shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.
2. For horizontal additions that are not structurally interconnected to the existing building:
   2.1. The addition shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.
   2.2. If the addition and all other proposed work, when combined, constitute substantial improvement, the existing building and the addition shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.
3. For vertical additions and all other proposed work that, when combined, constitute substantial improvement, the existing building shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.
4. For a raised or extended foundation, if the foundation work and all other proposed work, when combined, constitute substantial improvement, the existing building shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.
5. For a new foundation or replacement foundation, the foundation shall comply with Section 1612 of the International Building Code or Section R322 of the International Residential Code, as applicable.

[BS] 409.3-1 1606.3 Disproportionate earthquake damage. A building assigned to Seismic Design Category D, E or F that has sustained disproportionate earthquake damage shall be subject to the requirements for buildings with substantial structural damage to vertical elements of the lateral force-resisting system.

[BS] 409.4-1 1606.4 Existing structural elements carrying gravity load. Any existing gravity load-carrying structural element for which an addition and its related alterations cause an increase in design dead, live or snow load, including snow drift effects, of more than 5 percent shall be replaced or altered as needed to carry the gravity loads required by the International Building Code for new structures. Any existing gravity load-carrying structural element whose vertical load-carrying capacity is decreased as part of the addition and its related alterations shall be considered to be an altered element subject to the requirements of Section 502.3-1.1607.2. Any existing element that will form part of the lateral load path for any part of the addition shall be considered to be an existing lateral load-carrying structural element subject to the requirements of Section 502.3-1.1606.5.

Exception: Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the existing building and the addition together comply with the conventional light-frame construction methods of the International Building Code or the provisions of the International Residential Code.
[BS] 509.5 1606.5 Existing structural elements carrying lateral load. Where the addition is structurally independent of the existing structure, existing lateral load-carrying structural elements shall be permitted to remain unaltered. Where the addition is not structurally independent of the existing structure, the existing structure and its addition acting together as a single structure shall be shown to meet the requirements of Sections 1609 and 1613 of the International Building Code using full seismic forces.

Exceptions:

1. Any existing lateral load-carrying structural element whose demand-capacity ratio with the addition considered is not more than 10 percent greater than its demand-capacity ratio with the addition ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces in accordance with Sections 1609 and 1613 of the International Building Code. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces and capacities shall account for the cumulative effects of additions and alterations since original construction.

2. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the existing building and the addition together comply with the conventional light-frame construction methods of the International Building Code or the provisions of the International Residential Code.

Add new text as follows:

1606.6 Storm shelters. Storm shelters shall comply with section 1106.

1607 ALTERATIONS

1607.1 General Alterations shall comply with section 503.1 and this section.

Revise as follows:

[BS] 509.3 1607.2 Existing structural elements carrying gravity load. Any existing gravity load-carrying structural element for which an alteration causes an increase in design dead, live or snow load, including snow drift effects, of more than 5 percent shall be replaced or altered as needed to carry the gravity loads required by the International Building Code for new structures. Any existing gravity load-carrying structural element whose gravity load-carrying capacity is decreased as part of the alteration shall be shown to have the capacity to resist the applicable design dead, live and snow loads including snow drift effects required by the International Building Code for new structures.

Exceptions:

1. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the altered building complies with the conventional light-frame construction methods of the International Building Code or the provisions of the International Residential Code.

2. Buildings in which the increased dead load is due entirely to the addition of a second layer of roof covering weighing 3 pounds per square foot (0.1437 kN/m²) or less over an existing single layer of roof covering.

[BS] 706.2 1607.2.1 Structural and construction loads. Structural roof components shall be capable of supporting the roof-covering system and the material and equipment loads that will be encountered during installation of the system.

[BS] 509.4 1607.3 Existing structural elements carrying lateral load. Except as permitted by Section 509+H 1607.5, where the alteration increases design lateral loads, results in a prohibited structural irregularity as defined in ASCE 7, or decreases the capacity of any existing lateral load-carrying structural element, the structure of the altered building or structure shall meet the requirements of Sections 1609 and 1613 of the International Building Code. Reduced seismic forces shall be permitted.

Exception: Any existing lateral load-carrying structural element whose demand-capacity ratio with the alteration considered is not more than 10 percent greater than its demand-capacity ratio with the alteration ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces in accordance with Sections 1609 and 1613 of the International Building Code. Reduced seismic forces shall be permitted. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces and capacities shall account for the cumulative effects of additions and alterations since original construction.

[BS] 609.4+ 1607.4 Substantial structural alteration. Where the work area exceeds 50 percent of the building area and where work involves a substantial structural alteration, the lateral load-resisting system of the altered building shall satisfy the requirements of Sections 1609 and 1613 of the International Building Code. Reduced seismic forces shall be permitted.

Exceptions:

1. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes that are
altered based on the conventional light-frame construction methods of the International Building Code or in compliance with the provisions of the International Residential Code.

2. Where the intended alteration involves only the lowest story of a building, only the lateral load-resisting components in and below that story need comply with this section.

**[BS] 503.13 Voluntary lateral force-resisting system alterations.** Structural alterations that are intended exclusively to improve the lateral force-resisting system and are not required by other sections of this code shall not be required to meet the requirements of Section 1609 or Section 1613 of the International Building Code, provided that all of the following apply:

1. The capacity of existing structural systems to resist forces is not reduced.
2. New structural elements are detailed and connected to existing or new structural elements as required by the International Building Code for new construction.
3. New or relocated nonstructural elements are detailed and connected to existing or new structural elements as required by the International Building Code for new construction.
4. The alterations do not create a structural irregularity as defined in ASCE 7 or make an existing structural irregularity more severe.

**[BS] 503.14 Anchorages for new and altered buildings.** Where the intended alteration modifies a building to an extent that the building becomes assigned to a new Seismic Design Category or to Seismic Design Category D, E or F, the building shall be anchored, removed or altered to resist out-of-plane seismic forces, unless an evaluation demonstrates compliance of such items. Reduced seismic forces shall be permitted.

**[BS] 503.15 Anchorage for unreinforced masonry walls in major alterations.** Where the intended alteration involves only the lowest story of a building, only the lateral load-resisting components in and below that story need comply with this section.

**[BS] 503.16 Anchorage of existing wall anchorage.** Where the intended alteration involves only the lowest story of a building, only the lateral load-resisting components in and below that story need comply with this section.

**[BS] 503.17 Bracing for unreinforced masonry parapets on reroofing.** Where the intended alteration requires a permit for reroofing and involves removal of roofing materials from more than 50 percent of the roof area of a building assigned to Seismic Design Category D, E or F that has parapets constructed of unreinforced masonry, the work shall include installation of parapet bracing to resist out-of-plane seismic forces, unless an evaluation demonstrates compliance of such items. Reduced seismic forces shall be permitted.

**[BS] 503.18 Bracing for unreinforced masonry parapets in major alterations.** Where the intended alteration involves only the lowest story of a building, only the lateral load-resisting components in and below that story need comply with this section.

**[BS] 503.19 Anchorages for new and altered buildings.** Where the intended alteration modifies a building to an extent that the building becomes assigned to a new Seismic Design Category or to Seismic Design Category D, E or F, the building shall be anchored, removed or altered to resist out-of-plane seismic forces, unless an evaluation demonstrates compliance of such items. Reduced seismic forces shall be permitted.

**[BS] 503.20 Anchorage of existing wall anchorage.** Where the intended alteration involves only the lowest story of a building, only the lateral load-resisting components in and below that story need comply with this section.

**Exceptions:**

1. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes that are altered based on the conventional light-frame construction methods of the International Building Code or in compliance with the provisions of the International Residential Code.

2. Where the intended alteration involves only the lowest story of a building, only the lateral load-resisting components in and below that story need comply with this section.
Add new text as follows:

### 1608

#### CHANGE OF OCCUPANCY

**1608.1 General.** Change of occupancy shall comply with section 506.1 and this section.

Revise as follows:

**506.4.1 1608.2 Live loads.** Structural elements carrying tributary live loads from an area with a *change of occupancy* shall satisfy the requirements of Section 1607 of the International Building Code. Design live loads for areas of new occupancy shall be based on Section 1607 of the International Building Code. Design live loads for other areas shall be permitted to use previously approved design live loads.

*Exception:* Structural elements whose demand-capacity ratio considering the *change of occupancy* is not more than 5 percent greater than the demand-capacity ratio based on previously approved live loads need not comply with this section.

**506.4.2 1608.3 Snow and wind loads.** Where a *change of occupancy* results in a structure being assigned to a higher *risk category*, the structure shall satisfy the requirements of Sections 1608 and 1609 of the International Building Code for the new *risk category*.

*Exception:* Where the area of the new occupancy is less than 10 percent of the building area, compliance with this section is not required. The cumulative effect of occupancy changes over time shall be considered.

**506.4.3 1608.4 Seismic loads (seismic force-resisting system).** Where a *change of occupancy* results in a building being assigned to a higher *risk category*, the building shall satisfy the requirements of Section 1613 of the International Building Code for the new *risk category* using full seismic forces.

*Exceptions:*

1. Where the area of the new occupancy is less than 10 percent of the building area and the new occupancy is not assigned to *Risk Category IV*, compliance with this section is not required. The cumulative effect of occupancy changes over time shall be considered.
2. Where a change of use results in a building being reclassified from *Risk Category I* or *II* to *Risk Category III* and the seismic coefficient, SDS, is less than 0.33, compliance with this section is not required.
3. Unreinforced masonry bearing wall buildings assigned to *Risk Category III* and to Seismic Design Category A or B, shall be permitted to use Appendix Chapter A1 of this code.

**506.4.4 1608.5 Access to Risk Category IV.** Any structure that provides operational access to an adjacent structure assigned to *Risk Category IV* as the result of a *change of occupancy* shall itself satisfy the requirements of Sections 1608, 1609 and 1613 of the International Building Code. For compliance with Section 1613, International Building Code-level seismic forces shall be used. Where operational access to the *Risk Category IV* structure is less than 10 feet (3048 mm) from either an interior lot line or from another structure, access protection from potential falling debris shall be provided.

Add new text as follows:

### 1609

#### HISTORIC BUILDINGS

**1609.1 Report** A *historic building* undergoing alteration or *change of occupancy* shall be investigated and evaluated, and a report prepared and filed in accordance with section 1201.2.

Revise as follows:

[BS] **507.4 1609.2 Structural-General.** Historic buildings shall comply with the applicable structural provisions in this chapter.

*Exceptions:*

1. The *code official* shall be authorized to accept existing floors and existing live loads and to approve operational controls that limit the live load on any floor.
2. Repair of *substantial structural damage* is not required to comply with Sections 405.2.3, 1605.2.3, and 405.2.4–1605.2.4.
   *Substantial structural damage* shall be repaired in accordance with Section 405.2.1.

[BS] **405.2.1 1609.3 Dangerous conditions.** Conditions determined by the *code official* to be dangerous shall be remedied. Work shall not be required beyond what is required to remedy the dangerous condition.

Add new text as follows:
1609.4 Relocated historic buildings. Relocated historic buildings shall comply with section 1206 and this section.

1610

RELOCATED BUILDINGS

1610.1 General. Relocated buildings shall comply with section 1401.2 and this section.

Revise as follows:

[BS] 1610.2 Foundation. The foundation system of relocated buildings shall comply with the International Building Code or the International Residential Code as applicable.

[BS] 1610.2.1 Connection to the foundation. The connection of the relocated building to the foundation shall comply with the International Building Code or the International Residential Code as applicable.


Exceptions:

1. Detached one- and two-family dwellings and Group U occupancies where wind loads at the new location are not higher than those at the previous location.
2. Structural elements whose stress is not increased by more than 10 percent.

[BS] 1610.4 Seismic loads. Buildings shall comply with International Building Code or International Residential Code seismic provisions at the new location as applicable.

Exceptions:

1. Structures in Seismic Design Categories A and B and detached one- and two-family dwellings in Seismic Design Categories A, B and C where the seismic loads at the new location are not higher than those at the previous location.
2. Structural elements whose stress is not increased by more than 10 percent.

[BS] 1610.5 Snow loads. Structures shall comply with International Building Code or International Residential Code snow loads as applicable where snow loads at the new location are higher than those at the previous location.

Exception: Structural elements whose stress is not increased by more than 5 percent.

[BS] 1610.6 Flood hazard areas. If relocated or moved into a flood hazard area, structures shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.

[BS] 1610.7 Required inspection and repairs. The code official shall be authorized to inspect, or to require approved professionals to inspect at the expense of the owner, the various structural parts of a relocated building to verify that structural components and connections have not sustained structural damage. Any repairs required by the code official as a result of such inspection shall be made prior to the final approval.

Delete without substitution:

[BS] 401.3 Flood hazard areas. In flood hazard areas, repairs that constitute substantial improvement shall require that the building comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.

[BS] 502.3 Flood hazard areas. For buildings and structures in flood hazard areas established in Section 1612.3 of the International Building Code, or Section R322 of the International Residential Code, as applicable, any addition that constitutes substantial improvement of the existing structure shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design:

For buildings and structures in flood hazard areas established in Section 1612.3 of the International Building Code, or Section R322 of the International Residential Code, as applicable, any additions that do not constitute substantial improvement of the existing structure are not required to comply with the flood design requirements for new construction.

[BS] 503.2 Flood hazard areas. For buildings and structures in flood hazard areas established in Section 1612.3 of the International Building Code, or Section R322 of the International Residential Code, as applicable, any alterations that do not constitute substantial improvement of the existing structure shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design:

For buildings and structures in flood hazard areas established in Section 1612.3 of the International Building Code, or Section R322 of the International Residential Code, as applicable, any alterations that do not constitute substantial improvement of the existing structure are not required to comply with the flood design requirements for new construction.
**SECTION 706-STRUCTURAL**

**[BS]-706.1 General.** Where alteration work includes replacement of equipment that is supported by the building or where a reroofing permit is required, the provisions of this section shall apply:

**[BS]-706.2 Addition or replacement of roofing or replacement of equipment.** Any existing gravity load-carrying structural element for which an alteration causes an increase in design dead, live or snow load, including snow drift effects, of more than 5 percent shall be replaced or altered as needed to carry the gravity loads required by the International Building Code for new structures.

*Exceptions:*

1. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the altered building complies with the conventional light-frame construction methods of the International Building Code or the provisions of the International Residential Code.

2. Buildings in which the increased dead load is attributable to the addition of a second layer of roof covering weighing 3 pounds per square foot (0.1437 kN/m²) or less over an existing single layer of roof covering.

**[BS]-706.3 Additional requirements for reroof permits.** The requirements of this section shall apply to alteration work requiring reroof permits.

**[BS]-706.3.1 Bracing for unreinforced masonry bearing wall parapets.** Where a permit is issued for reroofing for more than 25 percent of the roof area of a building assigned to Seismic Design Category D, E or F that has parapets constructed of unreinforced masonry, the work shall include installation of parapet bracing unless an evaluation demonstrates compliance of such items:

- Reduced seismic forces shall be permitted.

