IBC — Fire Safety

2015 GROUP A PROPOSED CHANGES TO THE I-CODES MEMPHIS COMMITTEE ACTION HEARINGS

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2015 GROUP A – PROPOSED CHANGES TO THE INTERNATIONAL BUILDING CODE – FIRE SAFETY

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TENTATIVE ORDER OF DISCUSSION
2015 PROPOSED CHANGES TO THE INTERNATIONAL BUILDING CODE
(FIRE SAFETY)

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

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FS 1-15

703.4, 703.4 (New)

Proponent: Jeffrey Shapiro, Tyco Fire Protection Products, representing Tyco Fire Protection Products

2015 International Building Code

Delete and substitute as follows:

~~**703.4 Automatic sprinklers.** Under the prescriptive fire-resistance requirements of this code, the *fire-resistance rating* of a building element, component or assembly shall be established without the use of *automatic sprinklers* or any other fire suppression system being incorporated as part of the assembly tested in accordance with the fire exposure, procedures and acceptance criteria specified in ASTM E 119 or UL 263. However, this section shall not prohibit or limit the duties and powers of the *building official* allowed by Sections 104.10 and 104.11.~~

703.4 Automatic Sprinklers Assemblies utilizing fire sprinklers as an alternative to complying with a required fire resistance rating for a building element, component or assembly shall only be permitted where approved by the Building Official in accordance with Sections 104.10 and 104.11.

Reason: This proposal is based on text that was agreed to by major parties on both sides of the sprinklered-protected assembly issue during the last NFPA code cycle. At the second revision meeting of the NFPA Technical Committee on Fire Protection Features, a great deal of effort went into gaining this agreement, and it was supported by a majority of the committee members in attendance. Following the meeting, NFPA distributed the recommendation to the full committee for balloting, and it fell short of the required majority to advance in the process.
Nevertheless, the proposed text provides a cleaner way of conveying the intent of this section, and it warrants consideration by ICC, recognizing that previous efforts to delete the section or argue that it is not needed have not been successful.

This text will make it clear that a sprinkler-protected assembly is an alternative to a fire-resistive assembly that requires approval of the building official, as opposed to being a fire-resistive assembly. This "alternative to" approach is consistent with terminology approved by ICC-ES for inclusion AC385 as a basis for evaluating assemblies that use window sprinklers.

Cost Impact: Will not increase the cost of construction
The proposal simply clarifies current provisions.

FS 1-15 : 703.4-SHAPIRO5682

FS 2-15

703.4

Proponent: Daniel Nichols, New York State Division of Building Standards and Codes, representing New York State Division of Building Standards and Codes (dnichols@dos.state.ny.us)

2015 International Building Code

Delete without substitution:

~~**703.4 Automatic sprinklers.** Under the prescriptive fire-resistance requirements of this code, the *fire-resistance rating* of a building element, component or assembly shall be established without the use of *automatic sprinklers* or any other fire suppression system being incorporated as part of the assembly tested in accordance with the fire exposure, procedures and acceptance criteria specified in ASTM E 119 or UL 263. However, this section shall not prohibit or limit the duties and powers of the *building official* allowed by Sections 104.10 and 104.11.~~

Reason: This proposal deletes language that prohibits the use of automatic sprinklers or other fire suppression systems from being considered in a fire resistance rating of a building material.
The use of fire protection systems, including sprinklers, are used to activate or provide passive fire protection features in several locations in the code, reference standards, and evaluation reports. Examples include:

Dropping magnet power on door hold-open devices when sprinkler flow activates the building notification system

Initiating the activation of fire-resistance rated power dividers to create separate fire areas within a building

Smoke and heat vent activation due to fire detection and/or sprinkler flow

Alternative elevator lobby products that activate due to automatic detector activiation

Water curtains around open escalator openings that are otherwise required to be enclosed

Water curtains on gasketed glass for atrium separation

The activation of all of these products makes each one of them go from no protection to full expected protection because of a fire protection system. Based on a review of the information regarding the inclusion of this code section, the potential failure of a sprinkler system was a main concern in the debate. I submit that the failure rate of sprinklers is the same whether it is part of a passive fire protection system or part of the activation sequence to get a passive fire protection system in place.

In regards to the specific language, it appears the goal was to prohibit the use of any system that utilized automatic sprinklers or fire suppression systems from the prescriptive requirements of this code. This is confusing language as it could be interpreted to only apply to IBC Section 721 (since the direct reference is not provided) or does it apply to all prescriptive designs, such as the UL directories? The language does not make it clear for the building official and, in turn, can potentially confuse the issue on the reference to 104.11.

From an application perspective, the use of automatic sprinkler water curtains has been permitted for many years as a method to increase the allowable openings in buildings (along with all of the above mentioned applications). Allowing sprinkler heads that are part of fire ratings met a need in several applications we have dealt with in New York (based on ES report approved products), including the protection of required openings for light in existing buildings undergoing change of occupancy, and glazing needed for security purposes (both for the visual needs and to address the needs of high-impact glazing).

Thank you for your consideration. I understand that this topic has been fully vetted in previous code development cycles and thorugh the ICC-ES process. However, I believe that the I-Codes should be coordinated to the point that the interaction and reliance between passive and active fire protection systems should be consistent.

Cost Impact: Will not increase the cost of construction
The passage of the proposal will allow more choice in compliance methods for fire rated products.

FS 3-15

703.5.1, Chapter 35

Proponent: Tony Crimi, representing North American Insulation Manufacturers Association (tcrimi@sympatico.ca)

2015 International Building Code

Revise as follows:

703.5.1 Elementary materials. Materials required to be noncombustible shall be tested in accordance with ASTM E 136 or ASTM E2652, using the acceptance criteria in ASTM E136.

Add new standard(s) as follows:

ASTM E2652 - Standard Test Method for Behavior of Materials in a Tube Furnace with a Cone- shaped Airflow Stabilizer, at 750°C.

Reason: Several of the I-Codes have varying definitions of the term "non-combustible material", each based upon the way in which the concept of "non-combustible" is used within that Code. Throughout the ICC code system, the concept of "noncombustible material" is based on the idea that the material should not ignite or burn when subjected to fire or heat

The concept of "noncombustible materials" and "noncombustibility" in terms of types of construction is widely used throughout the International Codes. The IBC, IFC, IEBC and IFGC do not contain a separate definition of "noncombustible", even though they use the terminology "non-combustible materials".

In common usage, the term "noncombustible" is used to denote materials which do not ignite or are not capable of sustaining combustion. The common Dictionary definitions for "noncombustible" are typically as follows:

Noncombustible, adj – incapable of being burned (Merriam -Webster's International Dictionary of the English Language, Unabridged, 2013)

In the traditional use of the terminology and concept of "non-combustible" in the Codes has been based on acceptable performance when tested in accordance with ASTM E136, Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 Degrees C. Materials passing the test are permitted limited flaming and other indications of combustion. However, these have traditional been acceptable. Understandably, ASTM E136 does not replicate the full spectrum of actual building fire exposure conditions. However, this test method does provide an assessment indicating those materials which do not act to aid combustion or add appreciable heat to an ambient fire.

ASTM has recently published another standard ASTM E2652-09, entitled Standard Test Method for Behavior of Materials in a Tube Furnace with a Cone-shaped Airflow Stabilizer, at 750°C. This test method is similar to ASTM E136, but based on the international standard for Noncombustibility. The key difference between the two standards is in the equipment. The apparatuses in this test method and in Test Method E 136 is that the furnace tube in this test method has a conical air-flow stabilizer section attached at its bottom. Both test methods use cylindrical furnace tubes. Unlike ASTM E136, the test ASTM E2652 Standard does not include mandatory pass/fail criterion. It allows those criteria to be determined by the Codes or other users. Appendix X3 also contains a comparison of results obtained from this apparatus versus ASTM E136. ASTM E136 has already been revised to include ASTM E2652 as an alternate methodology.

Cost Impact: Will not increase the cost of construction

This proposal provides an alternative methodology for use.

Analysis: A review of the standard proposed for inclusion in the code, ASTM E2652, 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, 2015.

FS 3-15 : 703.5.1-CRIMI4627

FS 4-15

703.7

Proponent: Albert Wege, representing Wege & Company (albertwege@yahoo.com)

2015 International Building Code

Revise as follows:

703.7 Marking and identification. ~~Where there is an accessible concealed floor~~
Fire walls, ~~floor-ceiling or *attic* space~~, ~~*fire walls*~~, *fire barriers*, *fire partitions*, *smoke barriers* and smoke partitions or any other wall required to have protected openings or penetrations shall be effectively and permanently identified with signs or stenciling ~~in the concealed space~~. Such identification shall be located in accessible concealed floor, floor-ceiling or attic spaces; and either:

1. ~~Be~~Include lettering not less than 3 inches (76 mm) in height with a minimum 3/8 inch (9.5 mm) stroke in a contrasting color incorporating the suggested wording. "FIRE AND/OR SMOKE BARRIER-PROTECT ALL OPENINGS" or other wording, located within 15 feet (4572 mm) of the end of each wall and at intervals not exceeding 30 feet (9144 mm) measured horizontally along the wall or partition~~.~~; or
2. Include ~~lettering~~a contrasting color band of not less than 3 inches (~~76~~76mm) in height and lettering not less than 1/2 inch (12.7 mm) in height ~~with a minimum 3/8 inch (9.5 mm) stroke in a contrasting color~~ incorporating the suggested wording~~, "~~: "FIRE AND/OR SMOKE BARRIER—PROTECT ALL OPENINGS,~~"~~" or other wording, repeating at intervals not more than 24 inches (610 mm) measured horizontally and continuously along the entire length of the fire wall, fire barrier, fire partition, smoke barrier or smoke partition.