**[BS]-706.3.2 Roof diaphragms resisting wind loads in high-wind regions.** Where roofing materials are removed from more than 50 percent of the roof diaphragm or section of a building located where the ultimate design wind speed, Vu, determined in accordance with Figure 1609.3(1) of the International Building Code, is greater than 115 mph (51 m/s) or in a special wind region, as defined in Section 1609 of the International Building Code, roof diaphragms, connections of the roof diaphragm to roof framing members, and roof-to-wall connections shall be evaluated for the wind loads specified in the International Building Code, including wind uplift. If the diaphragms and connections in their current condition are not capable of resisting 75 percent of those wind loads, they shall be replaced or strengthened in accordance with the loads specified in the International Building Code.

**SECTION 806-STRUCTURAL**

**[BS]-806.1 General.** Structural elements and systems within buildings undergoing Level 2 alterations shall comply with this section.

**[BS]-806.2 Existing structural elements carrying gravity loads.** Any existing gravity load-carrying structural element for which an alteration causes an increase in design dead, live or snow load, including snow drift effects, of more than 5 percent shall be replaced or altered as needed to carry the gravity loads required by the International Building Code for new structures. Any existing gravity load-carrying structural element whose gravity load carrying capacity is decreased as part of the alteration shall be shown to have the capacity to resist the applicable design dead, live and snow loads, including snow drift effects, required by the International Building Code for new structures.

*Exceptions:*

1. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the altered building complies with the conventional light-frame construction methods of the International Building Code or the provisions of the International Residential Code.

2. Buildings in which the increased dead load is attributable to the addition of a second layer of roof covering weighing 3 pounds per square foot (0.1437 kN/m²) or less over an existing single layer of roof covering.

**[BS]-806.3 Existing structural elements resisting lateral loads.** Except as permitted by Section 806.4, where the alteration increases design lateral loads, or where the alteration results in prohibited structural irregularity as defined in ASCE 7, or where the alteration decreases the capacity of any existing lateral load-carrying structural element, the structure of the altered building or structure shall meet the requirements of Sections 1609 and 1613 of the International Building Code. Reduced seismic forces shall be permitted.

*Exception:* Any existing lateral load-carrying structural element whose demand capacity ratio with the alteration considered is not more than 10 percent greater than its demand capacity ratio with the alteration ignored shall be permitted to remain unaltered. For purposes of calculating demand capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces in accordance with Sections 1609 and 1613 of the International Building Code. Reduced seismic forces shall be permitted. For purposes of this exception, comparisons of
The capacity of existing structural systems to resist forces is not reduced. Where the intended alteration involves only the lowest story of a building, only the lateral load resisting components in and below that story need comply with this section.

SECTION 906.2 STRUCTURAL

906.4 Voluntary lateral force-resisting system alterations. Structural alterations that are intended exclusively to improve the lateral force-resisting system and are not required by other sections of this code shall not be required to meet the requirements of Section 1609 or Section 1613 of the International Building Code, provided that the following conditions are met:

1. The capacity of existing structural systems to resist forces is not reduced.
2. New structural elements are detailed and connected to existing or new structural elements as required by the International Building Code for new construction.
3. New or relocated nonstructural elements are detailed and connected to existing or new structural elements as required by the International Building Code for new construction.
4. The alterations do not create a structural irregularity as defined in ASCE 7 or make an existing structural irregularity more severe.

906.5 Anchorages for unreinforced masonry walls. For any building assigned to Seismic Design Category D, E or F with a structural system that includes unreinforced masonry walls with a flexible roof diaphragm, the alteration work shall include installation of wall anchors at the roof line of all subject buildings and at the floor lines of unreinforced masonry buildings unless an evaluation demonstrates compliance of existing wall anchorage. Reduced seismic forces shall be permitted.

906.6 Bracing for unreinforced masonry parapets. Parapets constructed of unreinforced masonry in buildings assigned to Seismic Design Category C, D, E or F shall have bracing installed as needed to resist the reduced International Building Code level seismic forces in accordance with Section 303.3, unless an evaluation demonstrates compliance of such items. Use of reduced seismic forces shall be permitted.

906.7 Anchorage of unreinforced masonry partitions. Where the building is assigned to Seismic Design Category C, D, E or F, unreinforced masonry partitions and nonstructural walls within the work area and adjacent to egress paths from the work area shall be anchored, removed, or altered to resist out-of-plane seismic forces, unless an evaluation demonstrates compliance of such items. Use of reduced seismic forces shall be permitted.

SECTION 1006 STRUCTURAL

1006.1 Live loads. Structural elements carrying tributary live loads from an area with a change of occupancy shall satisfy the requirements of Section 1607 of the International Building Code. Design live loads for areas of new occupancy shall be based on Section 1607 of the International Building Code. Design live loads for other areas shall be permitted to use previously approved design live loads.

Exception: Structural elements whose demand-capacity ratio considering the change of occupancy is not more than 5 percent greater than the demand-capacity ratio based on previously approved live loads.

1006.2 Snow and wind loads. Where a change of occupancy results in a structure being assigned to a higher risk category, the structure shall satisfy the requirements of Sections 1608 and 1609 of the International Building Code for the new risk category.
Exception: Where the area of the new occupancy is less than 10 percent of the building area. The cumulative effect of occupancy changes over time shall be considered.

[BS] 1006.3 Seismic loads. Where a change of occupancy results in a building being assigned to a higher risk category, the building shall satisfy the requirements of Section 1613 of the International Building Code for the new risk category using full seismic forces.

Exceptions:

1. Where a change of use results in a building being reclassified from Risk Category I or II to Risk Category III and the seismic coefficient, SDS, is less than 0.33.
2. Where the area of the new occupancy is less than 10 percent of the building area and the new occupancy is not assigned to Risk Category IV. The cumulative effect of occupancy changes over time shall be considered.
3. Unreinforced masonry bearing wall buildings assigned to Risk Category III and to Seismic Design Category A or B shall be permitted to use Appendix Chapter A1 of this code.

[BS] 1006.4 Access to Risk Category IV. Any structure that provides operational access to an adjacent structure assigned to Risk Category IV as the result of a change of occupancy shall itself satisfy the requirements of Sections 1608, 1609 and 1613 of the International Building Code. For compliance with Section 1613, the full seismic forces shall be used. Where operational access to Risk Category IV is less than 10 feet (3048 mm) from either an interior lot line or from another structure, access protection from potential falling debris shall be provided.

SECTION 1103 STRUCTURAL

[BS] 1103.1 Additional gravity loads. Any existing gravity load-carrying structural element for which an addition and its related alterations cause an increase in design dead, live or snow load, including snow drift effects, of more than 5 percent shall be replaced or altered as needed to carry the gravity loads required by the International Building Code for new structures. Any existing gravity load-carrying structural element whose gravity load-carrying capacity is decreased as part of the addition and its related alterations shall be considered to be an altered element subject to the requirements of Section 1103.2. Any existing element that will form part of the lateral load path for any part of the addition shall be considered to be an existing lateral load-carrying structural element subject to the requirements of Section 1103.3.

Exception: Buildings of Group R occupancy with not more than five dwelling units or sleeping units used solely for residential purposes where the existing building and the addition together comply with the conventional light-frame construction methods of the International Building Code or the provisions of the International Residential Code.

[BS] 1103.2 Lateral force-resisting system. Where the addition is structurally independent of the existing structure, existing lateral load-carrying structural elements shall be permitted to remain unaltered. Where the addition is not structurally independent of the existing structure, the existing structure and its addition acting together as a single structure shall meet the requirements of Sections 1609 and 1613 of the International Building Code using full seismic forces.

Exceptions:

1. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the existing building and the addition comply with the conventional light-frame construction methods of the International Building Code or the provisions of the International Residential Code.
2. Any existing lateral load-carrying structural element whose demand-capacity ratio with the addition considered is not more than 10 percent greater than its demand-capacity ratio with the addition ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces in accordance with Sections 1609 and 1613 of the International Building Code. For purposes of this exception, comparisons of demand capacity ratios and calculation of design lateral loads, forces and capacities shall account for the cumulative effects of additions and alterations since original construction.

[BS] 1201.4 Flood hazard areas. In flood hazard areas, if all proposed work, including repairs, work required because of a change of occupancy, and alterations, constitutes substantial improvement, then the existing building shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.

Exception: If a historic building will continue to be a historic building after the proposed work is completed, then the proposed work is not considered a substantial improvement. For the purposes of this exception, a historic building is any of the following:

1. Listed or preliminarily determined to be eligible for listing in the National Register of Historic Places.
2. Determined by the Secretary of the U.S. Department of Interior to contribute to the historical significance of a registered historic district or a district preliminarily determined to qualify as a historic district.
3. Designated as historic under a state or local historic preservation program that is approved by the Department of Interior.

SECTION 1205
STRUCTURAL

[BS]-1205.1 General. Historic buildings shall comply with the applicable structural provisions for the work as classified in Chapter 4 or 5.

Exceptions:

1. The code official shall be authorized to accept existing floors and existing live loads and to approve operational controls that limit the live load on any floor.
2. Repair of substantial structural damage is not required to comply with Sections 405.2.3 and 405.2.4. Substantial structural damage shall be repaired in accordance with Section 405.2.1.

[BS]-1301.3.3 Compliance with flood hazard provisions. In flood hazard areas, buildings that are evaluated in accordance with this section shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable if the work covered by this section constitutes substantial improvement.

[BS]-1301.4.1 Structural analysis. The owner shall have a structural analysis of the existing building made to determine adequacy of structural systems for the proposed alteration, addition, or change of occupancy. The analysis shall demonstrate that the building with the work completed is capable of resisting the loads specified in Chapter 16 of the International Building Code.

Reason: Proposal is to collect all of the structural provisions into one chapter, chapter 16. Reasons as follows:

1. Current IEBC has structural provisions in triplicate - once for prescriptive method, once for work area method, and once for performance method (albeit structural provisions for performance method are short, but have also been source of unnecessary confusion in the past). This represents unnecessary text, and for each code cycle, unnecessary work to maintain the same provisions across methods - structural work should be independant of the methodology used to determine architectural compliance.

2. Collection of structural provisions in one chapter will lead to better understanding of the code provisions by practicing engineers, and hence improved compliance with the intent of the code.

3. Trend towards differentiation by trade is already started in past code cycle - accessibility requirements have been consolidated in one location in chapter 3 applicable to all methods of compliance.

4. Disconnection of structural work from other trades in the code may release other trades to find the most beneficial compliance methodology, independant of structural constraints.

This proposal is almost entirely a re-numbering and relocation of existing provisions, only substantive change is that the the same structural provisions from the current prescriptive and work area methods will apply to the performance method.

Current Chapter 16 - Reference Standards - should be revised to Chapter 17.

Cost Impact: The code change proposal will decrease the cost of construction
Proposal will generally have no effect on hard construction costs. Should have some beneficial effect on soft costs due to collection of structural design information in one chapter. For performance based designs, may decrease cost of construction since full compliance with IBC structural provisions would no longer be required.
**EB136-19**

IEBC®: [BS] A106.2.2.2, ASTM Chapter A0 (New)

**Proponent:** Michael Fillion, representing National Council of Structural Engineers Associations (mrf.structure@verizon.net)

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

### 2018 International Existing Building Code

Revise as follows:

[BS] A106.2.2.2 Concrete masonry units and structural clay load-bearing tile. Grouted or ungrouted hollow concrete masonry units shall be tested in accordance with ASTM C140. Grouted or ungrouted structural clay load-bearing tile shall be tested in accordance with ASTM C67.

Add new text as follows:

**C67-14: Test Methods of Sampling and Testing Brick and Structural Clay Tile**


Summary of the current problem and why it's unacceptable: The current version of the Code (in Section A106.2.2.2) requires testing on clay tile to be conducted in accordance with ASTM C34, but this standard does not include any testing information.

How the proposal solves it, in concept: The proposed language removes an inappropriate reference to ASTM C34, and replaces it with ASTM C67.

Point by point explanation and rationale for each change: Section A106.2.2.2 currently states the following: “Grouted or ungrouted structural clay load-bearing tile shall be tested in accordance with ASTM C34.” However, ASTM C34 is a material specification ([Standard Specification for Structural Clay Loadbearing Wall Tile](#)), not a test specification.

C34 states that tests on hollow clay tile shall be in conformance with ASTM C67 [Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile](#), which is the same test standard for modern clay brick. The C34 material specification standard is intended for new units that are not already installed into an assembly.

However, a significant percentage of clay brick masonry and hollow clay tile masonry buildings are historic structures. Since the manufacturing processes and typical firing temperatures used in the production of clay masonry units has changed dramatically over the past 100 years, it is unlikely that historic clay masonry materials will meet modern material specifications. Therefore, mandating testing of historic units for comparison with modern standards such as ASTM C67 can be problematic in some circumstances.

Nonetheless, testing of clay tile masonry units installed in old/historic masonry structures in accordance with this standard may be the best approach available at this time.

**Cost Impact:** The code change proposal will not increase or decrease the cost of construction

Proposal provides corrected ASTM reference, no change to design or construction.

**Staff Analysis:** The referenced standard, ASTM C67, is currently referenced in other 2018 I-codes.

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**Proposal # 5557**
2018 International Existing Building Code

Revise as follows:

[BS] A106.2.2.2 A106.2.3.1 Concrete masonry units and structural clay load-bearing tile. Grouted or ungrouted hollow concrete masonry units shall be tested in accordance with ASTM C140. Grouted or ungrouted structural clay load-bearing tile shall be tested in accordance with ASTM C34.

Reason: Note that cdpAccess system did not let us modify existing section, so we have submitted under the "new section" section. Proposed modification is to relocate current section A106.2.2.2 to A106.2.3.

Proposes that Section A106.2.2.2 be incorporated into the portion of the Code that addresses masonry testing.

Section A106.2.2.2 deals with masonry testing, but it is located under Section A106.2.2, which is entitled “Lay-up of walls”. The testing is not related to the lay-up of masonry walls.

The proposed change moves masonry testing of concrete block and structural clay load-bearing tile into the “Testing of masonry” section.

Section A106.2.2.2 deals entirely with testing of masonry materials. However, it is located under Section A106.2.2 “Lay-up of walls”. The more appropriate location for these testing requirements would be under Section A106.2.3 “Testing of masonry.”

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Proposal does not change code requirement, simply relocates code subsection to a more appropriate section.
EB138-19

IEBC®: [BS] A106.2.3.1, [BS] A106.2.3.2

Proponent: Michael Fillion, representing National Council of Structural Engineers Associations (mrf.structure@verizon.net)

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

2018 International Existing Building Code

Revise as follows:

[BS] A106.2.3.1 In-place mortar joint shear tests. Mortar joint shear test values, \( v_{50} \), shall be obtained by one of the following:

1. ASTM C1531.
2. For masonry walls that have high shear strength mortar, or where in-place testing is not practical because of crushing or other failure mode of the masonry, alternative procedures for testing shall be used in accordance with Section A106.2.3.2.