Exception: Walls in Group R-2 occupancies that do not have a removable decorative ceiling allowing access to the concealed space.

Reason: In the 2009 IBC, the marking and identification of fire rated wall assemblies was introduced, to identify critical wall assemblies that protect occupants from fire and smoke spread as a result of breaches within said wall assemblies. Often, maintenance and operation crews, in addition to contractors, breach these wall assemblies to install ductwork, cabling, etc, without knowing that these walls are critical to the protection of the occupants in the event of a fire.
The 2009 IBC allow marking and identification lettering at a minimum of one- half inch (½") (12.7mm) incorporating the suggested wording: "FIRE AND/OR SMOKE BARRIER—PROTECT ALL OPENINGS," to be repeated every thirty feet (30'-0") (9144 mm).

The 2012 IBC increased the marking and identification lettering to a minimum of 3" (76 mm) with a 3/8" (9.5mm) stroke incorporating the suggested wording: "FIRE AND/OR SMOKE BARRIER—PROTECT ALL OPENINGS," to be repeated every thirty feet (30'-0") (9144 mm) and within fifteen feet (15'-0") (4572 mm) of the end of each wall.

The challenge that has been encountered is that while the code section may be followed, placed at every thirty feet (30'-0) (9144 mm), the potential is still present that the lettering may still not be visible if placed behind above ceiling equipment, on other side of a duct, or if a maintenance worker happens to pop a ceiling tile mid-span and not see the text. Despite the three inch (3") (76 mm) lettering heights, these above ceiling spaces are not typically well- illuminated.

The proposal being brought forth in the code change request is to also allow marking and identification lettering at a minimum of one- half inch (½") (12.7mm) incorporating the suggested wording: "FIRE AND/OR SMOKE BARRIER—PROTECT ALL OPENINGS, but that the marking and identification is continuous along the entire length of the wall assembly; that is, end- to – end. The suggested wording shall repeat at intervals of every 24" (610 mm) horizontally within a contrasting color ban no less than 3" (76 mm) in height.

Cost Impact: Will not increase the cost of construction
Alternative format.

FS 5-15

703.7.1 (New)

Proponent: William Koffel, representing Firestop Contractors International Association (wkoffel@koffel.com)

2015 International Building Code

Add new text as follows:

703.7.1 Penetrations and Joints Tested through penetration firestop sytems and fire-resistant joint systems in walls requiring marking by Section 703.7 shall be permanently identified with a marking system. The marking system shall be located within 2 inches (50 mm) of the through penetration firestop system. For fire-resistant joint systems, the marking system shall be located within 15 feet (4570 mm) of the end of each wall or floor and at intervals not exceeding 30 feet (9144 mm) measured horizontally along the wall or partition.

The marking system shall be legible and contain, at a minimum, the following information:

Do Not Disturb - Firestop System or Fire-Resistant Joint System as appropriate
System Design Number:
Engineering Judgement Number:

> **Exception:** Where an electronic marking and identification system is used, the identifier shall be legible to the reader equipment.

Reason: The purpose for the proposal is to require that firestop systems and joint systems be marked or identified so that code officials, special inspectors, building managers, contractors, and others can understand what system was used. This will reduce the need for expensive research time by special inspectors and code officials to find the appropriate system diagram that is needed to verify that the system used is appropriate for the application.
Secondly, should a repair be needed, knowing the system design number may allow the repair to occur without removing and replacing the entire system. The manufacturer, materials used, and all other pertinent system details will be available to those that need to inspect, maintain, or repair such systems.

Cost Impact: Will not increase the cost of construction
Most contractors will install the marking systems at no additional cost when required to do so. Over the useful life of the building, costs for repairs and maintenance should be reduced. Also, the cost to properly inspect and verify the systems during construction should also be reduced.

FS 6-15

Part I:
704.2
Part II:
704.3

THIS IS A 2 PART CODE CHANGE. BOTH PARTS WILL BE HEARD BY THE IBC-FIRE SAFETY COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THIS COMMITTEE.

Proponent: Jerry Tepe, JRT-AIA Architect, representing American Institute of Architects (JRTAIA@aol.com)

Part I

2015 International Building Code

Revise as follows:

704.2 Column protection. Where columns are required to have protection to achieve a *fire-resistance rating*, the entire column shall be provided individual encasement protection by protecting it on all sides for the full column height, including connections to other structural members, with materials having the required *fire-resistance rating*._ Where the column extends through a ceiling, the encasement protection shall be continuous from the top of the foundation or floor/ceiling assembly below through the ceiling space to the top of the column.

Exception: Individual encasement protection is not required on unexposed sides provided the extent of protection on unexposed sides is in accordance with the required *fire-resistance rating*, as determined in Section 703.

Part II

2015 International Building Code

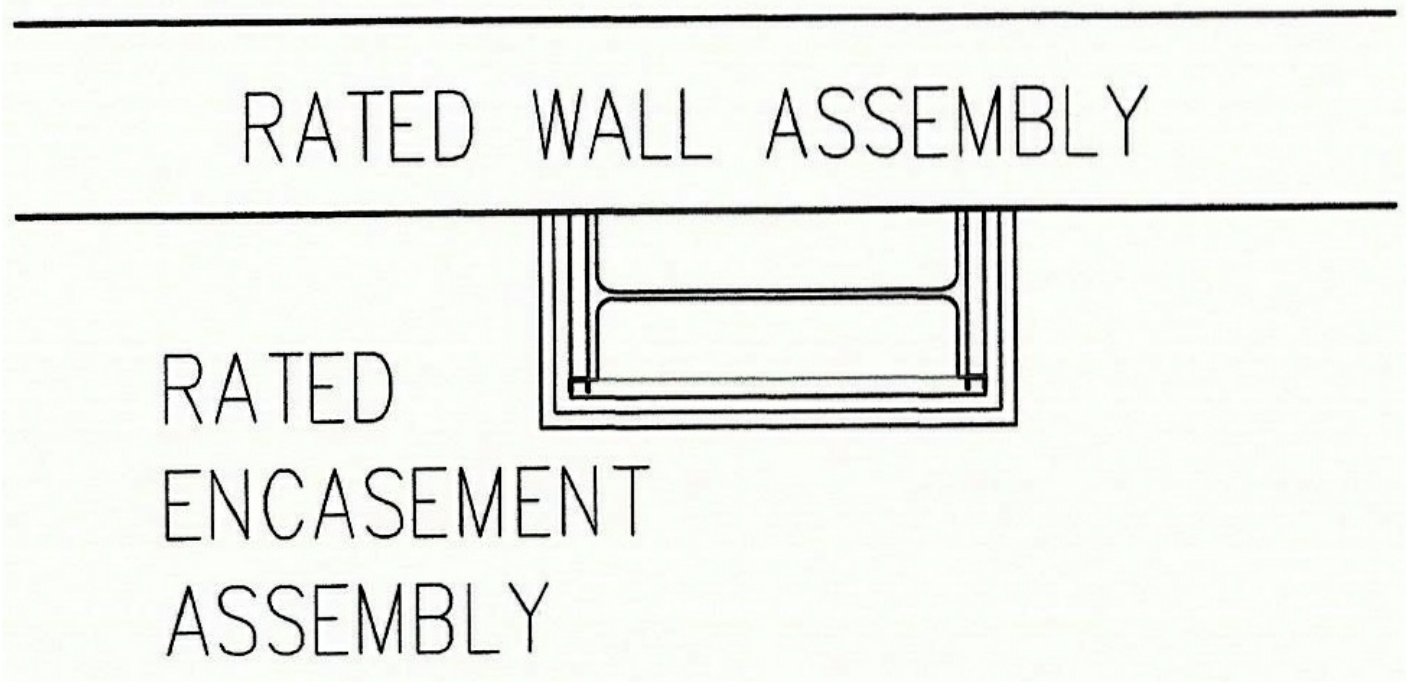
Revise as follows:

704.3 Protection of the primary structural frame other than columns. Members of the primary structural frame other than columns that are required to have protection to achieve a *fire-resistance rating* and support more than two floors or one floor and roof, or support a load-bearing wall or a nonload-bearing wall more than two stories high, shall be provided individual encasement protection by protecting them on all sides for the full length, including connections to other structural members, with materials having the required *fire-resistance rating*.

Exception: Individual encasement protection ~~on all sides shall be permitted~~is not required on ~~all exposed~~unexposed sides provided the extent of protection on unexposed sides is in accordance with the required *fire-resistance rating*, as determined in Section 703.

Reason: If the face of the primary structural frame is unexposed, in all likelihood, the same face of the column is also unexposed, therefore a similar exception is proposed for columns in Section 704.2.
Examples might include the following:

- A column adjacent to a masonry wall, where the wall assembly has a different and individual fire resistance tested design equal to the hourly rating of the individual encasement requirements of the column.