[BS] A106.2.3.2 Alternative test procedures for testing masonry. The tensile-splitting splitting tensile strength of existing masonry, \( f_{sp} \), or the prism strength of existing masonry, \( f_{pm} \), is permitted to be determined in accordance with ASTM C496 and calculated by the following equation:

\[
f_{sp} = \frac{0.494P}{a}
\]

(Equation A1-1)

Reason: Note that the cdpAccess system did not let us modify existing text, so it has been submitted under the "new text" section.

What the proposal does: Proposes that masonry tests be labeled so as to designate their intended purpose. Also, where necessary, the proposal changes the currently used test name so as to match the name in the referenced ASTM Standard.

Summary of the current problem and why it’s unacceptable: The text of various sections (A106.2.3.1, A106.2.3.3, and A106.2.3.5) refer to shear test results. However, the current section heading language does not make it clear which tests are intended to provide information about shear capacity. The alternative procedure is described as splitting tensile test, but if the bed joints are oriented at 45 degrees from horizontal, this is actually a diagonal tension test, which is also effectively a measure of shear capacity.

How the proposal solves it, in concept: The proposed language provides more specific information to the user of the Code regarding the purpose of each type of masonry testing.

Point by point explanation and rationale for each change: While the purpose and function of ASTM C1531 testing is relatively clearly defined by the text as providing information related to masonry joint shear capacity, the purpose of the splitting tensile testing is not as clearly described. The later sections of the text reference masonry “quality,” and the earlier sections describe “splitting tensile” behavior. Splitting tensile testing is generally associated with direct tensile capacity. However, if the test is conducted in the manner described in the 2015 IEBC (with bed joints oriented at a 45-degree angle), the failure will actually generally be a “diagonal tension” failure in the bed joint, which is more like a shear failure in a wall. There could be confusion by an engineer attempting to use this Code section regarding the purpose of the diagonal tension / splitting tensile testing as the section is currently written. Providing labels that describe the purpose of each type of test, and using test names that match those in the referenced ASTM Standards, would make the intent of each type of testing more clear.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

Proposed modification clarifies the relevant masonry testing.
2018 International Existing Building Code

Revise as follows:

[BS] A106.2.3.6 Minimum quality of masonry. Where the alternative procedures of Section A106.2.3.2 are used to determine masonry quality, the following minimums apply:

1. The minimum average value of tensile-splitting strength, \( f_{sp} \), as calculated by Equation A1-1 shall be 50 pounds per square inch (344.7 kPa).
2. Individual unreinforced masonry walls with average tensile-splitting strength of less than 50 pounds per square inch (344.7 kPa) shall be pointed and retested.
3. The lower-bound mortar strength \( f_{lm} \) is defined as the mean minus one standard deviation \( P_{D+L} \) of the tensile-splitting test values \( f_{sp} \).

Reason: What the proposal does: Clarifies the requirements for the alternative procedures for testing of existing masonry. It also corrects certain terminology used in the provision so that it correctly corresponds with the ASTM test method that the provision references.

Summary of the current problem and why it’s unacceptable: Section A106.2 of the IEBC includes what appear to be parallel sections regarding mortar testing and masonry testing. However, the labelling of these sections makes the intent of the code provisions unclear as to when and where the requirements of Section A106.2.3.6 are applicable.

Also, Section A106.2.3.2 references ASTM C496, which is titled Standard Test Method for Splitting Tensile Strength of Cylindrical Concrete Specimens. However, the terminology used throughout Section A106.2.3.6 incorrectly refers to tensile-splitting strength rather than to splitting tensile strength.

How the proposal solves it, in concept: The proposed language clarifies the relationship between Section A106.2.3.2 and Section A106.2.3.6. It also corrects terminology to correspond with the referenced ASTM standard.

Point by point explanation and rationale for each change: Section A106.2 of the IEBC includes what appear to be parallel sections regarding mortar testing and masonry testing. However, the labelling of these sections makes the intent of the code provisions unclear.

Section A106.2.3.1 is titled “In-place mortar tests.” The following section (A106.2.3.2) is titled “Alternative procedures for testing masonry” and describes splitting tensile strength testing. This labelling strongly suggests that the designer can choose either to test existing masonry mortar shear (using ASTM C1531), or the designer can elect to conduct splitting tensile testing. The language in Section A106.2.3.2 confirms that the splitting tensile test is an alternate approach.

However, later in the Section, there are two additional parallel paragraphs. The first is titled “A106.2.3.5 Minimum quality of mortar,” which appears to reference the mortar shear testing of A106.2.3.1. The following paragraph is labelled “A106.2.3.6 Minimum quality of masonry,” and it references minimum splitting tensile. However, the title and language of A106.2.3.6 do not indicate whether or not this is intended to be an alternate means of qualifying masonry or if, in fact, masonry must meet BOTH the minimum quality of mortar requirements of the previous section AND the minimum quality of masonry requirements of this section. If the intent is for this paragraph to provide an alternate approach to qualifying masonry, both the title and the introductory language should indicate that this paragraph is an alternate to the previous.

The reference to tensile-splitting strength is changed to splitting tensile strength to match ASTM C496 referenced in A106.2.3.2.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Proposal clarifies that certain acceptance criteria is only relevant for the alternative procedures for masonry testing.
2018 International Existing Building Code

[BS] A202.1 Scope. The provisions of this chapter shall apply to wall anchorage systems that resist out-of-plane forces and to collectors in existing reinforced concrete or reinforced masonry buildings with flexible diaphragms. Wall anchorage systems that were designed and constructed in accordance with the 1997 Uniform Building Code, 1999 BOCA National Building Code, 1999 Standard Building Code or the 2000 and subsequent editions of the International Building Code shall be deemed to comply with these provisions.

Reason: The proposal updates the benchmark codes to match ASCE 41-17. In ASCE 41-17, the latest edition of Seismic Evaluation and Retrofit of Existing Buildings, Table 3-2 gives benchmark codes deemed to comply with a safety-based retrofit such as that contemplated by Chapter A2. In Table 3-2, the only benchmarks given for tilt-up (PC1, PC1A) and reinforced masonry (RM1) structural systems are the 1997 UBC and 2000 IBC. Buildings designed with the NBC or SBC are not benchmarked.

Cost Impact: The code change proposal will not increase or decrease the cost of construction Tilt-up or 1-story CMU buildings designed with the 1999 NBC or 1999 SBC that are not also in compliance with the 2000 IBC will no longer be benchmarked and therefore might be subject to retrofit costs, but these are expected to be exceptionally rare, and effectively non-existent in California and other high seismic areas that traditionally used the UBC.
EB141-19


Proponent: David Bonowitz, representing Self (dbonowitz@att.net)

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

2018 International Existing Building Code

Revise as follows:

[BS] A203.1 Definitions. For the purpose of this chapter, the applicable definitions listed in Chapters 16, 19, 21, 22 and 23 of the International Building Code and the following shall apply:

Add new definition as follows:

CONTINUITY CONNECTOR A component, typically a plate, rod, strap, or hold-downs, that ensures load path continuity along the full length of a crosstie or strut.

CROSSTIE A member continuous across the main diaphragm that connects opposite wall lines and transfers out-of-plane wall anchorage forces into the diaphragm.

Revise as follows:

[BS] FLEXIBLE DIAPHRAGMS, DIAPHRAGM. Roofs and floors including, but not limited to, those A roof or floor sheathed with plywood, wood decking (1-by or 2-by) or metal decks, deck without a concrete topping slabs, slab.

Add new definition as follows:

STRUT A member continuous across a subdiaphragm that transfers out-of-plane wall anchorage forces into the subdiaphragm.

WALL ANCHORAGE SYSTEM The components comprising a complete load path for out-of-plane wall forces from the wall to the main diaphragm, typically including anchors embedded in or fastened to the wall; rods, straps, plates, hold-downs or other hardware; subdiaphragms and their chords; crossties; struts; and continuity connectors.

[BS] A205.3 Requirements for plans. The plans shall accurately reflect the results of the engineering investigation and design and shall show all pertinent dimensions and sizes for plan review and construction. The following shall be provided:

1. Floor plans and roof plans shall show existing framing construction, diaphragm construction, proposed wall anchors, crossties, crossties and collectors. Existing nailing, anchors, crossties, crossties and collectors shall be shown on the plans if they are considered part of the lateral force-resisting systems.
2. At elevations where there are alterations or damage, details shall show roof and floor heights, dimensions of openings, location and extent of existing damage and proposed repair.
3. Typical wall panel details and sections with panel thickness, height, pilasters and location of anchors shall be provided.
4. Details shall include existing and new anchors and the method of developing anchor forces into the diaphragm framing, existing and new crossties, crossties, and existing and new or improved support of roof and floor girders at pilasters or walls.
5. The basis for design and the building code used for the design shall be stated on the plans.

[BS] A206.3 Development of anchor loads into the diaphragm. Development of anchor loads into roof and floor diaphragms shall comply with Section 1613 of the International Building Code using horizontal forces that are 75 percent of those used for new construction. In wood diaphragms, anchorage shall not be accomplished by use of toenails or nails subject to withdrawal. Wood ledgers, top plates or framing shall not be used in cross-grain bending or cross-grain tension. The continuous ties crossties required in Section 1613 of the International Building Code shall be in addition to the diaphragm sheathing.

Lengths of development of anchor loads in wood diaphragms shall be based on existing field nailing of the sheathing unless existing edge nailing is positively identified on the original construction plans or at the site.

Exception: If continuously tied girders are present, the maximum spacing of the continuity ties crossties is the greater of the girder spacing or 24 feet (7315 mm).

Reason: This proposal supplements the Chapter A2 definitions and corrects references to defined terms.

A203.1: The IBC now has all of its definitions in Chapter 2. There is no need to cite specific chapters or sections.
In addition to the added definitions, ASCE 7 already provides adequate definitions for two other terms used in the chapter: subdiaphragm and collector.

CONTINUITY CONNECTOR, CROSSTIE, STRUT: Definitions added to clarify the provisions and ensure consistency. The term “crosstie,” a single word with no hyphen, is consistent with the terminology used in ASCE 7 Section 12.11.2.2.1. (Some RWFD retrofit references, including the Los Angeles Building Code and the SEAOC commentary, refer to continuity connectors as “continuity ties.” However, continuity connectors is the more traditional term and is preferred in part because “continuity ties” is easily confused with the phrase “continuous crossties.”)

FLEXIBLE DIAPHRAGM(S): Make the defined term singular. Simplify the definition to match ASCE 7 Section 12.3.1.1, which refers only to “diaphragms constructed of untopped steel decking or wood structural panels.”

WALL ANCHORAGE SYSTEM: The proposed definition is based on ASCE 7 Section 12.11.2.2.1, which lists the components that need to be provided to carry the prescribed forces.

A205.3: Replace “cross-ties” with “crossties” in three places.

A206.3: In two places, the correct term “crossties” replaces similar but confusing wording. The crossties must be continuous, but ‘continuous ties’ or ‘continuity ties’ is confusingly close to ‘continuity connectors’.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The proposal is editorial and therefore will have no effect on cost.

Proposal # 5701

EB141-19
EB142-19
IEBC®: [BS] A203.1, [BS], (New), [BS] A206.2

Proponent: David Bonowitz, representing Self (dbonowitz@att.net)

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

2018 International Existing Building Code

[BS] A203.1 Definitions. For the purpose of this chapter, the applicable definitions listed in Chapters 16, 19, 21, 22 and 23 of the International Building Code and the following shall apply:

[BS] FLEXIBLE DIAPHRAGMS. Roofs and floors including, but not limited to, those sheathed with plywood, wood decking (1-by or 2-by) or metal decks without concrete topping slabs.

Add new definition as follows:

WALL SEGMENT. Any length of concrete or reinforced masonry wall not interrupted or intersected by a pilaster or vertical construction joint.

Revise as follows:

[BS] A206.2 Special requirements for wall anchorage systems. The steel elements of the wall anchorage system shall be designed in accordance with the International Building Code without the use of the 1.33 short duration allowable stress increase where using allowable stress design.

The maximum spacing between wall anchors shall be 8 feet, and each wall segment shall have at least two wall anchors.

Wall anchors shall be provided to resist out-of-plane forces, independent of existing shear anchors.

Expansion anchors are only allowed with special inspection and approved testing for seismic loading.

Attaching the edge of plywood sheathing to steel ledgers is not considered compliant with the positive anchoring requirements of this chapter. Attaching the edge of steel decks to steel ledgers is not considered as providing the positive anchorage of this chapter unless testing or analysis is performed to establish shear values for the attachment perpendicular to the edge of the deck. Where steel decking is used as a wall anchor system, the existing connections shall be subject to field verification and the new connections shall be subject to special inspection.

Exception: Existing cast-in-place shear anchors are allowed to be used as wall anchors if the tie element can be readily attached to the anchors, and if the engineer or architect can establish tension values for the existing anchors through the use of approved as-built plans or testing and through analysis showing that the bolts are capable of resisting the total shear load (including dead load) while being acted on by the maximum tension force caused by an earthquake. Criteria for analysis and testing shall be determined by the building official.

Reason: This proposal adds a prescriptive requirement based on ASCE 41 Table 17-28, which considers the lack of two anchors per precast wall panel to be a potential deficiency. The 8-ft maximum spacing proposed is larger than the spacing that would be expected for a typical Chapter A2 retrofit and thus represents a limit to guard against unusual or extreme cases.

A definition of wall segment is provided to facilitate the new requirement.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. The proposal guards against extreme cases and will not apply frequently thus generally not affecting the cost of construction.

Proposal # 5708
Proponent: David Bonowitz, representing Self (dbonowitz@att.net)

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

2018 International Existing Building Code

Revised as follows:

**[BS] A205.1 General.** The seismic-resisting elements specified in this chapter shall comply with applicable provisions of Section 1613 of the International Building Code and Chapter 12 of ASCE 7, except as modified herein.

**[BS] A206.1 Reinforced concrete and reinforced masonry wall anchorage.** Concrete and masonry walls shall be anchored to all floors and roofs that provide lateral support for the wall in accordance with ASCE 7 Section 12.11.2. The anchorage shall provide a positive direct connection between the wall and floor or roof construction capable of resisting 75 percent of the horizontal forces specified in Section 1613 of the International Building Code, ASCE 7 Section 12.11.2.1.

**Exceptions:**
1. Existing walls need not be evaluated or retrofitted for bending between anchors.
2. Work required by this chapter need not consider shrinkage, thermal changes, or differential settlement.

**[BS] A206.2 Special Additional requirements for wall anchorage systems.** The wall anchorage system shall comply with the requirements of this section and of ASCE 7 Section 12.11.2.2. The steel elements of the wall anchorage system shall be designed in accordance with the International Building Code without the use of the 1.33 short duration allowable stress increase where using allowable stress design.