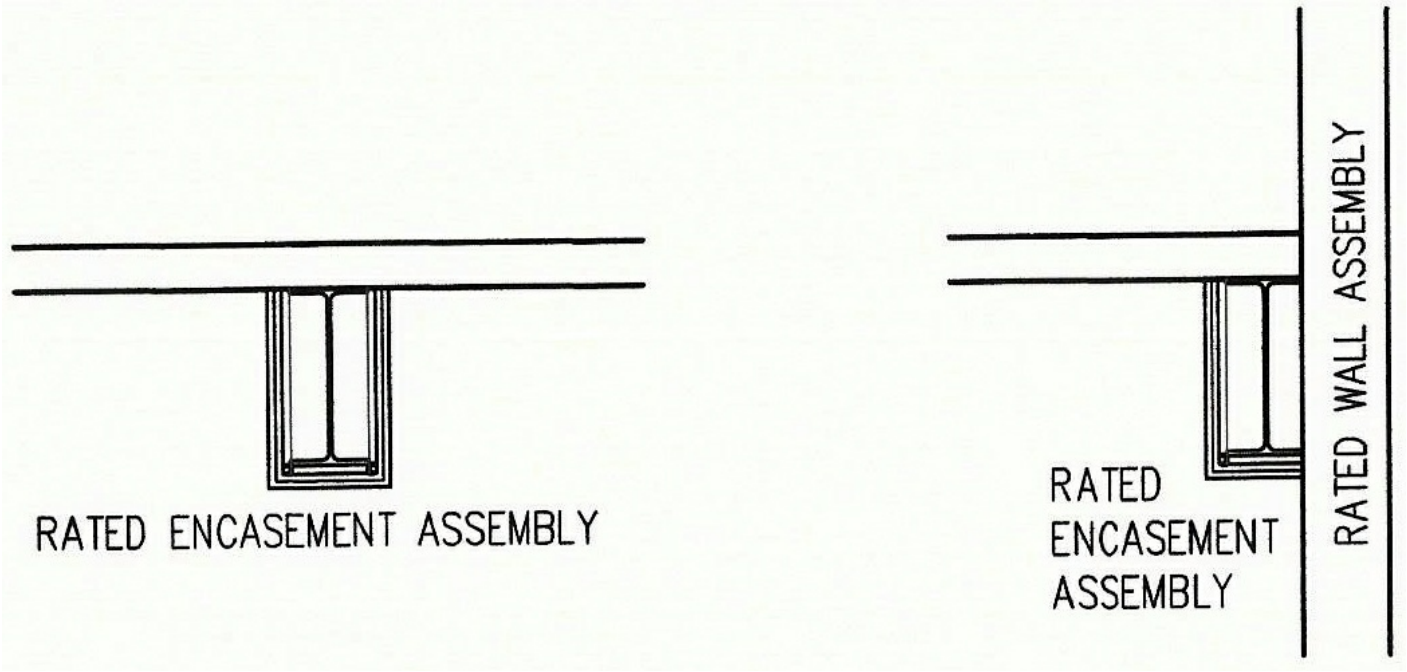


The issue is with the current language which is confusing at best, stating that "individual encasement protection shall be permitted" when that is what the main section requires. This and other ambiguities lead to multiple interpretations as to what is required when an unexposed side is covered by other construction. Some jurisdictions require individual encasement regardless of other construction, while others permit non-fire-resistance-rated adjacent construction.

The proposed changes to Section 704.3 is to address the ambiguities by more clearly stating the intent and goal of the application of the exception. The intent is to recognize that other fire resistant tested assemblies can be employed on the unexposed sides of the primary structural frame, other than columns, as long as those assemblies are equivalent to the minimum fire resistance rating of the individual encasement protection as required by the code.

Examples might include the following:

- A beam fire resistance tested design with a concrete/metal deck construction floor above (likely the original intent of the exception); or
- A beam adjacent to a masonry wall, where the wall assembly has a different and individual fire resistance tested design equal to the hourly rating of the individual encasement requirements of the beam.



An ICC Committee interpretation substantiated the intent of the exception as follows:

IBC COMMITTEE INTERPRETATION 41-14

Issued 1-6-2015

Q: Does the exception apply to all sides of the beam, i.e. top, bottom, and sides?

A: Yes.

This section is only applicable to the protection of the primary structural frame members that meet the parameters of the section and does not include

columns. Even though the text states that the encasement must be on all four sides of the beam, the exception will allow tested assemblies that have the encasement on only the "exposed" sides of the beam. The assumption would be that the "exposed" side is the fire side.

Even though the usual application is a steel floor beam under a metal deck with a concrete slab, the exception does not limit its application to this scenario.

Therefore, regardless of whether it is the top, the bottom, or the side; and regardless of what type of building system is on the "unexposed" side, the "unexposed" side is not required to be encased.

Cost Impact:

Part I: Will not increase the cost of construction
The proposal may reduce the cost of construction by not requiring the owner, developer or design professional to submit for consideration a variance to the code provisions in accordance with 104.10 (Modifications) or 104.11 (Alternative materials, design and methods of construction and equipment) when other fire resistance tested designs will perform the same function as the intent of 704.2.

Part II: Will not increase the cost of construction
The proposal intends only to clarify the code, but does not make any technical changes to code requirements.

FS 6-15 : 704.3-TEPE4496

FS 7-15

704.2, 704.4.1

Proponent: David Tyree, American Wood Council, representing American Wood Council (dtyree@awc.org)

2015 International Building Code

Revise as follows:

704.2 Column protection. Where columns are required to have protection to achieve a *fire-resistance rating*, the entire column shall be provided individual encasement protection by protecting it on all sides for the full column height, including connections to other structural members, with materials having the required *fire-resistance rating*._ Where the column extends through a ceiling, the encasement protection shall be continuous from the top of the foundation or floor/ceiling assembly below through the ceiling space to the top of the column.

Exception: Columns located in a wall of light frame construction and located entirely between the top and bottom plates shall be permitted to have the fire resistance ratings provided by the membrane protection provided by the fire-resistance rated wall.

704.4.1 Light-frame construction. Studs, columns, and boundary elements that are integral elements in ~~*load-bearing*~~ *walls* of light-frame construction, and are located entirely between the top and bottom plates shall be permitted to have required *fire-resistance ratings* provided by the membrane protection provided for the ~~*load-bearing*~~ *wall*.

Reason: Reason: This proposal is to provide further clarification to a code change proposal that was approved last cycle and is included in the 2015 IBC in Section 704.4. Elements within fire-resistance rated walls of light-frame construction are addressed directly in Section 704.4.1 (Light-frame construction) and can be a part of a fire-resistance rated wall assembly without additional fire protection. Many buildings are built out of typical light frame construction; the concentrated loads from trusses or beams must have a continuous load path to the foundation. Some jurisdictions are interpreting that those construction boundary elements, such as, built-up and solid structural elements, are columns and are requiring them to be provided with individual fire protection. It is the intent of this provision, which has been verified by ICC staff, that it was never the intent to require individual fire protection of these elements, as they are not considered a portion of the primary structural frame.
This proposal was discussed and revised based on comments from the Colorado Chapter ICC Code Changes Committee and clarifies this provision is not intended to address continuous columns, does not have any connections to any elements of a structural frame, and is within a rated wall assembly.
For a complete list of AWC code change proposals and additional information please go to http://www.awc.org/Code-Officials/2015-IBC-Code-Changes.

Cost Impact: Will not increase the cost of construction
By revising this section, there is no additional cost as it clarifies the intent of this code provision. If anything, this proposal will actually save money as some building officials and designers have interpreted this section to require stud packs or built-up columns within a rated wall assembly to be individually fire protected which increases construction cost.

FS 7-15 : 704.4.1-TYREE4610

FS 8-15

704.2

Proponent: Timothy Saari, Colorado Code Consulting, LLC, representing Colorado Chapter ICC

2015 International Building Code

Revise as follows:

704.2 Column protection. Where columns are required to have protection to achieve a *fire-resistance rating*, the entire column shall be provided individual encasement protection by protecting it on all sides for the full column height, including connections to other structural members, with materials having the required *fire-resistance rating*._ Where the column extends through a ceiling, the encasement protection shall be continuous from the top of the foundation or floor/ceiling assembly below through the ceiling space to the top of the column.

Exception: Columns that meet the limitations of Section 704.4.1

Reason: We anticipate that the American Wood Council will be proposing a related change to Section 704.4.1, Light-frame consrtuction, that will better define when column elements that are part of, and integral to, a wall assembly, may be protected by fire-resistive wall materials. (Membrane protection) This code change proposal will link the later AWC concept to the charging language of this previoius section, and give clear direction to the code user when membrane protection is sufficient to meet the intent of the code.

This proposal is also clarifying for the structural elements that exceed the limits of Section 2308, and specifically 2308.8.1 and 2308. 8 2, and keep the code user in this section of code for all primary structural frame elements.

Cost Impact: Will not increase the cost of construction
If approved, this code clarification will lower the cost of construction by removing a perceived higher standard than the code intended, will simplify design and installation, and streamline construction.

FS 8-15 : 704.2-SAARI3985

FS 9-15

Part I:
704.2
Part II:
704.3

THIS IS A 2 PART CODE CHANGE. BOTH PARTS WILL BE HEARD BY THE IBC-FIRE SAFETY COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THIS COMMITTEE.

Proponent: Timothy Pate, City and County of Broomfield representing Colorado Chapter Code Change Committee, representing City and County of Broomfield (tpate@broomfield.org)

Part I

2015 International Building Code

Revise as follows:

704.2 Column protection. Where columns are required to have protection to achieve a *fire-resistance rating*, the entire column shall be provided individual encasement protection by protecting it on all sides for the full column height, including connections to other structural members, with materials having the required *fire-resistance rating*._ Where the column extends through a ceiling, the encasement protection shall be continuous from the top of the foundation or floor/ceiling assembly below through the ceiling space to the top of the column.

Exception: Columns located in unusable space as designated in section 711.2.6 and in Type VA, IIA, or IIIA construction.

Part II

2015 International Building Code

Revise as follows:

704.3 Protection of the primary structural frame other than columns. Members of the primary structural frame other than columns that are required to have protection to achieve a *fire-resistance rating* and support more than two floors or one floor and roof, or support a load-bearing wall or a nonload-bearing wall more than two stories high, shall be provided individual encasement protection by protecting them on all sides for the full length, including connections to other structural members, with materials having the required *fire-resistance rating*.

~~**Exception**~~**Exceptions:**

1. Individual encasement protection on all sides shall be permitted on all exposed sides provided the extent of protection is in accordance with the required *fire-resistance rating*, as determined in Section 703.
2. Structural members located within unsuable space areas as designated in section 711.2.6 and in Type IIIA, IIA, or VA construction.

Reason: Section 711.2.6 allows the deletion of installing the ceiling membrane of a 1 hour fire resistance rated floor/ceiling assembly over unusable spaces. These spaces are typically crawl spaces or under structural floor areas where the area is not being used for any building use such as mechanical equipment or storage. The concept is that there would not be anything that would start on fire so it does not make sense to delete the membrane of the floor/ceiling assembly but to still require the rating of any structural columns located within the unusable space.

There is not a definition of unusable space in the IBC but the IBC commentary gives the opinion that it is up to the Building Official to verify that there are no combustible materials other than construction elements which would allow effectively allow piping, conduits, and ductwork - nothing that would start a fire.

FOR REFERENCE PURPOSES ONLY:

711.2.6 Unusable space. In 1-hour fire-resistance-rated floor/ceiling aseemblies, the ceiling membrane is not required to be installed over unusable crawl spaces. In 1-hour fire resistance-rated roof assemblies, the floor membrane is not required to be installed where unusable attic space occurs above.

Cost Impact:

Part I: Will not increase the cost of construction
This change could potentially lower the cost of construction in jurisdictions that have required these primary structural columns in crawl spaces to be individually protected.

Part II: Will not increase the cost of construction
This change could potentially lower the cost of construction in jurisdictions that have required these primary structural members other than columns in crawl spaces to be individually protected.

FS 10-15

704.3, Table 704.3 (New)

Proponent: Jonathan Humble, American Iron and Steel Institute, representing American Iron and Steel Institute (jhumble@steel.org)

2015 International Building Code

Revise as follows:

704.3 Protection of the primary structural frame other than columns. Members of the primary structural frame other than columns that are required to have protection to achieve a *fire-resistance rating* ~~and support more than two floors or one floor and roof, or support a load-bearing wall or a nonload-bearing wall more than two stories high,~~ shall be provided individual encasement protection by protecting them on all sides for the full length, including connections to other structural members, with materials having the required *fire-resistance rating, or membrane protection, in accordance with Table 704.3.* ~~.~~

Exception: Individual encasement protection on all sides shall be permitted on all exposed sides provided the extent of protection is in accordance with the required *fire-resistance rating*, as determined in Section 703.

Add new text as follows:

TABLE 704.3
PRIMARY STRUCTURAL FRAME PROTECTION

PRIMARY STRUCTURAL FRAME SUPPORTING	FIRE RESISTANCE PROTECTION
Supporting one (1) floor and roof.	Encasement protection, or membrane protection as determined in Section 711, or by a combination of both.
Supporting up to two (2) floors.	Encasement protection, or membrane protection as determined in Section 711, or by a combination of both.
Supporting a load bearing wall or non-load bearing wall up to two (2) stories.	Encasement protection, or membrane protection as determined in Section 711, or by a combination of both.
Supporting three (3) floors or more.	Encasement protection.
Supporting a load bearing wall or non-load bearing wall three (3) stories or more.	Encasement protection.

Reason: This proposal was generated as a result assessing that the language, and not the technical intent, was not as clear. Section 704.3 is a run on sentence which combines too many subjects to be understood clearly. Further, Section 704.3 fails to recognize Section 711 (Horizontal Separation) for those constructions which are less than what is required for encasement protection only.
We propose to reduce the charging statement to a discussion about fire-resistance only. This is achieved by removing the construction requirements.

The construction requirements are relocated into a new table. Next to each support category is the fire-resistance requirements for that category. This will make the enforcement of the provision clearer. Further, we have suggested that the original intent (e.g. Pre-2009 IBC) be reinstated where it clearly articulates the three options available for fire resistance of the primary structural frame which are below the encasement only requirements. In this case, recognition of Section 704.3, Section 711 (Horizontal Separation), or a combination of both.

Use of the term "membrane protection" is a recognized term in the code that refers to a ceiling consisting of gypsum board or a lay-in ceiling used as part of the overall fire-resistance of a fire-resistant rated assembly.

We do not propose any modifications to the exception in this proposal.

Cost Impact: Will not increase the cost of construction
This is a format change to an existing section of the code. There is no attempt to modify the technical content. Therefore, there is no cost increase.

FS 11-15

202 (New), 705.2

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

2015 International Building Code

Add new definition as follows:

SECTION 202 DEFINITIONS

PROJECTION A floor, roof or appendage extending beyond any exterior wall of a building; such as cornices, eave overhangs, exterior decks or balconies, canopies, porte cocheres and similar protrusions.

Revise as follows:

705.2 Projections. ~~Cornices, eave overhangs, exterior balconies and similar projections extending beyond the exterior wall~~ Projections shall conform to the requirements of this section and Section 1406. Exterior egress balconies and exterior exit stairways and ramps shall comply with Sections 1021 and 1027, respectively. Projections shall not extend any closer to the line used to determine the fire separation distance than shown in Table 705.2.

> **Exception:** Buildings on the same lot and considered as portions of one building in accordance with Section 705.3 are not required to comply with this section for projections between the buildings.

Reason: There appears to be some confusion as to what a projection is or isn't. We have provided a new definition to clarify what they may be. By defining what a projection is, the code user will be able to enforce the code more consistently. We have also revised Section 705.2 to remove the list of projections and replace it with the defined term. The term "projection" appears in many locations throughout the IBC. This definition will provided more guidance for the user.

Cost Impact: Will not increase the cost of construction
This change is a clarification of the code. If anything, the change will reduce the cost of construction because a projection will not be required to fire-resistant rated in some cases.

FS 12-15

705.2

Proponent: Stephen Thomas, Colorado Code Consulting, LLC, representing Colorado Chapter ICC (sthomas@coloradocode.net)

2015 International Building Code

Revise as follows:

705.2 Projections. Cornices, eave overhangs, exterior balconies and similar projections extending beyond the exterior wall shall conform to the requirements of this section and Section 1406. Exterior egress balconies and exterior exit stairways and ramps shall comply with Sections 1021 and 1027, respectively. Projections shall not extend any closer to the line used to determine the fire separation distance than shown in Table 705.2. Projections extending past the limits in Table 705.2 shall be provided with an exterior wall extending the full width of the projection. Such exterior wall shall comply with Section 705

> **Exception:** Buildings on the same lot and considered as portions of one building in accordance with Section 705.3 are not required to comply with this section for projections between the buildings.

Reason: Section 705.2 limits the distance that a projection needs to be from the line used to determine the fire separation distance. However, the code doesn't tell you what to do if the design professional wants to take the projection closer to the line. This proposal provides that direction by requiring an exterior wall to extend the full width of the projection. The exterior wall would provide protection from fire to and from adjacent properties. The areas on either side would not be required to be protected similar to exterior walls of a building that are perpendicular to the line. The reference to Section 705 is to ensure that the wall is fire-resistant rated and has the openings in accordance with Section 705.8.

Cost Impact: Will not increase the cost of construction
This change is a clarification of the code. Therefore, there is no impact on the cost of construction.

FS 12-15 : 705.2-THOMAS4449

FS 13-15

Table 705.2

Proponent: Stephen Thomas, Colorado Code Consulting, LLC, representing Colorado Chapter ICC (sthomas@coloradocode.net)

2015 International Building Code

Revise as follows:

TABLE 705.2
MINIMUM DISTANCE OF PROJECTION

FIRE SEPARATION DISTANCE - FSD (~~FSD~~ feet)	MINIMUM DISTANCE FROM LINE USED TO DETERMINE FSD
0 ~~feet~~ to less than 2 ~~feet~~	Projections not permitted
~~Greater than~~ 2 ~~feet~~ to less than 3 ~~feet~~	24 inches
~~Greater than~~ 3 ~~feet~~ to less than ~~30~~ 5 ~~feet~~	24 inches plus 8 inches for every foot of FSD beyond 3 feet or fraction thereof
~~30 feet~~5 or greater	~~20 feet~~ 40 inches

For SI: 1 foot = 304.8 mm; 1 inch = 25.4 mm.