Wall anchors shall be provided to resist out-of-plane forces, independent of existing shear anchors.

Expansion anchors are only allowed with special inspection and approved testing for seismic loading.

Attaching the edge of plywood sheathing to steel ledgers is not considered compliant with the positive anchoring requirements of this chapter.

Attaching the edge of steel decks to steel ledgers is not considered as providing the positive anchorage of this chapter unless testing or analysis is performed to establish shear values for the attachment perpendicular to the edge of the deck. Where steel decking is used as a wall anchor system, the existing connections shall be subject to field verification and the new connections shall be subject to special inspection.

**Exception:** Existing cast-in-place shear anchors are allowed to be used as wall anchors if the tie element can be readily attached to the anchors, and if the engineer or architect can establish tension values for the existing anchors through the use of approved as-built plans or testing and through analysis showing that the bolts are capable of resisting the total shear load (including dead load) while being acted on by the maximum tension force caused by an earthquake. Criteria for analysis and testing shall be determined by the building official.

**[BS] A206.3 Development of anchor loads—anchorage forces into the diaphragm.** Development of anchor loads—anchorage forces into roof and floor diaphragms shall comply with the requirements of this section and of ASCE 7 Section 12.11.2.2. Section 1613 of the International Building Code using horizontal forces that are 75 percent of those used for new construction.

In wood diaphragms, anchorage shall not be accomplished by use of toenails or nails subject to withdrawal. Wood ledgers, top plates or framing shall not be used in cross grain bending or cross grain tension. The continuous ties required in Section 1613 of the International Building Code shall be in addition to the diaphragm sheathing. Lengths of development of anchor loads in wood diaphragms shall be based on existing field nailing of the sheathing unless existing edge nailing is positively identified on the original construction plans or at the site.

**Exception:** If continuously tied girders are present, the maximum spacing of the continuity ties is the greater of the girder spacing or 24 feet (7315 mm).

**[BS] A206.4anchorage at pilasters.** Anchorage at pilasters shall be designed for the tributary wall anchoring load per Section A206.1, considering the wall as a two-way slab. The edges of the two-way slab shall be considered to be fixed where there is continuity at pilasters and shall be considered to be pinned at roof and floor. Where pilasters are present, the wall anchorage system shall comply with the requirements of this section and of ASCE 7 Section 12.11.2.2.7. The pilasters or the walls immediately adjacent to the pilasters shall be anchored directly to the roof framing such that the existing vertical anchor bolts at the top of the pilasters are bypassed without permitting tension or shear failure at the top of the pilasters. The minimum anchorage force at a floor or roof between the pilasters shall be that specified in Section A206.1.

**Exception:** If existing vertical anchor bolts at the top of the pilasters are used for the anchorage, additional exterior confinement shall be provided.
as required to resist the total anchorage force.

Delete without substitution:

**A206.5 Symmetry.** Symmetry of wall anchorage and continuity connectors about the minor axis of the framing member is required.

**Exception:** Eccentricity shall be allowed where it can be shown that all components of forces are positively resisted. The resistance must be supported by calculations or tests.

**A206.8 Collectors.** If collectors are not present, collectors designed in accordance with this section shall be provided at reentrant corners or at interior shear walls. Existing or new collectors shall be designed to have the capacity required to develop into the diaphragm a force equal to the lesser of the rocking or shear capacity of the reentrant wall or the tributary shear based on 75 percent of the horizontal diaphragm design forces specified in Chapter 16 of the International Building Code. ASCE 7 Section 12.10. The capacity of the collector need not exceed the capacity of the diaphragm to deliver loads to the collector. A connection shall be provided from the collector to the reentrant wall to transfer the full collector force (load), internal force. If a truss or beam other than a rafter or purlin is supported by the reentrant wall or by a column integral with the reentrant wall, then an independent secondary column is required to support the roof or floor members whenever rocking or shear capacity of the reentrant wall is less than the tributary shear.

**Reason:** This proposal improves coordination, and removes conflicts, between Chapter A2 and the reference codes and standards it already cites. The intent is to avoid duplication, leaving in Chapter A2 only those specific existing building provisions not found in ASCE 7. Since the current Chapter A2 already requires the designer to consult the IBC, which then invokes ASCE 7, this proposed approach does not result in any additional work.

**Rationale for each change is as follows:**

A205.1: The provision cites IBC Section 1613 as criteria, but Section 1613 merely references ASCE 7. IBC Section 1613.5.1 used to modify the ASCE 7 provisions for wall anchorage, but those modifications are no longer in the 2018 IBC. Therefore, since ASCE 7 is an approved reference standard, and since compliance with IBC Section 1613 would already require its use without modification, it is preferable to refer directly to ASCE 7. Citing ASCE 7 within the general provisions of Section A205.1 facilitates the reference to specific ASCE 7 sections within Section A206.

A206.1:

- Edits to match the wording of ASCE 7 Section 12.11.2.1.
- Two exceptions added to maintain the current scope of Chapter A2, which considers only the wall anchorage system and collectors, but does not require a check of the walls themselves or the main diaphragm under global lateral loads. The wording of the two exceptions refers to requirements for new construction in ASCE 7 Section 12.11.2.1. Without these proposed exceptions, a plain reading of the current provision would invoke IBC Section 1613, which would invoke ASCE 7, which would include all requirements in Section 12.11.2.1.

A206.2:

- Edit the section title to match ASCE 7 Sec 12.11.2.2.
- Add reference to ASCE 7 Sec 12.11.2.2.

A206.3:

- Edit the section title to match wording of ASCE 7 Sec 12.11.2 and subsections.
- Add reference to ASCE 7 Sec 12.11.2.2. The reference to “75 percent” forces is deleted as unnecessary; it is preferable to avoid duplication of the same allowance given in A206.1.
- Delete the paragraph about wood diaphragms. ASCE 7 Sec 12.11.2.2.3 already makes similar restrictions on nailing, cross-grain bending, and separate crossties.

A206.4: Add reference to ASCE 7 Sec 12.11.2.2.7 and delete redundant provision.

A206.5: Delete, as eccentricity is already covered by ASCE 7 Sec 12.11.2.2.6.

A206.8: Refer to ASCE 7 instead of IBC Chapter 16. Note that Chapter A2 allows a capacity design approach per this section as an alternative to ASCE 7 with reduced forces.

**Cost Impact:** The code change proposal will not increase or decrease the cost of construction. The proposal is editorial and provides coordination only.

Proposal # 5702
EB144-19

IEBC®: [BS] A205.2, [BS] A205.3

Proponent: David Bonowitz, representing Self (dbonowitz@att.net)

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

2018 International Existing Building Code

Delete without substitution:

[BS] A205.2 Alterations and repairs. Alterations and repairs required to meet the provisions of this chapter shall comply with applicable structural requirements of the building code unless specifically modified in this chapter.

Revise as follows:

[BS] A205.3 Requirements for plans. The plans shall accurately reflect the results of the engineering investigation and design and shall show all pertinent dimensions and sizes for plan review and construction. The following shall be provided:

1. Floor plans and roof plans shall show existing framing construction, diaphragm construction, proposed wall anchors, cross-ties and collectors. Existing nailing, anchors, cross-ties and collectors shall be shown on the plans if they are considered part of the lateral force-resisting systems.
2. At elevations where there are alterations or damage, details shall show roof and floor heights, dimensions of openings, location and extent of existing damage and proposed repair.
3. Typical wall panel details and sections with panel thickness, height, pilasters and location of anchors shall be provided.
4. Details shall include existing and new anchors and the method of developing anchor forces into the diaphragm framing, existing and new cross-ties, and existing and new or improved support of roof and floor girders at pilasters or walls.
5. The basis for design and the building code used for the design shall be stated on the plans.

Reason: This proposal removes provisions that are unnecessary and outside the scope of Chapter A2. There is no need for Section A205.2, as the applicable codes already cover these same generic circumstances. Neither IEBC Chapter A3 nor IEBC Chapter A4 has a similar provision, demonstrating that it is unnecessary in Chapter A2. (IEBC Chapter A1 does have a similar provision, but it’s unnecessary and obsolete there, too.) Similarly, since alteration and repair (other than the contemplated retrofit) is outside the scope of Chapter A2, Section A205.3 item 2 is not needed and potentially misleading. Where other alterations or repairs are being made, the IEBC or governing code will already have provisions for proper documentation.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. The proposal has no substantive impact as these provisions are addressed elsewhere.
EB145-19

IEBC®: [BS] A205.4, 205.5 (New), A205.6 (New)

Proponent: David Bonowitz, representing Self (dbonowitz@att.net)

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

2018 International Existing Building Code
Revise as follows:

[BS] A205.4 Structural observation, testing and inspection. Structural observation, in accordance with Section 1704.6 of the International Building Code, shall be required for all structures in which seismic retrofit is being performed in accordance with this chapter, regardless of seismic design category, height, or other conditions. Structural observation shall include visual observation of work for conformance to the approved construction documents and confirmation of existing conditions assumed during design. Structural testing and inspection for new construction materials shall be in accordance with the building code, except as modified by this chapter.

Add new text as follows:

205.5 Contractor responsibility. Contractor responsibility shall be in accordance with Section 1704.4 of the International Building Code.

A205.6 Testing and Inspection Structural testing and inspection for new construction materials, submittals, reports, and certificates of compliance, shall be in accordance with Sections 1704 and 1705 of the International Building Code. Work done to comply with this chapter shall not be eligible for Exception 1 to International Building Code Section 1704.2, Exception 2 to International Building Code Section 1705.12, or the Exception to International Building Code Section 1705.12.2.

Reason: This proposal corrects a code reference and clarifies that typical quality assurance provisions from IBC Chapter 17 apply to Chapter A2 projects.

A205.4: For clarity, the current provision is broken into three subsections. Regarding structural observation, the proposal corrects a mistaken IBC section number and clarifies that the requirement applies despite IBC waivers for buildings of certain heights or assigned to certain seismic design categories.

A205.5: Regarding the contractor statement of responsibility, the proposed new section confirms that IBC section 1704.4 applies.

A205.6: Regarding testing and inspection, proposed Section A205.6 clarifies the existing reference to “the building code” and disallows certain exemptions in IBC Chapter 17 that apply to new construction of a minor nature but should not apply to Chapter A2 retrofits.

Cost Impact: The code change proposal will not increase or decrease the cost of construction.

The proposal merely clarifies existing requirements. In rare cases, the cost of testing and inspection might increase slightly.

Proposal # 5704

Proposal # 5704
EB146-19

IEBC®: A205.4.1 (New), A205.4.2 (New), A205.4.3 (New), [BS] A206.2

Proponent: David Bonowitz, representing Self (dbonowitz@att.net)

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

2018 International Existing Building Code

Add new text as follows:

**A205.4.1 Additional special inspection.** In addition to the requirements of International Building Code Section 1705.12, special inspection shall be required for:

1. Installation of anchors into existing concrete or masonry walls to form part of a wall anchorage system.
2. Fastening of new or existing steel deck forming part of a wall anchorage system.

**A205.4.2 Testing to establish adequacy of existing wall anchors.** Testing shall show that the existing anchors can sustain a test load of 1.5 times the design tension load without noticeable deformation or damage to the anchor, to the masonry or concrete element, or to any part of the existing load path between the anchor and new retrofit components. Three anchors of each existing detail type shall be tested, and all three shall satisfy the requirement. Prior to testing, the design professional shall submit a test plan for code official approval identifying the expected locations of the existing anchors, the locations of the proposed tests, and the test procedure and criteria. After testing, the design professional shall submit a report of the satisfactory testing showing the test results, the design strengths derived from them, and the size and spacing as confirmed by investigation.

**A205.4.3 Testing to establish adequacy of existing steel deck connections.** Testing shall show that the existing construction can sustain a test load of 1.5 times the design load without noticeable deformation or damage to the deck, to the fasteners, or to any part of the existing load path. Three tests of each existing detail type shall be tested, and all three shall satisfy the requirement. Prior to testing, the design professional shall submit a test plan for code official approval including the findings of condition assessment, the expected locations of each detail type in question, the locations of the proposed tests, and the test procedure and criteria. After testing, the design professional shall submit a report of the satisfactory testing showing the test results and the design strengths derived from them.

**[BS] A206.2 Special requirements for wall anchorage systems.** The steel elements of the wall anchorage system shall be designed in accordance with the International Building Code without the use of the 1.33 short duration allowable stress increase where using allowable stress design.

Wall anchors shall be provided to resist out-of-plane forces, independent of existing shear anchors.

Expansion anchors are only allowed with special inspection and approved testing for seismic loading.

Attaching wall anchorage shall not be provided solely by fastening the edge of plywood sheathing to steel ledgers. Wall anchorage shall be provided to establish shear values for the attachment perpendicular to the edge of the deck. Where steel decking is used as a wall anchor system, the unless testing in accordance with Section A205.4.3 establishes acceptable capacity. The existing connections shall be subject to field verification and the new connections shall be subject to special inspection.

New wall anchors shall be provided to resist the full wall anchorage design force independent of existing shear or tension anchors.

**Exception:** Existing cast-in-place shear anchors are allowed to be used permitted as part of the wall anchorage system if the tie element can be readily attached to the anchors, and if the engineer or architect can establish tension values for the existing anchors through the use of approved as-built plans or testing and through analysis showing that the bolts are capable of resisting the total vertical and lateral shear load (including dead load) while being acted on by the maximum wall anchorage tension force caused by an earthquake. Criteria for analysis and testing Acceptable tension values for the existing anchors shall be determined by the building official established by testing in accordance with Section A205.4.2.

**Reason:** This proposal coordinates the testing and inspection requirements given in Section A206.2 with Section A205.4, which is already meant to cover testing and inspection. It adds several new subsections to A205.4 to clarify the intent of the testing and inspection in Section A206.2. A205.4.1: The two listed conditions already require special inspection per Section A206.2.

A205.4.2: These test requirements are consistent with ASCE 41-17 Section 10.2.2.4.1, which addresses testing of cast-in-place and post-installed anchors in concrete, and which reads, in part, “If the test load is used as the basis for anchor strength calculation, the available anchor strength shall not be taken as greater than 2/3 of the test load.” Thus, successful tests to 1.5 times the design strength will justify use of the existing anchors. The requirement to test three existing anchors is also consistent with ASCE 41, though ASCE 41 requires testing 5 percent of the existing anchors.
as well, so in large buildings, the ASCE 41 requirement can be more conservative.

A205.4.3: These test requirements parallel those proposed in Section A205.4.2.

A206.2: This section is edited to coordinate with the new section on special inspection, as follows:

- The provision regarding expansion anchors is replaced by the special inspection requirement in A205.4.1 and the testing requirement in A205.4.2.
- The sentence regarding independent wall anchors is moved to the end of the section to be adjacent to the Exception; it is also edited for clarity. The Exception applies only to this part of Section A206.2. The Exception is edited for clarity and to refer to the new testing requirement in Section A205.4.2.
- The plywood provision is edited for clarity.
- The steel deck provision is edited for clarity, with a reference to the related inspection and testing requirements in A205.4.1 and A205.4.3. Note that compliance of existing attachments by analysis is no longer considered reliable, so the provision has been modified to rely on testing alone.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The proposal merely clarifies existing requirements. In rare cases, the cost of testing and inspection might increase slightly.
EB147-19

IEBC®: A205.4.1 (New), [BS] A206.2

Proponent: David Bonowitz, representing Self (dbonowitz@att.net)

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

2018 International Existing Building Code

Add new text as follows:

A205.4.1 Additional special inspection. In addition to the requirements of International Building Code Section 1705.12, special inspection shall be required for:

1. Installation of continuity connectors along the length of crossties, to ensure properly sized fastener holes and adequate crosstie stiffness.

[BS] A206.2 Special requirements for wall anchorage systems. The steel elements of the wall anchorage system shall be designed in accordance with the International Building Code without the use of the 1.33 short duration allowable stress increase where using allowable stress design. The wall anchorage system, excluding subdiaphragms and existing roof or floor framing members, shall be stiff enough to limit the relative movement between the wall and the diaphragm to no more than 1/8" before engagement of the anchors, when subject to the wall anchorage design forces.

Wall anchors shall be provided to resist out-of-plane forces, independent of existing shear anchors.

Expansion anchors are only allowed with special inspection and approved testing for seismic loading.

Attaching the edge of plywood sheathing to steel ledgers is not considered compliant with the positive anchoring requirements of this chapter. Attaching the edge of steel decks to steel ledgers is not considered as providing the positive anchorage of this chapter unless testing or analysis is performed to establish shear values for the attachment perpendicular to the edge of the deck. Where steel decking is used as a wall anchor system, the existing connections shall be subject to field verification and the new connections shall be subject to special inspection.

Exception: Existing cast-in-place shear anchors are allowed to be used as wall anchors if the tie element can be readily attached to the anchors, and if the engineer or architect can establish tension values for the existing anchors through the use of approved as-built plans or testing and through analysis showing that the bolts are capable of resisting the total shear load (including dead load) while being acted upon by the maximum tension force caused by an earthquake. Criteria for analysis and testing shall be determined by the building official.

Reason: This proposal adds a stiffness requirement for the wall anchorage system. The proposed requirement is consistent with ASCE 41-17 Table 17-34. It has the same intent as a stiffness requirement discussed in the SEAOC commentary to IEBC Chapter A2 and implemented by the City of Los Angeles Department of Building and Safety. The SEAOC and Los Angeles approach limits the elongation under load. The ASCE 41 approach, which is the approach adopted here, limits the slack in the system (including continuity connectors along the length of the cross-ties) provided by the detailing and construction.

In addition to the proposed design criteria in Section A206.2, the proposal adds a special inspection requirement to Section A205.4 to ensure that additional slack is not introduced as continuity connectors are added to crossties.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. Typical applications are expected to already satisfy the new stiffness requirement.
EB148-19

IEBC®: A206.1.1 (New)

**Proponent:** David Bonowitz, representing Self (dbonowitz@att.net)

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

**2018 International Existing Building Code**

Add new text as follows:

**A206.1.1 Seismicity parameters, Site Class, and geologic hazards.** For any site designated as Site Class E, the value of $F_s$ shall be taken as 1.3. Site-specific procedures are not required for compliance with this chapter. Mitigation of existing geologic site hazards such as liquefiable soil, fault rupture, or landslide is not required for compliance with this chapter.

**Reason:** This proposal clarifies the intended scope of Chapter A2. The proposed clarifications have been vetted by the Structural Engineers Association of Northern California Existing Buildings Committee (SEAONC EBC) with respect to “soft story” retrofits and have been implemented as proposed here by an RWFD retrofit program in Berkeley, California. The first two sentences simplify the application of IBC Section 1613 and ASCE 7 Section 12.11 to these retrofit projects, helping to keep them economically feasible. The value of $F_s = 1.3$, which is the default value for Site Class E in areas of high (but not highest or near-fault) seismicity, comes from a SEAONC EBC recommendation related to observed performance and recorded ground motions in the Loma Prieta earthquake. This value is allowed as a possibly conservative convenience, avoiding the need for expensive site-specific investigation (per ASCE 7 Table 11.4-1 and Section 11.4.8). Site-specific investigation remains an option, but is not required. This simplification is consistent in principle with the exceptions and waivers already provided in ASCE 7 Sections 11.4.8 and 20.3.1.

The site-specific ground motion procedures normally required by ASCE 7 Section 11.4.8 are waived for these retrofit projects. Many buildings eligible for Chapter A2 would be exempt from site response analysis by the exception to ASCE 7 Section 20.3.1.

The final proposed sentence clarifies that mitigation beyond the critical wall anchorage system is not intended by Chapter A2. Just as the chapter requires no retrofit of walls and no mitigation of nonstructural hazards, the proposal would waive geologic hazard mitigation that might be required for new construction or for more comprehensive triggered retrofits. Consistent with the limited scope of Chapter A2, these clarifications regarding geologic hazards are intended to keep Chapter A2 retrofits cost-effective.

**Cost Impact:** The code change proposal will not increase or decrease the cost of construction

In some cases, it will decrease the cost of construction by avoiding the cost of investigation and mitigation. In some cases it will increase the cost of construction by defaulting to a possibly conservative value.
EB149-19

Proponent: David Bonowitz, representing Self (dbonowitz@att.net)

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

2018 International Existing Building Code

Revise as follows:

[BS] A206.2 Special requirements for wall anchorage systems. The steel elements of the wall anchorage system shall be designed in accordance with the International Building Code without the use of the 1.33 short duration allowable stress increase where using allowable stress design.
Where new members are added as crossties, they shall be spaced no more than 24 feet (7315 mm) apart. Where existing girders are used as crossties, their actual spacing shall be deemed adequate even where the spacing exceeds 24 feet (7315 mm), as long as the girders are provided with adequate continuity connectors.

Wall anchors shall be provided to resist out-of-plane forces, independent of existing shear anchors.

Expansion anchors are only allowed with special inspection and approved testing for seismic loading.

Attaching the edge of plywood sheathing to steel ledgers is not considered compliant with the positive anchoring requirements of this chapter.
Attaching the edge of steel decks to steel ledgers is not considered as providing the positive anchorage of this chapter unless testing or analysis is performed to establish shear values for the attachment perpendicular to the edge of the deck. Where steel decking is used as a wall anchor system, the existing connections shall be subject to field verification and the new connections shall be subject to special inspection.

Exception: Existing cast-in-place shear anchors are allowed to be used as wall anchors if the tie element can be readily attached to the anchors, and if the engineer or architect can establish tension values for the existing anchors through the use of approved as-built plans or testing and through analysis showing that the bolts are capable of resisting the total shear load (including dead load) while being acted on by the maximum tension force caused by an earthquake. Criteria for analysis and testing shall be determined by the building official.

[BS] A206.3 Development of anchor loads into the diaphragm. Development of anchor loads into roof and floor diaphragms shall comply with Section 1613 of the International Building Code using horizontal forces that are 75 percent of those used for new construction.
In wood diaphragms, anchorage shall not be accomplished by use of toenails or nails subject to withdrawal. Wood ledgers, top plates or framing shall not be used in cross-grain bending or cross-grain tension. The continuous ties required in Section 1613 of the International Building Code shall be in addition to the diaphragm sheathing.

Lengths of development of anchor loads in wood diaphragms shall be based on existing field nailing of the sheathing unless existing edge nailing is positively identified on the original construction plans or at the site.

Exception: If continuously tied girders are present, the maximum spacing of the continuity ties is the greater of the girder spacing or 24 feet (7315 mm).

Reason: This editorial proposal corrects a misplaced provision and clarifies its intent. The current exception to Section A206.3 is out of place for two reasons. First, it is unrelated to the issue of load development into the diaphragm (crossties must be continuous across the full diaphragm width), so it really belongs in Section A206.2. Second, since ASCE 7 sets no limit on the maximum spacing of crossties, the provision is not really an exception at all. Therefore, as the existing text is relocated to Section A206.2, it has been edited to clarify the intended spacing limit and the allowance where existing members act as adequate crossties.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Editorial therefore will have no impact on cost.
EB150-19

IEBC®: [BS] A206.2

Proponent: David Bonowitz, representing Self (dbonowitz@att.net)

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

2018 International Existing Building Code

[BS] A206.2 Special requirements for wall anchorage systems. The steel elements of the wall anchorage system shall be designed in accordance with the International Building Code without the use of the 1.33 short duration allowable stress increase where using allowable stress design.

Wall anchors shall be provided to resist out-of-plane forces, independent of existing shear anchors.

Expansion anchors are only allowed with special inspection and approved testing for seismic loading.

Attaching the edge of plywood sheathing to steel ledgers is not considered compliant with the positive anchoring requirements of this chapter. Attaching the edge of steel decks to steel ledgers is not considered as providing the positive anchorage of this chapter unless testing or analysis is performed to establish shear values for the attachment perpendicular to the edge of the deck. Where steel decking is used as a wall anchor system, the existing connections shall be subject to field verification and the new connections shall be subject to special inspection.

**Exception:** Existing cast-in-place shear anchors are allowed to be used as wall anchors if the tie element can be readily attached to the anchors, and if the engineer or architect can establish tension values for the existing anchors through the use of approved as-built plans or testing and through analysis showing that the bolts are capable of resisting the total shear load (including dead load) while being acted on by the maximum tension force caused by an earthquake. Criteria for analysis and testing shall be determined by the building official.

**Reason:** This proposal deletes an obsolete requirement. The ASD provision is no longer included in ASCE 7, and LRFD or strength design of steel elements no longer uses a 1.33 load duration factor. ASCE 7 Section 12.11.2.2 already provides special provisions for steel elements and for coordination with SDPWS.

**Cost Impact:** The code change proposal will not increase or decrease the cost of construction. The provisions are outdated and do not apply. Therefore this revision with not affect construction cost.

Proposal # 5706
EB151-19
IEBC®: [BS] A401.2

Proponent: David Bonowitz, representing Self (dbonowitz@att.net)

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

2018 International Existing Building Code

[BS] A401.2 Scope. The provisions of this chapter shall apply to all existing Occupancy Group R-1 and R-2 buildings of wood construction or portions thereof that contain residential occupancy and are assigned to Risk Category II, and where the structure has a soft, weak, or open-front wall line, and there exists one or more stories above.

Reason: The proposal clarifies the intended limitations of Chapter A4. The words “shall” and “all” are deleted to correct the impression that adoption of Chapter A4 necessarily imposes a retroactive requirement. The purpose of Section A401.2 is to describe the buildings for which the chapter might be useful, not those that are required to comply. Charging language is found elsewhere in the IEBC, or is sometimes found in separate legislative mandates.

“Occupancy Group R-1 and R-2” is replaced with a more generic reference to R occupancy and a reference to Risk Category II because there is no reason why an R-4 facility (or even an R-3 dwelling) cannot use Chapter A4, as long as it is not a high hazard (RC III) or essential facility (RC IV).

The word “contain” is added to indicate that the building may have non-residential occupancy as well. Indeed, it is typically the presence of S or U occupancy (parking) in the first story that makes the building a candidate for Chapter A4. Many eligible buildings also have B or M occupancy in the critical story.

The phrase “or portions thereof” is deleted because it is unnecessary and potentially confusing.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The proposal recognizes how Chapter A4 is currently used and the conditions to which it is meant to apply, some of which might be excluded by a misreading of the current provision

Proposal # 5774

Proponent: David Bonowitz, representing Self (dbonowitz@att.net)

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

2018 International Existing Building Code

Revise as follows:

CHAPTER A4
EARTHQUAKE RISK REDUCTION IN WOOD-FRAME RESIDENTIAL BUILDINGS WITH SOFT, WEAK OR OPEN-FRONT WALLS TARGET STORIES

[BS] A401.2 Scope. The provisions of this chapter shall apply to all existing Occupancy Group R-1 and R-2 buildings of wood construction or portions thereof where the structure has a soft, weak, or open front wall line, and there exists one or more stories above target story.

[BS] A402.1 Definitions. Notwithstanding the applicable definitions, symbols and notations in the building code, the following definitions shall apply for the purposes of this chapter:

Delete without substitution:

[BS] OPEN-FRONT WALL LINE. An exterior wall line, without vertical elements of the lateral force-resisting system, that requires tributary seismic forces to be resisted by diaphragm rotation or excessive cantilever beyond parallel lines of shear walls. Diaphragms that cantilever more than 25 percent of the distance between lines of lateral force-resisting elements from which the diaphragm cantilevers shall be considered to be excessive. Exterior exit balconies of 6 feet (1829 mm) or less in width shall not be considered excessive cantilevers.

[BS] SOFT WALL LINE. A wall line whose lateral stiffness is less than that required by story drift limitations or deformation compatibility requirements of this chapter. In lieu of analysis, a soft wall line may be defined as a wall line in a story where the story stiffness is less than 70 percent of the story above for the direction under consideration.

Add new definition as follows:

TARGET STORY. Either (1) a basement story or underfloor area that extends above grade at any point or (2) any story above grade, in which a significant portion of lateral or torsional story strength or story stiffness is provided by wood frame walls, and where the wall configuration of such basement, underfloor area, or story is substantially more vulnerable to earthquake damage than the wall configuration of the story above, except that a story is not a target story if it is the topmost story or if the difference in vulnerability is primarily due to the story above being a penthouse or an attic with a pitched roof.

Delete without substitution:

[BS] WEAK WALL LINE. A wall line in a story where the story strength is less than 80 percent of the story above in the direction under consideration:

[BS] A403.2 Scope of analysis. This chapter requires the alteration, repair, replacement or addition of structural elements and their connections to meet the strength and stiffness requirements herein. The lateral load-path analysis shall include the resisting elements and connections from the wood diaphragm immediately above any soft, weak or open front wall lines at the top of the uppermost target story to the foundation soil interface or to the uppermost story of a podium structure comprised of steel, masonry, or concrete structural systems that supports the upper, wood-framed structure. Stories above the uppermost story with a soft, weak, or open front wall line target story shall be considered in the analysis but need not be modified. The lateral load-path analysis for added structural elements shall include evaluation of the allowable soil-bearing and lateral pressures in accordance with the building code. Where any portion of a building within the scope of this chapter is constructed on or into a slope steeper than one unit vertical in three units horizontal (33-percent slope), the lateral force-resisting system at and below the base level diaphragm shall be analyzed for the effects of concentrated lateral forces at the base caused by this hillside condition.

Exception: Where an open front, weak or soft wall line target story exists because of parking at the ground floor of a two-story building and the parking area is less than 20 percent of the ground floor area, then only the wall lines in the open, weak or soft directions of the enclosed critical direction around the adjacent parking area need comply with the provisions of this chapter.