Reason: This table was changed over the last two code cycles. We were the proponent of the original change. Our intent was to simplify the projection distance requirements by putting the requirements in a table. The change in the 2015 edition attempted to address an anomoly within the table. However, that change created a much more restrictive requirement than what was in the 2012 IBC and earlier editions. There was no technical justification for this more restrictive requirement. In previous codes, the maximum distance that a projection would be required was 40 inches. In the current edition, a building that has a fire separation distance of 30 feet would be required to hold the projection back from the lot line by a minimum of 20 feet. We feel that this is over-restrictive. This change puts the requirement back to what was permitted in previous codes and eliminates the anomoly that was present in the 2012 edition.

Cost Impact: Will not increase the cost of construction
This change will most likely reduce the cost of construction by providing clarity to the code.

FS 13-15 : T705.2-THOMAS4448

FS 14-15

Table 705.2

Proponent: Victor Cuevas, representing City of Los Angeles

2015 International Building Code

Revise as follows:

TABLE 705.2
MINIMUM DISTANCE OF PROJECTION

FIRE SEPARATION DISTANCE (FSD)	MINIMUM DISTANCE FROM LINE USED TO DETERMINE FSD
0 feet to 2 feet	Projections not permitted
Greater than 2 feet to 3 feet	24 inches
Greater than 3 feet to less than 30 feet	~~24 inches plus 8 inches for every foot of FSD beyond 3 feet or fraction thereof~~ 2' + 2/3(FSD - 3')
30 feet or greater	20 feet

For SI: 1 foot = 304.8 mm; 1 inch = 25.4 mm.

Reason: Add formula 2' + 2/3(FSF - 3') to replace text "24 inches plus 8 inches for every foot of FSD beyond 3 feet or fraction thereof" to simplify use.

Cost Impact: Will not increase the cost of construction
The code change proposal will not increase the cost of construction. Revisions to Table 705.2 will simplify the existing requirements and will not affect the current costs of construction.

FS 14-15 : T705.2-CUEVAS4802

FS 15-15

705.2.3, 705.2.3.1 (New), 705.2.4 (New), 1406.1, 1406.3, 1406.4

Proponent: Jonathan Siu, representing City of Seattle Department of Planning & Development (jon.siu@seattle.gov)

2015 International Building Code

Revise as follows:

705.2.3 Combustible projections. Combustible projections extending to within 5 feet (1524 mm) of the line used to determine the *fire separation distance* shall be of not less than 1-hour fire-resistance-rated construction, Type IV construction, fire-retardant-treated wood or as ~~required~~ permitted by Section ~~1406.3~~705.2.3.1.

> **Exception:** Type VB construction shall be allowed for combustible projections in Group R-3 and U occupancies with a fire separation distance greater than or equal to 5 feet (1524 mm).

Add new text as follows:

705.2.3.1 Balconies and similar projections. Balconies and similar projections of combustible construction other than fire-retardant-treated wood shall be fire-resistance rated where required by Table 601 for floor construction or shall be of Type IV construction in accordance with Section 602.4. The aggregate length of the projections shall not exceed 50 percent of the building's perimeter on each floor.

Exceptions:

1. On buildings of Type I and II construction, three stories or less above grade plane, fire-retardant-treated wood shall be permitted for balconies, porches, decks and exterior stairways not used as required exits.
2. Untreated wood is permitted for pickets and rails or similar guardrail devices that are limited to 42 inches (1067 mm) in height.
3. Balconies and similar projections on buildings of Type III, IV and V construction shall be permitted to be of Type V construction, and shall not be required to have a fire-resistance rating where sprinkler protection is extended to these areas.
4. Where sprinkler protection is extended to the balcony areas, the aggregate length of the balcony on each floor shall not be limited.

705.2.4 Bay and oriel windows. Bay and oriel windows shall conform to the type of construction required for the building to which they are attached.

> **Exception:** Fire-retardant-treated wood shall be permitted on buildings three stories or less above grade plane of Type I, II, III or IV construction.

Delete without substitution:

~~**1406.1 General.** Section 1406 shall apply to *exterior wall coverings*; balconies and similar projections; and bay and oriel windows constructed of combustible materials.~~

~~**1406.3 Balconies and similar projections.** Balconies and similar projections of combustible construction other than fire-retardant-treated wood shall be fire-resistance rated where required by Table 601 for floor construction or shall be of Type IV construction in accordance with Section 602.4. The aggregate length of the projections shall not exceed 50 percent of the building's perimeter on each floor.~~

> ~~**Exceptions:**~~
> 1. ~~On buildings of Type I and II construction, three stories or less above *grade plane*, *fire-retardant-treated wood* shall be permitted for balconies, porches, decks and exterior stairways not used as required exits.~~
> 2. ~~Untreated wood is permitted for pickets and rails or similar guardrail devices that are limited to 42 inches (1067 mm) in height.~~
> 3. ~~Balconies and similar projections on buildings of Type III, IV and V construction shall be permitted to be of Type V construction, and shall not be required to have a *fire-resistance rating* where sprinkler protection is extended to these areas.~~
> 4. ~~Where sprinkler protection is extended to the balcony areas, the aggregate length of the balcony on each floor shall not be limited.~~

~~**1406.4 Bay and oriel windows.** Bay and oriel windows shall conform to the type of construction required for the building to which they are attached.~~

> ~~**Exception:** *Fire-retardant-treated wood* shall be permitted on buildings three stories or less above grade plane of Type I, II, III or IV construction.~~

Reason: This proposal is editorial in nature, making no technical changes. It simply relocates the provisions that state the protection and type of construction requirements for combustible decks and balconies, and bay and oriel windows from Chapter 14 to Chapter 7. Chapter 14 is mostly about exterior finishes, and these provisions are likely to be missed there. Chapter 7 is a more appropriate location for these provisions, since Section 705.2 already deals with type of construction and fire-resistance rated protection for projections.
Section 1406.1 is deleted since it only contained general charging language, which is not necessary now that only one section remains in Section 1406 (currently 1406.2, to be renumbered to 1406.1).

Cost Impact: Will not increase the cost of construction
Because this is an editorial relocation of existing provisions, there is no change in the regulations and therefore, no change in the cost of construction.

FS 15-15 : 705.2.3-SIU4694

FS 16-15

705.8

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

2015 International Building Code

Revise as follows:

705.8 Openings. Openings in *exterior walls* shall comply with Sections 705.8.1 through 705.8.6. For structures or portions of structures not provided with surrounding exterior walls and with usable area under the horizontal projection of the roof or floor above, exterior wall shall mean the primary structural frame supporting the roof or floor above.

Reason: The proposed code change addresses exterior opening protection for structures and buildings, and portions thereof that do not include surrounding exterior walls.

The IBC does not address the protection of covered exterior portions of a building that cannot be classified as projections and that provide shelter for useable space. The useable space is included in building area and fire area where applicable however the code does not seem to regulate the proximity of the useable space relative to the lot line.

- Projections appear to be elements attached to exterior walls that do not include useable space below.
- Exterior balconies are not defined and appear to be the exception and seem to be regulated similar to eaves and cornices and it is implied that they cantilever from the wall of the building.

Table 601 footnote (f) referenced under primary structural frame requires that the fire resistance of the structural frame to comply with Section 704.10 in addition to Table 601. As a consequence the structural frame on the outside of a building or structure without a surrounding exterior wall is required to comply with Table 602 as if it were a wall. However since the primary structural frame does not comply with the definition for wall it is necessary to modify Section 705.8 to make clear that openings within the primary structural frame are regulated.

Some structures addressed by this code change may include canopies over gasoline pump islands; canopies over play grounds or picnic areas; useable areas under portions of buildings where the upper stories are larger than portions below and closer to a lot line, etc.

Most Building Officials will consider that the face of the building to be the structural frame and would regulate the percentage of exterior openings within, however the IBC as written does not support this interpretation.

Currently as written the IBC implies that if an exterior wall is not provided then the openings on the exterior perimeter are not regulated since they are not openings in an exterior wall. A written interpretation from ICC confirms this.

Cost Impact: Will increase the cost of construction

The proposed code change is necessary for public safety and to provide more consistent application of the exterior wall opening protection requirements. The increased of construction will result is safer communities that are more resilient when faced with natural disasters that interrupt water supplies and power for extended periods of time since it ensures a protected building perimeter that can limit conflagration hazards.