[BS] A403.9.1 Gypsum or cement plaster products. Gypsum or cement plaster products shall not be used to provide lateral resistance in a soft or weak story, or in a story with an open front wall line, whether or not new elements are added to mitigate the soft, weak or open front condition, the strength required by Section A403.3 or the stiffness required by Section A403.4.
SECTION A404
PRESCRIPTIVE MEASURES FOR WEAK STORY

[BS] A404.1.1 Additional conditions. To qualify for these prescriptive measures, the following additional conditions need to be satisfied by the retrofitted structure:

1. Diaphragm aspect ratio $L/W$ is less than 0.67, where $W$ is the diaphragm dimension parallel to the soft, weak or open front wall line target story critical direction and $L$ is the distance in the orthogonal direction between that perimeter wall line and the rear wall of the ground floor open area.
2. Minimum length of side shear walls = 20 feet (6096 mm).
3. Minimum length of rear shear wall = three-fourths of the total rear wall length.
4. Plan or vertical irregularities shall not be other than a soft, weak or open front wall line, those associated with the target story.
5. Roofing weight less than or equal to 5 pounds per square foot (240 N/m²).
6. Aspect ratio of the full second floor diaphragm meets the requirements of the building code for new construction.

Reason: This proposal replaces three troublesome definitions unique to Chapter A4 with a more concise term already proven feasible in retrofit programs involving thousands of structures.

The proposal looks like it's big and makes a complicated change. It's actually straightforward and largely editorial – just an improvement in terminology. The three problematic definitions – open-front wall line, soft wall line, and weak wall line – are actually not that important to the substance of Chapter A4. Their purpose is merely to describe the buildings to which the chapter applies. Their job is to get you properly into the chapter, but they are not needed to get you out, as they are not used to measure compliance. Similarly, the definition and use of TARGET STORY proposed here is merely to identify candidate buildings. It will have no impact at all on the retrofit criteria or the resulting retrofit designs.

The three definitions represent attempts nearly 25 years ago to define the building type of interest. It's one every engineer in earthquake country knows by sight, but it's surprisingly hard to define. Most people know these simply as “soft story buildings,” borrowing a term from ASCE 7 and ASCE 41, and that quickly reveals the problem in Chapter A4. As ASCE 7 and FEMA P-807 (Seismic Evaluation and Retrofit of Multi-Unit Wood-Frame Buildings With Weak First Stories, 2012) make clear, the issue is a collapse-prone whole story, a combination of lateral and torsional vulnerability. Yet the current definitions in Chapter A4 relate only to individual wall lines. Further, the quantitative aspects of the definitions conflict with the retrofit criteria; it is possible to satisfy the Chapter A4 design criteria and still have a soft, weak, or open wall line by the current definitions. Finally, by using words and concepts similar to those used in ASCE 7 to define certain irregularities and in ASCE 41 to identify certain deficiencies, these Chapter A4 definitions create confusion about how those standards apply (or don't). Each of the definitions presents its own specific problems as well:

- OPEN WALL LINE is problematic because it is both under- and over-prescribed. Does “without vertical elements” mean there must be zero wall length for the wall line to be considered “open”? If there’s ample wall length, but it’s all stucco and gypsum board (not allowed for the retrofit by Section A403.9.1), does that count? If not, isn’t every wall line of a stucco building “open”? And what is the basis for the “25 percent” rule? Clearly this “definition” is relying on a lot of judgment, both from the code writers and the evaluating engineer. That’s ok, but let’s not pretend the definition is cut and dried.

- SOFT WALL LINE is confusingly defined two ways, first in absolute terms as a wall line that merely lacks the required stiffness, and second in relative terms by comparison of one story to the next (borrowing, but straying from the similar definitions in ASCE 7 and ASCE 41). The absolute definition is circular: a wall line is subject to Chapter A4 if it doesn’t satisfy Chapter A4, so you can’t know if the Chapter is necessary until you’ve done all the work. Since the definition is meant to establish (per Section A401.2) whether the chapter even applies, this tautology is not helpful. The relative definition is problematic first because it might not find the same buildings as the absolute definition but also because there is no consistent way to determine the stiffness of either story if, as Section A403.9.1 specifies, stucco and gypsum board are not to be considered. Many buildings that would benefit from Chapter A4 have nothing but stucco and gypsumboard, so is their upper story stiffness zero? If so, how can the first story stiffness be less than 70 percent of that? Finally, if a soft wall line is any wall line in a soft story, does that mean the wall lines normal to the soft direction are also deficient? Even if only wall lines in the critical direction are considered, is every wall line aligned in the weak direction considered a weak wall line that must be stiffened?

- WEAK WALL LINE uses only a relative definition, but it poses similar problems. What is the story strength if nonconforming materials must be ignored in accordance with Section A403.9.1? And which wall lines in a weak story are considered the weak ones that need to be strengthened through retrofit?

The solution to these problems is to use terminology that 1) does not twist similar terms from ASCE 7, 2) does not conflict with other provisions in the chapter, 3) allows a determination of Chapter applicability without conflicting with the design criteria, and 4) identifies the critical deficiency as a story issue, not a line issue.

The proposed definition of TARGET STORY satisfies these criteria. This definition (or similar) was developed to resolve issues that arose from applying Chapter A4 to a variety of vulnerable wood-frame residential buildings in California, and it is now in use by retrofit programs covering thousands of buildings in San Francisco, Berkeley, and Oakland. Features of the proposed new term:

1. Diaphragm aspect ratio $L/W$ is less than 0.67, where $W$ is the diaphragm dimension parallel to the soft, weak or open front wall line target story critical direction and $L$ is the distance in the orthogonal direction between that perimeter wall line and the rear wall of the ground floor open area.
2. Minimum length of side shear walls = 20 feet (6096 mm).
3. Minimum length of rear shear wall = three-fourths of the total rear wall length.
4. Plan or vertical irregularities shall not be other than a soft, weak or open front wall line, those associated with the target story.
5. Roofing weight less than or equal to 5 pounds per square foot (240 N/m²).
6. Aspect ratio of the full second floor diaphragm meets the requirements of the building code for new construction.

Reason: This proposal replaces three troublesome definitions unique to Chapter A4 with a more concise term already proven feasible in retrofit programs involving thousands of structures.

The proposal looks like it's big and makes a complicated change. It's actually straightforward and largely editorial – just an improvement in terminology. The three problematic definitions – open-front wall line, soft wall line, and weak wall line – are actually not that important to the substance of Chapter A4. Their purpose is merely to describe the buildings to which the chapter applies. Their job is to get you properly into the chapter, but they are not needed to get you out, as they are not used to measure compliance. Similarly, the definition and use of TARGET STORY proposed here is merely to identify candidate buildings. It will have no impact at all on the retrofit criteria or the resulting retrofit designs.

The three definitions represent attempts nearly 25 years ago to define the building type of interest. It’s one every engineer in earthquake country knows by sight, but it’s surprisingly hard to define. Most people know these simply as “soft story buildings,” borrowing a term from ASCE 7 and ASCE 41, and that quickly reveals the problem in Chapter A4. As ASCE 7 and FEMA P-807 (Seismic Evaluation and Retrofit of Multi-Unit Wood-Frame Buildings With Weak First Stories, 2012) make clear, the issue is a collapse-prone whole story, a combination of lateral and torsional vulnerability. Yet the current definitions in Chapter A4 relate only to individual wall lines. Further, the quantitative aspects of the definitions conflict with the retrofit criteria; it is possible to satisfy the Chapter A4 design criteria and still have a soft, weak, or open wall line by the current definitions. Finally, by using words and concepts similar to those used in ASCE 7 to define certain irregularities and in ASCE 41 to identify certain deficiencies, these Chapter A4 definitions create confusion about how those standards apply (or don’t). Each of the definitions presents its own specific problems as well:

- OPEN WALL LINE is problematic because it is both under- and over-prescribed. Does “without vertical elements” mean there must be zero wall length for the wall line to be considered “open”? If there’s ample wall length, but it’s all stucco and gypsum board (not allowed for the retrofit by Section A403.9.1), does that count? If not, isn’t every wall line of a stucco building “open”? And what is the basis for the “25 percent” rule? Clearly this “definition” is relying on a lot of judgment, both from the code writers and the evaluating engineer. That’s ok, but let’s not pretend the definition is cut and dried.

- SOFT WALL LINE is confusingly defined two ways, first in absolute terms as a wall line that merely lacks the required stiffness, and second in relative terms by comparison of one story to the next (borrowing, but straying from the similar definitions in ASCE 7 and ASCE 41). The absolute definition is circular: a wall line is subject to Chapter A4 if it doesn’t satisfy Chapter A4, so you can’t know if the Chapter is necessary until you’ve done all the work. Since the definition is meant to establish (per Section A401.2) whether the chapter even applies, this tautology is not helpful. The relative definition is problematic first because it might not find the same buildings as the absolute definition but also because there is no consistent way to determine the stiffness of either story if, as Section A403.9.1 specifies, stucco and gypsum board are not to be considered. Many buildings that would benefit from Chapter A4 have nothing but stucco and gypsumboard, so is their upper story stiffness zero? If so, how can the first story stiffness be less than 70 percent of that? Finally, if a soft wall line is any wall line in a soft story, does that mean the wall lines normal to the soft direction are also deficient? Even if only wall lines in the critical direction are considered, is every wall line aligned in the weak direction considered a weak wall line that must be stiffened?

- WEAK WALL LINE uses only a relative definition, but it poses similar problems. What is the story strength if nonconforming materials must be ignored in accordance with Section A403.9.1? And which wall lines in a weak story are considered the weak ones that need to be strengthened through retrofit?

The solution to these problems is to use terminology that 1) does not twist similar terms from ASCE 7, 2) does not conflict with other provisions in the chapter, 3) allows a determination of Chapter applicability without conflicting with the design criteria, and 4) identifies the critical deficiency as a story issue, not a line issue.

The proposed definition of TARGET STORY satisfies these criteria. This definition (or similar) was developed to resolve issues that arose from applying Chapter A4 to a variety of vulnerable wood-frame residential buildings in California, and it is now in use by retrofit programs covering thousands of buildings in San Francisco, Berkeley, and Oakland. Features of the proposed new term:
• By considering partial basements and unfinished underfloor areas, it accounts for common conditions of sloped sites.

• It considers the whole story, not just individual wall lines, thus incorporating the lessons of FEMA P-807 and better matching the spirit of the ASCE 7 and ASCE 41 concepts without appropriating their terminology.

• It is relative, comparing a lower story to the story above it. This is consistent with the intent of Chapter A4 to capture not just over-stress or high drift, but likely concentrations of lateral deformation that lead to P-delta collapse.

• It is based on vulnerable wood-frame construction, eliminating confusion about whether Chapter A4 should apply (it should not) to a building with an open front but with full-height CMU first story walls.

By using “significant” and “substantially,” the definition relies on the judgment of the evaluator or retrofit designer and on that of the code official. This is likely to be a point of concern for some, but it shouldn’t be, as there is ample precedent for use of these words. “Significant” or “substantial” appears in plenty of IBC and IEBC definitions (dangerous, Risk Category III, dry floodproofing, health hazard, live/work unit, thermosetting material) and provisions (IBC 408.8.4 re smoke-tight doors, IBC 909.10.2 re ducts, IBC 1106.6 re accessible parking, IEBC 1301.6.3 re fire doors, IEBC A106.1 re “significant cracking”, IEBC A304.2 and C103.1 re wood defects, etc.).

Further, the work contemplated by Chapter A4 is not do-it-yourself. It requires a design professional and a building permit, so it is appropriate for the chapter to rely on the judgment of professionals. In the case of “soft story” buildings, as noted above, there is ample reference material available without the need for a quantitative definition. Indeed, the current definitions were developed with certain Southern California building styles and configurations in mind, but they have proven inadequate for equally eligible buildings on sloped sites or of older styles and materials. The more generic definition of TARGET STORY is an improvement, even if it relies to a degree on engineering and code official judgment.

Finally, as noted above, the definition and use of TARGET STORY proposed here is merely to identify candidate buildings. It has no impact at all on the retrofit criteria or the resulting retrofit designs.

Ultimately, the proof is in the programs. Over the last five years, thousands of “soft story” evaluations and retrofits have been done using a definition of TARGET STORY essentially identical to the one proposed here. San Francisco screened over 6000 buildings on the basis of this judgmental definition with broad success and essentially 100% compliance.

To implement this improvement in terminology, the proposal would make the following changes:

• The chapter title, Section A401.2, A403.2, and A404.1.1 are changed to replace “soft, weak or open-front" with the new term, “target story.” Note that in Section A401.2, it is no longer necessary to reference the existence of a story above, as that condition is built into the new definition of TARGET STORY.

• Section A402.1: The three definitions are deleted, and the new definition is added.

• Section A403.2: The critical diaphragm is properly identified as the one “at the top of” the target story, not the one “immediately above” it. This is because the definition of STORY from the IBC includes the diaphragm above.

• Section A403.2 Exception and Section A404.1.1: The critical direction is properly described. With the current definitions, there is no “open, weak or soft direction” defined.

• Section A403.9.1: The proposal clarifies the intent of the section, regardless of terminology. The current chapter does not define a soft, weak, or open-front story; those terms are currently used only to define specific wall lines. Further, nothing in Chapter A4 requires the retrofit elements to be located along the specific wall lines identified as soft, weak, or open-front, so the limitation intended by this section should not apply only there.

• Section A404: The Section title is corrected. Even with the current definitions, Section A404 applies to more than just weak stories. Also note: “weak story” is not defined.

Note that Section A403.3, which refers to soft story and weak story irregularities, is not changed, because these correct references are to the terms defined in ASCE 7.

**Cost Impact:** The code change proposal will not increase or decrease the cost of construction
Terminology change and will not change the cost of construction.
Proponent: David Bonowitz, representing Self (dbonowitz@att.net)

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

2018 International Existing Building Code

[BS] A403.2 Scope of analysis. This chapter requires the alteration, repair, replacement or addition of structural elements and their connections to meet the strength and stiffness requirements herein. The lateral load-path analysis shall include the resisting elements and connections from the wood diaphragm immediately above any soft, weak or open-front wall lines to the foundation soil interface or to the uppermost story of a podium structure comprised of steel, masonry, or concrete structural systems that supports the upper, wood-framed structure. Stories above the uppermost story with a soft, weak, or open-front wall line shall be considered in the analysis but need not be modified. The lateral load-path analysis for added structural elements shall include evaluation of the allowable soil-bearing and lateral pressures in accordance with the building code. Where any portion of a building within the scope of this chapter is constructed on or into a slope steeper than one unit vertical in three units horizontal (33-percent slope), the lateral force-resisting system at and below the base level diaphragm shall be analyzed for the effects of concentrated lateral forces at the base caused by this hillside condition.

Exception: Where an open-front, weak or soft wall line exists because of parking at the ground floor of a two-story building and the parking area is less than 20 percent of the ground floor area, then only the wall lines in the open, weak or soft directions of the enclosed parking area need comply with the provisions of this chapter.

Reason: This proposal removes an unnecessary and obsolete exception. The exception is unnecessary because the buildings for which it was intended can often be shown to be acceptable (that is, not possessing any of Chapter A4’s targeted deficiencies) and are already afforded a simplified prescriptive solution in Section A404. The exception is obsolete because it improperly focuses on individual wall lines. As shown in FEMA P-807 (May 2012), Seismic Evaluation and Retrofit of Multi-Unit Wood-Frame Buildings With Weak First Stories, it is important to consider full-story behavior, including possible torsion, so any reduced retrofit scope should be justified by full-story calculations.

Finally, the “20 percent” criterion and the reference to an “enclosed parking area” are too vague. While originally conceived for buildings with parking only in one end bay, the provision as written could apply to any number of collapse-prone wall configurations for which the prescriptive exception might not be adequate.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. The alternative solution allowed by the exception might reduce the design cost slightly, but it would not likely change the construction cost. In some cases, deleting the exception as proposed could even decrease the construction cost.
Delete without substitution:

[B] GROUND FLOOR. Any floor whose elevation is immediately accessible from an adjacent grade by vehicles or pedestrians. The ground floor portion of the structure does not include any floor that is completely below adjacent grades.

Revise as follows:

[B] A403.2 Scope of analysis. This chapter requires the alteration, repair, replacement or addition of structural elements and their connections to meet the strength and stiffness requirements herein. The lateral load-path analysis shall include the resisting elements and connections from the wood diaphragm immediately above any soft, weak or open-front wall lines to the foundation soil interface or to the uppermost story of a podium structure comprised of steel, masonry, or concrete structural systems that supports the upper, wood-framed structure. Stories above the uppermost story with a soft, weak, or open-front wall line shall be considered in the analysis but need not be modified. The lateral load-path analysis for added structural elements shall include evaluation of the allowable soil-bearing and lateral pressures in accordance with the building code. Where any portion of a building within the scope of this chapter is constructed on or into a slope steeper than one unit vertical in three units horizontal (33-percent slope), the lateral force-resisting system at and below the base level diaphragm shall be analyzed for the effects of concentrated lateral forces at the base caused by this hillside condition.

Exception: Where an open-front, weak or soft wall line exists because of parking at the ground floor of grade in a two-story building and the parking area is less than 20 percent of the ground floor area, then only the wall lines in the open, weak or soft directions of the enclosed parking area need comply with the provisions of this chapter.

[B] A404.1 Limitation. These prescriptive measures shall apply only to two-story buildings and only where deemed appropriate by the code official. These prescriptive measures rely on rotation of the second floor diaphragm to distribute the seismic load between the side and rear walls of the ground a ground floor open area. In the absence of an existing floor diaphragm of wood structural panel or diagonal sheathing at the top of the first story, a new wood structural panel diaphragm of minimum thickness of 3/8 inch (19.1 mm) and with 10d common nails at 6 inches (152 mm) on center shall be applied.

Reason: This proposal is editorial. It removes an unnecessary term used confusingly in two places in Chapter A4, replacing it with clearer, more consistent wording that better conveys the intent. The current definition of GROUND FLOOR includes the phrase, “immediately accessible from an adjacent grade.” What does this mean? It has nothing to do with disabled access. Rather, it is meant to indicate typical grade- or street-level parking. But does it include a ramp? Does it include a main floor or two steps up from grade? Does it include a floor that is at grade in one part of building but above or below grade in the rest of the building due to a sloped site? Fortunately, we need not resolve these questions because the term is used in only two places in Chapter A4, and the intent in both places can be better conveyed simply by using common words that can be understood in context, without a special definition.

In the exception to Section A403.2, the proposal replaces “at the ground floor” with “at grade.” This has a common meaning appropriate to the context, and it eliminates confusion over a needlessly complicated definition.

In Section A404.1, two small edits clarify the intent. The walls of interest are “around” the area of interest, and the floor diaphragm of interest is the one at the top of the critical story, not the “ground floor.” By eliminating the definition of GROUND FLOOR, the phrase “ground floor open area” in Section A404.1 and again in A404.1.1 can take on its common sense meaning as a portion of floor area, without undue focus on grade issues. Any complications due to sloping grade, etc. can be resolved by this section’s reliance on approval by the code official.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This is an editorial clarification of intent which will not change cost of construction.

Proposal # 5714

EB154-19
2018 International Existing Building Code

[BS] A403.3 Design base shear and design parameters. The design base shear in a given direction shall be permitted to be 75 percent of the value required for similar new construction in accordance with the building code. The value of \( R \) used in the design of the strengthening of any story shall not exceed the lowest value of \( R \) used in the same direction at any story above. The system overstrength factor, \( \Delta \), and the deflection amplification factor, \( C_d \), shall be not less than the largest respective value corresponding to the \( R \) factor being used in the direction under consideration.

Exceptions:

1. For structures assigned to Seismic Design Category B, values of \( R \), \( \Delta \) and \( C_d \) shall be permitted to be based on the seismic force-resisting system being used to achieve the required strengthening.

2. For structures assigned to Seismic Design Category C or D, values of \( R \), \( \Delta \) and \( C_d \) shall be permitted to be based on the seismic force-resisting system being used to achieve the required strengthening, provided that when the strengthening is complete, the strengthened structure will not have an extreme weak story irregularity defined as Type 5b in ASCE 7, Table 12.3-2.

3. For structures assigned to Seismic Design Category E, values of \( R \), \( \Delta \) and \( C_d \) shall be permitted to be based on the seismic force-resisting system being used to achieve the required strengthening, provided that when the strengthening is complete, the strengthened structure will not have an extreme soft story, a weak story, or an extreme weak story irregularity defined, respectively, as Types 1b, 5a and 5b in ASCE 7, Table 12.3-2.

4. For retrofit systems involving different seismic force-resisting systems in the same direction within the same story, resisting elements are permitted to be designed using the least value of \( R \) for the different structural systems found in each independent line of resistance if the following conditions are met: (1) The building is assigned to Risk Category I or II (2) The building height is no more than four stories above grade plane, and (3) the seismic force-resisting systems of the retrofitted building comprise only wood structural panel shear walls, steel moment-resisting frames, steel cantilever columns, and steel braced frames. Values for \( C_d \) and \( \Omega_0 \) shall be consistent with the \( R \) value used.

Reason: This proposal adds an exception that effectively allows different structural systems to be combined for retrofit without the restrictions that would apply in new construction.

The concept has been vetted with analytical studies by the Structural Engineers Association of Northern California Existing Buildings Committee and has been implemented as proposed here by retrofit programs affecting thousands of buildings in San Francisco, Berkeley, and Oakland, California.

This allows the effective use of typical retrofit schemes that involve different structural systems on different lines. Without this exception, a retrofit using an intermediate or ordinary steel frame along one line and wood structural panels elsewhere would be forced to over-design the wood elements. Studies by the SEAONC EBC showed that combining systems as proposed here would not result in worse performance.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

This proposal will decrease the cost of construction by allowing more efficient use of materials and avoiding unnecessary overdesign."
Proponent: David Bonowitz, representing Self (dbonowitz@att.net)

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

2018 International Existing Building Code

[BS] A403.3 Design base shear and design parameters. The design base shear in a given direction shall be permitted to be 75 percent of the value required for similar new construction in accordance with the building code. The value of $R$ used in the design of the strengthening of any story shall not exceed the lowest value of $R$ used in the same direction at any story above. The system overstrength factor, $\Delta_0$, and the deflection amplification factor, $C_d$, shall not be less than the largest respective value corresponding to the $R$ factor being used in the direction under consideration.

Exceptions:

1. For structures assigned to Seismic Design Category B, values of $R$, $\Delta_0$, and $C_d$ shall be permitted to be based on the seismic force-resisting system being used to achieve the required strengthening.
2. For structures assigned to Seismic Design Category C or D, values of $R$, $\Delta_0$, and $C_d$ shall be permitted to be based on the seismic force-resisting system being used to achieve the required strengthening, provided that when the strengthening is complete, the strengthened structure will not have an extreme weak story irregularity defined as Type 5b in ASCE 7, Table 12.3-2.
3. For structures assigned to Seismic Design Category E, values of $R$, $\Delta_0$, and $C_d$ shall be permitted to be based on the seismic force-resisting system being used to achieve the required strengthening, provided that when the strengthening is complete, the strengthened structure will not have an extreme soft story, a weak story, or an extreme weak story irregularity defined, respectively, as Types 1b, 5a and 5b in ASCE 7, Table 12.3-2.
4. With reference to ASCE 7 Table 12.2-1, building height limitations on seismic force-resisting systems are not applicable where those systems are used only for retrofit to comply with the requirements of this Chapter.

Reason: This proposal adds an exception that allows typical retrofit solutions to be used without the restrictions that would apply in new construction.

The concept has been vetted by the Structural Engineers Association of Northern California Existing Buildings Committee and has been implemented as proposed here by retrofit programs affecting thousands of buildings in San Francisco, Berkeley, and Oakland, California.

The proposed exception recognizes that height limits applicable when certain structural systems are used for a whole building should not apply when the same system is used only within a single story, which is the case with retrofit under Chapter A4. In this regard, the proposed exception is like current Exceptions 1 through 3, in that it decouples the design of the new retrofit system from non-conforming conditions in the existing structure.

Cost Impact: The code change proposal will not increase or decrease the cost of construction.

This proposal will decrease the cost of construction by waiving inapplicable limits and allowing more choices for retrofit systems.

Proposal # 5712
2018 International Existing Building Code

[BS] A403.3 Design base shear and design parameters. The design base shear in a given direction shall be permitted to be 75 percent of the value required for similar new construction in accordance with the building code. The value of $R$ used in the design of the strengthening of any story shall not exceed the lowest value of $R$ used in the same direction at any story above. The system overstrength factor, $\Delta Q_d$ and the deflection amplification factor, $C_d$, shall be not less than the largest respective value corresponding to the $R$ factor being used in the direction under consideration.

Exceptions:

1. For structures assigned to Seismic Design Category B, values of $R$, $\Delta Q_d$, and $C_d$ shall be permitted to be based on the seismic force-resisting system being used to achieve the required strengthening.
2. For structures assigned to Seismic Design Category C or D, values of $R$, $\Delta Q_d$, and $C_d$ shall be permitted to be based on the seismic force-resisting system being used to achieve the required strengthening, provided that when the strengthening is complete, the strengthened structure will not have an extreme weak story irregularity defined as Type 5b in ASCE 7, Table 12.3-2.
3. For structures assigned to Seismic Design Category E, values of $R$, $\Delta Q_d$, and $C_d$ shall be permitted to be based on the seismic force-resisting system being used to achieve the required strengthening, provided that when the strengthening is complete, the strengthened structure will not have an extreme soft story, a weak story, or an extreme weak story irregularity defined, respectively, as Types 1b, 5a and 5b in ASCE 7, Table 12.3-2.

[BS] A407.1 Structural observation, testing and inspection. Structural observation, in accordance with Section 1709.1704.6 of the International Building Code, shall be required for all structures in which seismic retrofit is being performed in accordance with this chapter. Structural observation shall include visual observation of work for conformance to the approved construction documents and confirmation of existing conditions assumed during design. Structural testing and inspection for new construction materials shall be in accordance with the building code, except as modified by this chapter.

[BS] A406.3.2 Framing plan elements. The framing plan shall include the length, location and material of shear walls; the location and material of frames; references or details for the column-to-beam connectors, beam-to-wall connections and shear transfers at floor and roof diaphragms; and the required nailing and length for wall top plate splices.

[BS] A406.3.3 Shear wall schedule, notes and details. Shear walls shall have a referenced schedule on the plans that includes the correct shear wall capacity in pounds per foot (N/m); the required fastener type, length, gage and head size; and a complete specification for the sheathing material and its thickness. The schedule shall also show the required location of 3-inch (76 mm) nominal or two 2-inch (51 mm) nominal edge members; the spacing of shear transfer elements such as framing anchors or added sill plate nails; the required hold-down with its bolt, screw or nail sizes; and the dimensions, lumber grade and species of the attached framing member. Notes shall show required edge distance for fasteners of structural wood panels and framing members; required flush nailing at the plywood surface; limits of mechanical penetrations; and the sill plate material assumed in the design. The limits of mechanical penetrations shall be detailed showing the maximum notching and drilled hole sizes.


Cost Impact: The code change proposal will not increase or decrease the cost of construction. The proposal is editorial only.
THIS CODE CHANGE WILL BE HEARD BY THE IBC STRUCTURAL COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.

2018 International Existing Building Code

Delete without substitution:

[BS] STORY STRENGTH. The total strength of all seismic-resisting elements sharing the same story shear in the direction under consideration.

[BS] WEAK WALL LINE. A wall line in a story where the story strength is less than 80 percent of the story above in the direction under consideration. For purposes of this definition, nonconforming structural materials shall not be considered.

Add new text as follows:

403.3.1 Expected story strength. Despite any other requirement of Section A403.3 or A403.4, the total expected strength of retrofit elements added to any story need not exceed 1.7 times the expected strength of the story immediately above in a two-story building, or 1.3 times the expected strength of the story immediately above in a three-story or taller building, as long as the retrofit elements are located symmetrically about the center of mass of the story above or so as to minimize torsion in the retrofitted story. Calculation of expected story strength and identification of irregularities in Section A403.3 shall be based on the expected strength of all wall lines, even if sheathed with nonconforming materials. The strength of a wall line shall be permitted to be reduced to account for inadequate load path or overturning resistance.

Revise as follows:

[BS] A403.9.1 Gypsum or cement plaster products. Gypsum or cement plaster products shall not be used to provide lateral resistance in a soft or weak story or in a story with an open-front wall line, whether or not new elements are added to mitigate the soft, weak or open-front condition; the strength required by Section A403.3 or the stiffness required by Section A403.4.

[BS] A406.2 Existing construction. The plans shall show existing diaphragm and shear wall sheathing and framing materials; fastener type and spacing; diaphragm and shear wall connections; continuity ties; collector elements; and the portion of the existing materials that needs verification during construction. If the cap allowed by Section A403.3.1 is used to limit the scope of retrofit, the foregoing information shall be shown for each retrofitted story and at least one story above the uppermost retrofitted story. If the cap allowed by Section A403.3.1 is not used, the foregoing information need only be shown for each retrofitted story and for the floor at the top of that story.

Reason: This proposal introduces a concept from FEMA P-807 (May 2012), Seismic Evaluation and Retrofit of Multi-Unit Wood-Frame Buildings With Weak First Stories. The concept is that over-strengthening of the critical story (typically the ground story) relative to the upper stories is wasteful and, in the worst cases, risks shifting the collapse mechanism to the less ductile upper stories. The concept has been confirmed in multiple analytical studies, has been endorsed by the Structural Engineers Association of Northern California Existing Buildings Committee, and has been implemented as proposed here by retrofit programs affecting thousands of buildings in San Francisco and Berkeley.