FS 16-15 : 705.8-FATTAH5674

FS 17-15

705.8.1

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

2015 International Building Code

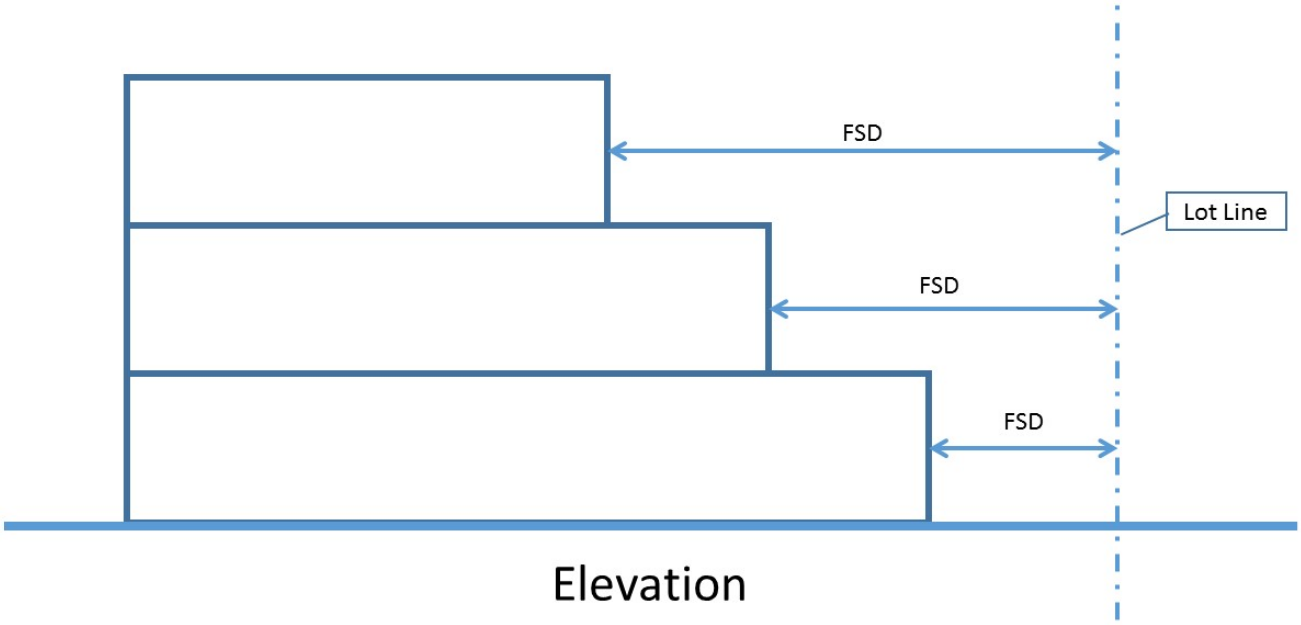
Revise as follows:

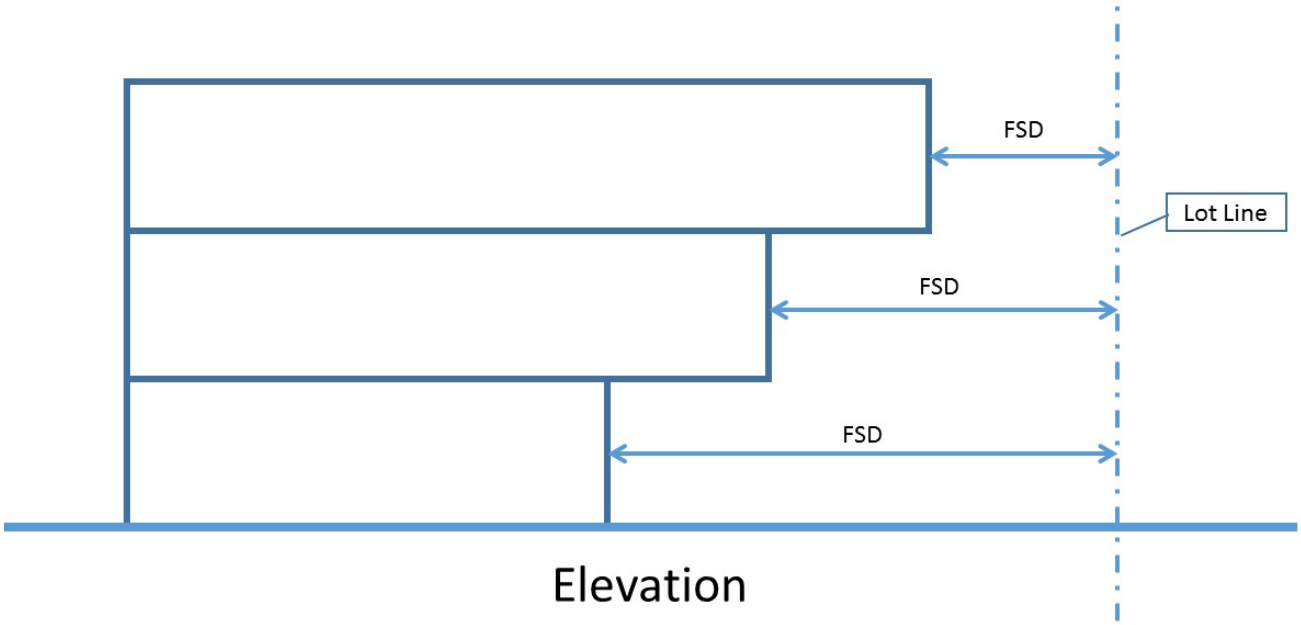
705.8.1 Allowable area of openings. The maximum area of unprotected and protected openings permitted in an *exterior wall* in any *story* of a building shall not exceed the percentages specified in Table 705.8 based on the fire separation distance of each individual story.

Exceptions:

1. In other than Group H occupancies, unlimited unprotected openings are permitted in the first *story* above grade plane either:
    1.1. Where the wall faces a street and has a *fire separation distance* of more than 15 feet (4572 mm); or
    1.2. Where the wall faces an unoccupied space. The unoccupied space shall be on the same lot or dedicated for public use, shall be not less than 30 feet (9144 mm) in width and shall have access from a street by a posted fire lane in accordance with the *International Fire Code*.
2. Buildings whose exterior bearing walls, exterior nonbearing walls and exterior primary structural frame are not required to be fire-resistance rated shall be permitted to have unlimited unprotected openings.

Reason: The intent of this change is to clarify that the limitation of openings in exterior walls is based on the fire separation distance of each individual story. There appears to be confusion on how to evaluate openings in exterior walls when an upper floor extends out over a lower floor. We believe that the opening protection is determined at the exterior wall of the story, not the wall plane of the story above. Just the opposite would be true if the building was a pyramid style building where the upper floors step back from the floor below. The opening protection would depend on the distance to the lot line at each story, not the first story. Please see attached diagrams.





Cost Impact: Will not increase the cost of construction
The change clarifies the intent of the code. There is no affect on the construction cost.

FS 17-15 : 705.8.1-THOMAS4446

FS 18-15

705.8.1

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

2015 International Building Code

Revise as follows:

705.8.1 Allowable area of openings. The maximum area of unprotected and protected openings permitted in an *exterior wall* in any *story* of a building shall not exceed the percentages specified in Table 705.8.

Exceptions:

1. In other than Group H occupancies, unlimited unprotected openings are permitted in the first *story* above grade plane either:
    1.1. Where the wall faces a street and has a *fire separation distance* of more than 15 feet (4572 mm); or
    1.2. Where the wall faces an unoccupied space. The unoccupied space shall be on the same lot or dedicated for public use, shall be not less than 30 feet (9144 mm) in width and shall have access from a street by a posted fire lane in accordance with the *International Fire Code*.
2. Buildings whose exterior bearing walls, exterior nonbearing walls and exterior primary structural frame are not required to be fire-resistance rated shall be permitted to have unlimited unprotected openings.
3. <u>In other than Group R-3 occupancies, or Group R-2 occupancies constructed of Type VB construction, unlimited unprotected openings are permitted for useable areas located under portions of a building above when the roof or floor above is located at a fire separation distance is 10 feet or greater.</u>

Reason: The IBC does not clearly regulate exterior opening protection when buildings include vertical offsets under which useable space occurs. The useable spaces below pose a hazard to structures and buildings on adjoining properties and no exterior walls exist under the projection of the building above.

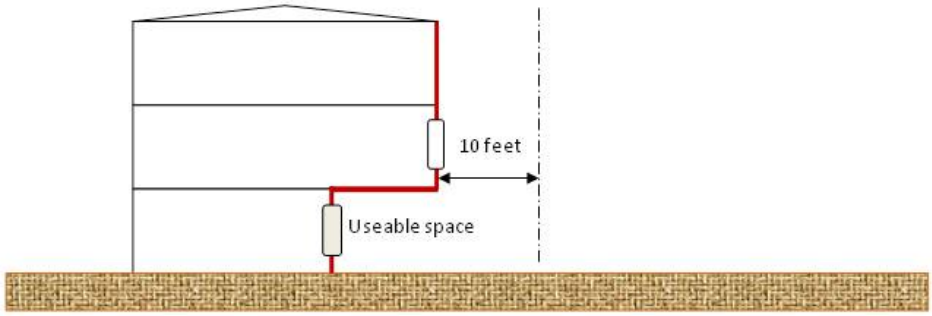
Proposed exception # 3 addresses buildings with occupancies other than R-3, and Group R-2 constructed of Type VB construction, since they have been historically separated 5 ft from a lot line. Additionally these buildings will always be protected with sprinklers. The degree of openness provides fire protection benefits and the area will most likely include sprinkler protection unless the space is very tall.

The proposed code change treats outdoor areas under a building, for example outdoor dining in a restaurant part of which is indoors and part of which is under a larger second floor, similarly to parking garages and requires a fire separation distance of 10 ft for openings to not be limited when the structure has no surrounding wall adjacent to a lot line or imaginary line.

The IBC exempts exterior openings on open parking garages, that typically have a very limited or no surrounding exterior walls, from exterior wall opening limits in Table 705.8 when located at a fire separation distance of 10 feet or more.

No size limitation (area, depth) has been added to exempt attached structures with small depths to allow the Building Official flexibility in determining when such structures can be considered as projections if the area below is small enough to not be useable or pose a risk to buildings and structures on adjoining properties.

Most buildings of Type VB and IIB are exempt from exterior opening protection and wall protection when located at a fire separation distance of 10 ft per Table 602 footnote (g) and Section 705.8.1 exception 2. 10 ft appears to be a reasonable fire separation distance to address this issue.



Cost Impact: Will increase the cost of construction
The cost of construction may increase due to the need to enclose the attached structures. Fire resistance of the primary structural frame is required by Section 704.10 so increased fire resistance will not result. The code change will result in more uniform code application.

FS 18-15 : 705.8.1-FATTAH5675

FS 19-15

705.8.2

Proponent: Ronald Geren, RLGA Technical Services, LLC, representing Self (ron@specsandcodes.com)

2015 International Building Code

Revise as follows:

705.8.2 Protected openings. Where openings are required to be protected, *fire doors* and fire shutters shall comply with Section 716.5 and *fire window assemblies* shall comply with Section 716.6.

~~Exception~~Exceptions:

1. Opening protectives are not required where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 and the exterior openings are protected by a water curtain using automatic sprinklers *approved* for that use.
2. Fire-resistance-rated glazing tested as part of a fire-resistance-rated wall in accordance with ASTM E 119 or UL 263 and labeled in accordance with Section 703.6 shall not be required to comply with Section 716.6 and shall not be included in the aggregate area permitted for protected openings.

Reason: Since this section directly references the sections indicated for compliance (i.e. Sections 716.5 aand 716.6), it bypasses the exception to these requirements afforded in Section 716.2. Without a definition in Chapter 2 for what entails an "opening," as written, it can be construed from this section that assemblies tested per ASTM E 119 or UL 263 are considered openings for the purpose of applying the opening requirements to exterior walls. This proposal allows the same assemblies that are exempt from the interior fire window requirements of Section 716.6 to also be exempt from opening requirements for exterior walls.

Cost Impact: Will not increase the cost of construction
This proposal provides an design alternative to the minimum exterior wall opening requirements. The basic requirement is unaltered; thus there is no increase in cost.

FS 20-15

705.8.5

Proponent: Tony Crimi, representing International Firestop Council (tcrimi@sympatico.ca)

2015 International Building Code

Revise as follows:

705.8.5 Vertical separation of openings. Openings in *exterior walls* in adjacent *stories* shall be separated vertically to protect against fire spread on the exterior of the buildings where the openings are within 5 feet (1524 mm) of each other horizontally and the opening in the lower *story* is not a protected opening with a *fire protection rating* of not less than $^{3}/_{4}$ hour. Such openings shall be separated vertically not less than 3 feet (914 mm) by spandrel girders, *exterior walls* or other similar assemblies that have a *fire-resistance rating* of not less than 1 hour, rated for exposure to fire from both sides, or by flame barriers that extend horizontally not less than 30 inches (762 mm) beyond the *exterior wall*. Flame barriers shall have a *fire-resistance rating* of not less than 1 hour. The unexposed surface temperature limitations specified in ASTM E 119 or UL 263 shall not apply to the flame barriers ~~or vertical separation~~ unless otherwise required by the provisions of this code.

Exceptions:

1. This section shall not apply to buildings that are three *stories* or less above *grade plane*.
2. This section shall not apply to buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2.
3. Open parking garages.

Reason: The existing provision indicates that openings in exterior walls shall be separated vertically not less than 3 feet (914 mm) by spandrel girders, exterior walls or other similar assemblies that have a fire-resistance rating of not less than 1 hour, rated for exposure to fire from both sides. However, the last sentence of 705.8.5 then waives the unexposed surface temperature limitations specified in ASTM E 119 or UL 263. While this may be reasonable for the flame barriers because they extend horizontally beyond the build face, it is not justified for spandrel panels, exterior walls, or other similar assemblies that are mounted vertically above openings in the fire compartment.That vertical portion of the curtain wall is often immediately adjacent to cumbustible materials such as window coverings, drapes and carpets.

Our understanding of exterior fires and their mechanism of spread in buildings has been researched and reported. Building geometry and exterior projections of the curtain wall or building structural elements can have a beneficial or negative effect on flame length extension and heat flux exposure to curtain wall elements above the fire compartment. Such condition can allow the unrestricted passage of flames and hot gases from a fire on a floor below into the floor above. The position and geometry of the opening relative to the expected flame extension is important in assessing the risk of a leap frog event. The requirement to provide a fire-resistance-rating should not be waived for the vertical separation between openings.

Fire spread in high rise buildings from floor to floor occurs if flames emerge and extend on the façade of the building to cause ignition in the floor above fire floor. Even though considerable effort has been exerted to address this issue, the relevant physics is still under study and has been poorly clarified. Key factors that impact a curtain wall's fire performance are being addressed by the new Draft ASTM Test Method for Determining the Fire Resistance of Building Perimeter Containment Systems Due to External Spread of Fire. Such a test Standard could eventually be useful to provide enhanced protection or evaluate a curtain wall assembly's potential performance when subject to uncontrolled heat/flame exposure.

Cost Impact: Will increase the cost of construction
The current Code text is contradictory. It requires an ASTM E119 or UL 723 fire resistance rating <u>from both sides</u>, but then waives one of the most critical aspects. This proposals creates the intended level of safety. There may be some impact on cost where spandrel panels do not meet the existing ASTM E119 temperature rise conditions. In many cases, where one or more layers of gypsum board is used on the interior surface, there may be no additional cost depending on the type of spandrel construction.

FS 20-15 : 705.8.5-CRIMI4307

FS 21-15

705.8.6

Proponent: Gary Lampella, City of Redmond, Oregon, representing Oregon Building Officials Association (gary.lampella@ci.redmond.or.us)

2015 International Building Code

Revise as follows:

705.8.6 Vertical exposure. For buildings on the same lot, opening protectives having a *fire protection rating* of not less than $^{3}/_{4}$ hour shall be provided in every opening that is less than 15 feet (4572 mm) vertically above the roof of an adjacent building or structure based on assuming an imaginary line between them. The opening protectives are required where the *fire separation* ~~*distance*~~*distances* between the imaginary line~~ and the adjacent~~ to each building or structure is less than 15 feet (4572 mm).

Exceptions:

1. Opening protectives are not required where the roof assembly of the adjacent building or structure has a *fire-resistance rating* of not less than 1 hour for a minimum distance of 10 feet (3048 mm) from the *exterior wall* facing the imaginary line and the entire length and span of the supporting elements for the fire-resistance-rated roof assembly has a *fire-resistance rating* of not less than 1 hour.
2. Buildings on the same lot and considered as portions of one building in accordance with Section 705.3 are not required to comply with Section 705.8.6.

Reason: This proposal would clear up the confusion and uncertainty of when to apply the provisions of Section 705.8.6. Currently this section only addresses the the fire separation distance of one of the buildings, presumably the lower building. What this proposal will do is make it clear that in order to apply the fire-resistive provisions of this section, both buildings would have to have a fire separation distance of less than 15 feet to the imaginary line. This would also line up with the ICC interpretation that assumes the imaginary line to be equidistant between the two buildings.

Cost Impact: Will not increase the cost of construction
This is just a clarification of how to measure fire separation distance for 2 buildings on the same lot and should have no financial impact

FS 22-15

705.8.6

Proponent: Gary Lampella, representing Oregon Builing Officials Association
(gary.lampella@ci.redmond.or.us)

2015 International Building Code

Delete without substitution:

~~**705.8.6 Vertical exposure.** For buildings on the same lot, opening protectives having a *fire protection rating* of not less than 3/4 hour shall be provided in every opening that is less than 15 feet (4572 mm) vertically above the roof of an adjacent building or structure based on assuming an imaginary line between them. The opening protectives are required where the *fire separation distance* between the imaginary line and the adjacent building or structure is less than 15 feet (4572 mm).~~

~~**Exceptions:**~~

1. ~~Opening protectives are not required where the roof assembly of the adjacent building or structure has a *fire-resistance rating* of not less than 1 hour for a minimum distance of 10 feet (3048 mm) from the *exterior wall* facing the imaginary line and the entire length and span of the supporting elements for the fire-resistance-rated roof assembly has a *fire-resistance rating* of not less than 1 hour.~~
2. ~~Buildings on the same lot and considered as portions of one building in accordance with Section 705.3 are not required to comply with Section 705.8.6.~~

Reason: When applying this section to buildings on the same lot with an imaginary line designed to determine fire separation distance, it adds additional requirements that are not required in an identical situation with a real property line between buildings and with the same identical physical arrangement. It makes absolutely no sense to apply different and more stringent requirements to two identical scenarios.
Both scenarios, an imaginary line and a real property line, have identical requirements of Table 602 for fire resistance based on fire separation distance, Table 705.2 for projections, Section 705.5 for exterior walls based on fire separation distance, Section 705.8 for exterior wall openings, Section 705.8.4 for mixed openings and Table 705.8 for exterior wall openings based on fire separation distance. Then we arrive at Section 705.8.6, for vertical exposure. This is the section that creates the conflict between imaginary lines and real property lines.