To apply the concept to IEBC Appendix A4, the required retrofit strength is capped relative to the calculated strength of the story above, as shown in proposed Section A403.3.1. The cap is optional.

To complete the proposal, the following additional changes are made:

- The unnecessary term STORY STRENGTH is deleted so as not to be confused with the “expected story strength” as used in new Section A403.3.1.
- In current Chapter A4, the term STORY STRENGTH is used only in the definition of WEAK WALL LINE, where it is actually not needed. Nevertheless, the proposal also clarifies this definition to preserve the current intent that nonconforming structural materials are not counted as “seismic-resisting elements” and are therefore not considered where the WEAK WALL LINE definition applies. The new capping provision, however, follows the FEMA P-807 requirement to consider all existing strength contributions.
- If the cap is applied, nonconforming materials must be considered. Therefore, Section A403.9.1, which prohibits nonconforming materials, is clarified to apply only to the basic strength and stiffness, exclusive of the capping provision.
- If the optional cap is applied, then because it relies on the existing conditions in the story above, those conditions should be documented as part of the project record, even though no retrofit is performed there. Section A406.2 is modified to make this documentation requirement.

Finally, note that the proposed text refers in several places to the “retrofitted story.” If the term “target story” is approved through a separate proposal, it would be preferable to replace all incidents of “retrofitted story” with “target story.”

Cost Impact: The code change proposal will not increase or decrease the cost of construction

The cap is optional. If used, it could decrease the cost of construction.
EB159-19
IEBC®: A403.3.1 (New)

Proponent: David Bonowitz, representing Self (dbonowitz@att.net)

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

2018 International Existing Building Code

Add new text as follows:

A403.3.1 Seismicity parameters, Site Class, and geologic hazards. For any site designated as Site Class E, the value of $F_s$ shall be taken as 1.3. Site-specific procedures are not required for compliance with this chapter. Mitigation of existing geologic site hazards such as liquefiable soil, fault rupture, or landslide is not required for compliance with this chapter.

Reason: This proposal clarifies the intended scope of Chapter A4. The proposed clarifications have been vetted by the Structural Engineers Association of Northern California Existing Buildings Committee (SEAONC EBC) and have been implemented as proposed here by retrofit programs affecting thousands of buildings in San Francisco, Berkeley, and Oakland, California. The first two sentences simplify the application of IBC Section 1613.2 or ASCE 7 Section 11.4 to these retrofit projects, helping to keep them economically feasible. The value of $F_s = 1.3$, which is the default value for Site Class E in areas of high (but not highest or near-fault) seismicity, comes from a SEAONC EBC recommendation related to observed performance and recorded ground motions in the Loma Prieta earthquake. This value is allowed as a possibly conservative convenience, avoiding the need for expensive site-specific investigation (per ASCE 7 Table 11.4-1 and Section 11.4.8). Site-specific investigation remains an option, but is not required. This simplification is consistent in principle with the exceptions and waivers already provided in ASCE 7 Sections 11.4.8 and 20.3.1.

The site-specific ground motion procedures normally required by ASCE 7 Section 11.4.8 are waived for these retrofit projects. Many buildings eligible for Chapter A4 would be exempt from site response analysis by the exception to ASCE 7 Section 20.3.1.

The final proposed sentence clarifies that mitigation beyond the critical collapse-prone story is not intended by Chapter A4. Just as the chapter requires no retrofit above the critical story and no mitigation of nonstructural hazards, the proposal would waive geologic hazard mitigation that might be required for new construction or for more comprehensive triggered retrofits. Consistent with the limited scope of Chapter A4, these clarifications regarding geologic hazards are intended to keep Chapter A4 retrofits cost-effective.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
In some cases, it will decrease the cost of construction by avoiding the cost of investigation and mitigation. In some cases it will increase the cost of construction by defaulting to a possibly conservative value.
EB160-19
IEBC®: [BS] A403.7

Proponent: David Bonowitz, representing Self (dbonowitz@att.net)

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

2018 International Existing Building Code
Delete without substitution:

[BS] A403.7 Collector elements. Collector elements shall be provided that can transfer the seismic forces originating in other portions of the building to the elements within the scope of Section A403.2 that provide resistance to those forces.

Reason: This proposal removes a provision that is both unnecessary and confusing. Section A403.7, while well-intended, is unnecessary because Section A403.1 already requires design in accordance with the IBC, and Section A403.6 already calls for ties and continuity that would include collectors where needed. Section A403.7 is also potentially confusing because it refers to “other portions of the building,” in conflict with Section A403.2, which clearly waives any modification above the uppermost retrofitted story.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

This section is unnecessary as it is already required by the IBC. The proposal merely removes a redundant and confusing provision.

Proposal # 5775
EB161-19

IEBC®: [BS] A403.8

Proponent: David Bonowitz, representing Self (dbonowitz@att.net)

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

2018 International Existing Building Code

Delete and substitute as follows:

[BS] A403.8 Horizontal diaphragms. The strength of an existing horizontal diaphragm sheathed with wood structural panels or diagonal sheathing need not be investigated unless the diaphragm is required to transfer lateral forces from vertical elements of the seismic force-resisting system above the diaphragm to elements below the diaphragm because of an offset in placement of the elements. Rotational effects shall be accounted for where asymmetric wall stiffness increases shear demands.

[BS] A403.8 Floor diaphragms. Floor diaphragms within the scope of Section A403.2 shall be shown to have adequate strength at the following locations:

1. For straight lumber sheathed diaphragms without integral hardwood flooring: Throughout the diaphragm. The code official is authorized to waive the requirement where the condition occurs only in relatively small portions of each residential unit.
2. For other diaphragms: At locations where forces are transferred between the diaphragm and a new or strengthened vertical element of the seismic force-resisting system. Collector elements may be provided to distribute the transferred force over a greater length of diaphragm.

Exception: Where the existing vertical elements of the seismic force-resisting system are shown to comply with this chapter, diaphragms need not be evaluated.

Reason: This proposal clarifies the chapter’s intent regarding the need for diaphragm strengthening. The current provision focuses on locations where the walls above and below the diaphragm are offset from each other, but this can be read improperly to mean the entire diaphragm since a lack of stacked walls in the lower story is typically what makes a building a candidate for Chapter A4. Instead, the focus should be on proper force transfer between the critical diaphragm and the new or existing wall lines below.

The proposal implements a recommendation by the Structural Engineers Association of Northern California Existing Buildings Committee that has already been adopted by retrofit programs affecting thousands of buildings in San Francisco, Berkeley, and Oakland, California.

The proposal recognizes that diaphragms are rarely the critical elements in these buildings. In many cases, the proposed requirement will require less work than the current provision. This is appropriate for the limited objective of Chapter A4.

The proposal also adds clarity by stating requirements for vulnerable diaphragm types that the current provision only implies.

Straight lumber sheathed diaphragms without integral hardwood flooring are weaker and more flexible than other diaphragm systems. Though there are no known collapses due to this condition, expected poor performance could compromise the building's ability to meet even the limited objective of Chapter A4. Integral hardwood flooring – but not newer “floating” wood flooring – provides significant added strength and stiffness. Even in buildings with original hardwood flooring, some remodeled, carpeted, or tiled areas might have had the original wood flooring removed. Areas of the diaphragm that form a roof for the critical story (such as the portion of a garage that extends beyond the wall line above, or at a lightwell or building setback) are also unlikely to have hardwood flooring to supplement the straight sheathing. Small isolated areas without hardwood flooring are not expected to affect overall building performance, so the provision grants a waiver for these cases.

For less vulnerable diaphragm types, the provision requires a local check for each new or strengthened SFRS element but does not require an overall analysis of the full diaphragm. Diaphragm capacity need not be checked at existing vertical elements that are not strengthened because (except for straight lumber sheathed diaphragms) it is assumed that the unit capacities of the existing vertical elements and the diaphragm are comparable.

The exception waives any retrofit of the diaphragms if the existing walls and frames are already found adequate.

Cost Impact: The code change proposal will not increase or decrease the cost of construction In some cases, it could decrease the cost of construction as it may require less work than the current provisions.

Proposal # 5776
EB162-19

IEBC®: [BS] A403.9, [BS] A403.9.1

Proponent: David Bonowitz, representing Self (dbonowitz@att.net)

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

2018 International Existing Building Code

Revise as follows:

[BS] A403.9 Wood-framed shear walls. Wood-framed shear walls shall have strength and stiffness sufficient to resist the seismic loads and shall conform to the requirements of this section. Where new sheathing is applied to existing studs to create new wood-framed shear walls, the new wall elements shall be designed as bearing wall systems.

[BS] A403.9.1 Gypsum or cement plaster products. Gypsum or cement plaster products shall not be used to provide lateral resistance in a soft or weak story or in a story with an open-front wall line, whether or not new elements are added to mitigate the soft, weak or open-front condition, the strength required by Section A403.3 or the stiffness required by Section A403.4.

Reason: This proposal clarifies the chapter’s design requirements.

Section A403.9: Since existing studs are presumed to carry existing gravity loads, the walls they frame must be considered bearing walls, as opposed to “building frame” systems. This affects the selection of seismic design coefficients R, C, and Ω.

Section A403.9.1: The proposal clarifies the intent of the section, regardless of terminology, combined systems, etc. In particular, the chapter does not define a soft, weak, or open-front story; those terms are currently used only to define specific wall lines. Further, nothing in Chapter A4 requires the retrofit elements to be located along the specific wall lines identified as soft, weak, or open-front, so the limitation intended by this section should not apply only there.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This proposal is simply a clarification.
EB163-19
IEBC®: A403.10 (New), A403.10.1 (New), A403.10.2 (New), A403.10.3 (New), A403.10.4 (New), AISC (New)

Proponent: David Bonowitz, representing Self (dbonowitz@att.net)

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

2018 International Existing Building Code

Add new text as follows:

A403.10 Steel retrofit systems. Steel retrofit systems shall have strength and stiffness sufficient to resist the seismic loads and shall conform to the requirements of this section.

A403.10.1 Special moment frames. Steel special moment frames shall comply with all applicable provisions of AISC 341, except that the “strong-column/weak-beam” provision of AISC 341-10, Section E3.4a is waived for columns that carry no gravity load. Proprietary frame systems that qualify as special moment frames shall be permitted.

A403.10.2 Intermediate or ordinary moment frames. Steel intermediate or ordinary moment frames shall comply with all applicable provisions of AISC 341.

A403.10.3 Cantilevered column systems. Steel special or ordinary cantilevered column systems shall comply with all applicable provisions of AISC 341.

A403.10.4 Inverted moment frame systems. Cantilevered column systems shall be permitted to be designed as inverted special, intermediate, or ordinary moment frames, with corresponding moment frame seismic design coefficients, where the system satisfies the following conditions:

1. The columns carry no gravity load.
2. The columns are configured in pairs or larger groups connected by a continuous reinforced concrete foundation or grade beam.
3. The foundation or grade beam shall be designed to resist the expected plastic moment at the base of each column, computed as $R_{FZ}$ in accordance with AISC 341.
4. The flexibility of the foundation or grade beam, considering cracked section properties of the reinforced concrete, shall be included in computing the deformation of the steel frame system.
5. The column height shall be taken as twice the actual height when checking lateral torsional buckling.

Add new standard(s) as follows:

AISC

341-16: Seismic Provisions for Structural Steel Buildings

Reason: This proposal adds details for structural systems commonly used in Chapter A4 retrofits. The proposal implements a recommendation by the Structural Engineers Association of Northern California Existing Buildings Committee that has already been adopted by retrofit programs affecting thousands of buildings in San Francisco, Berkeley, and Oakland, California. The inverted moment frame (proposed Section A403.10.4) is a modification of traditional cantilevered column systems. Cantilevered column systems for new construction are normally assigned seismic design coefficients that severely limit their use. When used for retrofit of wood frame structures, however, the columns are less vulnerable to buckling failure because they carry no gravity load. SEAONC EBC has therefore recommended that these cantilever column systems, configured as upside-down moment frame bents (with concrete cross beams), should be allowed to be designed as moment frame systems.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The proposal merely codifies typical practices already in use and shown to be feasible.

Staff Analysis: Note that AISC 341 is new to the IEBC but is currently referenced in the IBC.
Proponent: David Bonowitz, representing Self (dbonowitz@att.net)

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

2018 International Existing Building Code

Revise as follows:

SECTION A406
INFORMATION REQUIRED TO BE ON THE PLANS CONSTRUCTION DOCUMENTS

[BS] A406.1 General. The plans shall show all information necessary for plan review and for construction and, shall accurately reflect the results of the engineering investigation and design, and shall otherwise comply with all requirements established by the code official. The plans shall contain a note that states that this retrofit was designed in compliance with the criteria of this chapter.

Reason: This proposal revises the Chapter A4 administrative requirements to better align with IEBC Section 106 and with practices already adopted by the local building department. The reference to “engineering investigation” is removed to avoid confusion (Chapter A4 does not explicitly require any such investigation) and because the “design” should already account for existing conditions, which are required to be documented per Section A406.2.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This proposal is consistent with Section 106 and is also consistent with local building department practices and therefore will not have an effect on cost.
EB165-19
IEBC®: [BS] A407.1, A407.2 (New), A407.3 (New)

Proponent: David Bonowitz, representing Self (dbonowitz@att.net)

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

2018 International Existing Building Code

[B] A407.1 Structural observation, testing and inspection. Structural observation, in accordance with Section 1704.6 of the International Building Code, shall be required for all structures in which seismic retrofit is being performed in accordance with this chapter. Structural observation shall include visual observation of work for conformance to the approved construction documents and confirmation of existing conditions assumed during design. Structural testing and inspection for new construction materials shall be in accordance with the building code, except as modified by this chapter.

Add new text as follows:

A407.2 Contractor responsibility. Contractor responsibility shall be in accordance with Section 1704.4 of the International Building Code.

A407.3 Testing and inspection. Structural testing and inspection for new construction materials, submittals, reports, and certificates of compliance, shall be in accordance with Sections 1704 and 1705 of the International Building Code. Work done to comply with this chapter shall not be eligible for Exceptions 1, 2, or 3 of International Building Code Section 1704.2 or for the Exception to International Building Code Section 1705.12.2.

Reason: This proposal corrects a code reference and clarifies that typical quality assurance provisions from IBC Chapter 17 apply to Chapter A4 projects. For clarity, the current provision is broken into three subsections. Regarding structural observation, the proposal corrects a mistaken IBC section number and clarifies that the requirement applies despite IBC waivers for buildings of certain heights or assigned to certain seismic design categories.

Regarding the contractor statement of responsibility, proposed Section A407.2 confirms that IBC section 1704.4 applies.

Regarding testing and inspection, proposed Section A407.2 clarifies the existing reference to “the building code” and disallows certain exemptions in IBC Chapter 17 that apply to new construction of a minor nature but should not apply to Chapter A4 retrofits.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. The proposal merely clarifies existing requirements. In rare cases, the cost of testing and inspection might increase slightly.