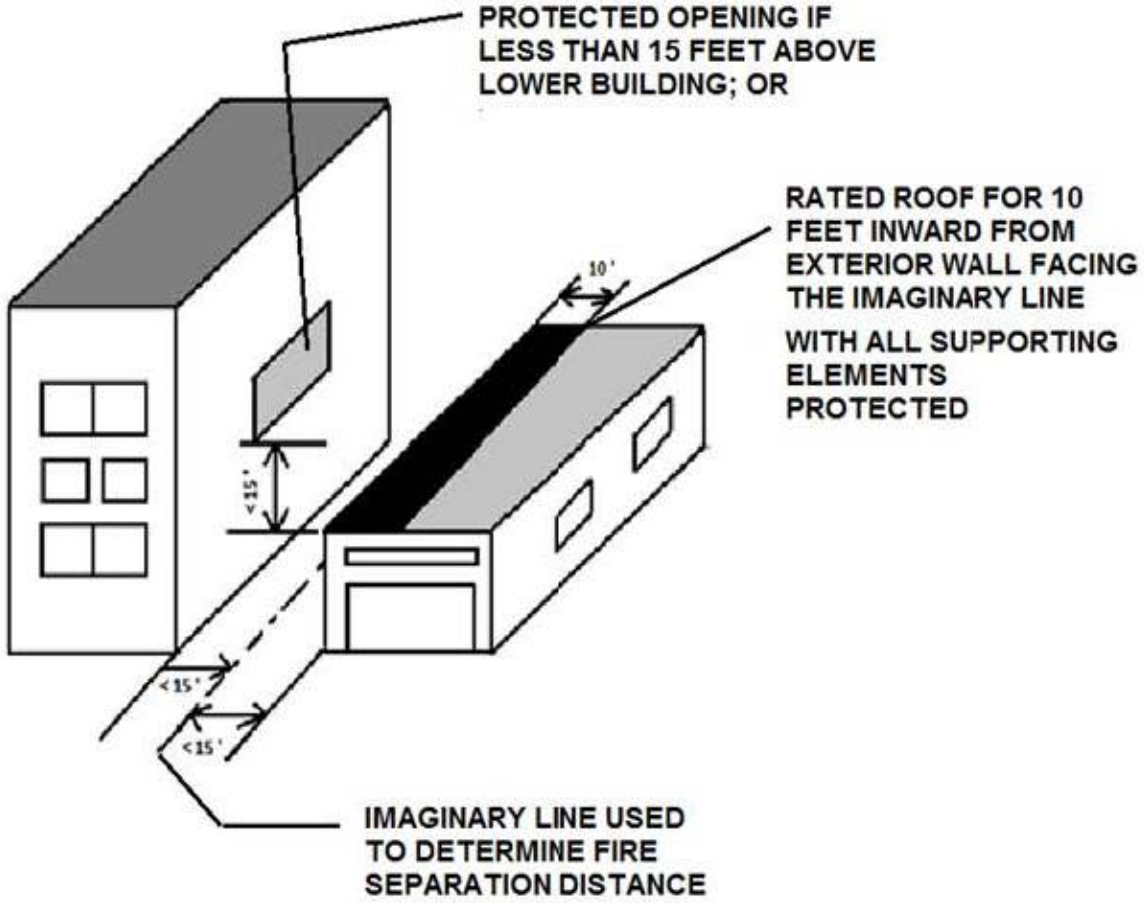


FIGURE 1

Section 705.8.6 currently requires either opening protectives or a rated roof only when you have two buildings on the same lot with an imaginary line between them. This is based on the ICC interpretation of this provision in the 2012 IBC.

Two additional and very substantial requirements are placed on two buildings on the same lot with an imaginary line to determine fire separation distance that are not applied to identical physical arrangements with real property lines. The code as written only addresses the fire separation distance of the lower building and has no verbiage for the building with the openings. Although there is an ICC interpretation

propriate for both fire-resistance-rated and nonfire-resistance-rated walls.

705.8.6 Vertical exposure. For buildings on the same lot, opening protectives having a *fire protection rating* of not less than ¾ hour shall be provided in every opening that is less than 15 feet (4572 mm) vertically above the roof of an adjacent building or structure based on assuming an imaginary line between them. The opening protectives are required where the *fire separation distance* between the imaginary line and the adjacent building or structure is less than 15 feet (4572 mm).

Exceptions:

1. Opening protectives are not required where the roof assembly of the adjacent building or structure has a *fire-resistance rating* of not less than 1 hour for a minimum distance of 10 feet (3048 mm) from the *exterior wall* facing the imaginary line and the entire length and span of the supporting elements for the fire-resistance-rated roof assembly has a *fire-resistance rating* of not less than 1 hour.
2. Buildings on the same lot and considered as portions of one building in accordance with Section 705.8.3 are not required to comply with Section 705.8.6.

Q: A covered mall building constructed in accordance with Section 402 is attached to a multistory anchor store. Is it the intent of Section 705.8.6 to require exterior opening protectives for the windows in the anchor store that are adjacent to and located above the roof of the covered mall building?

A: No. Although the anchor store is not considered part of the covered mall building, it is the intent of Section 402.4.2.2.1 to permit unprotected openings between the anchor store and the pedestrian area of the mall. It would be inconsistent to allow unprotected openings between the mall area and the anchor store and, at the same time, require exterior opening protectives in windows located in the anchor store above the roof of the covered mall building.

Q: Where Table 705.8 prohibits any openings in an exterior wall due to fire separation distance, is it the intent of Section 705.8.6 to permit openings in the exterior wall that is located above the roof of an adjacent building?

A: No. Section 705.8 regulates the maximum area of openings (protected and unprotected) in exterior walls. These limitations are applicable to each and every story of all exterior walls. The conditions addressed in Section 705.8.6 are also subject to the requirements of Section 705.8. Thus, the exterior wall of a building is required to comply with Section 705.8 for determining the maximum amount of openings permitted whether or not there is an adjoining building or adjacent structure with a lower roof height. Note b to Table 705.8 provides the cross-reference to Section 706.6.1 for exterior opening requirements above fire walls.

Q: When evaluating the opening protective requirements of Section 705.8.6, must the fire separation distances of both buildings be considered?

A: Yes. The hazard addressed in Section 705.8.6 is due to the fire exposure from an adjacent lower roof which is in close proximity to the exterior wall of the higher building. The requirements of this section are based on a 15-foot fire separation distance as defined in Section 702, whereas the requirements of previous editions of model codes were based on a 30-foot horizontal distance between adjacent buildings. The current requirements presume that the imaginary line or lot line is drawn equidistant between two adjacent buildings located no more than 30 feet apart.

The provisions of Section 705.8.6 are intended to be applied where the adjacent exterior walls of both buildings are required by Table 602 to be fire-resistance rated. This typically occurs where both buildings have a fire separation distance of 15 feet or less. The hazard addressed in Section 705.8.6 does not exist where one building is located at a fire separation distance of 15 feet or less and the adjoining building or adjacent structure is located at a fire separation distance of greater than 15 feet.

SECTION 706
FIRE WALLS

706.2 Structural stability. Fire walls shall have sufficient structural stability under fire conditions to allow collapse of construction on either side without collapse of the wall for the duration of time indicated by the required *fire-resistance rating* or shall be constructed as double fire walls in accordance with NFPA 221.

Q: Are building elements, such as plumbing piping, HVAC ducts and fire sprinkler piping, that are permitted to penetrate a fire wall required to be designed for compliance with the provisions of Section 706.2 for structural stability?

A: Yes. A fire wall must remain wholly intact for the time duration specified. Building elements that are permitted to penetrate a fire wall must be designed and installed such that failure of any building element on either side of a fire wall will not cause premature failure of the fire wall, neither in its entirety or in part.

Q: Can a fire-resistance-rated floor/ceiling assembly be classified as a horizontal fire wall for the purpose of subdividing a multistory structure into separate buildings?

EXIBIT 1

The ICC interpretation determined that both buildings had to have a fire separation distance that required both buildings to have fire resistive walls due to fire separation distance. Although a published interpretation, the code still does not say that. It only addresses the fire separation of the lower building.

that "the current requirements presume that the imaginary line is equidistant between the two buildings" the code does not say that. It only refers to the adjacent (shorter building) having a fire separation distance if less then 15 feet. It also says "the provsisions of Section 705.8.6 are intended to be applied where the adjacent exterior walls of both buildings are required by Table 602 to be fire-resistive rated." Again, the code does not say that it

only applies if the lower building has a fire separation distance of less than 15 feet. One could have an existing building that had up to 75% of openings in the exterior wall,

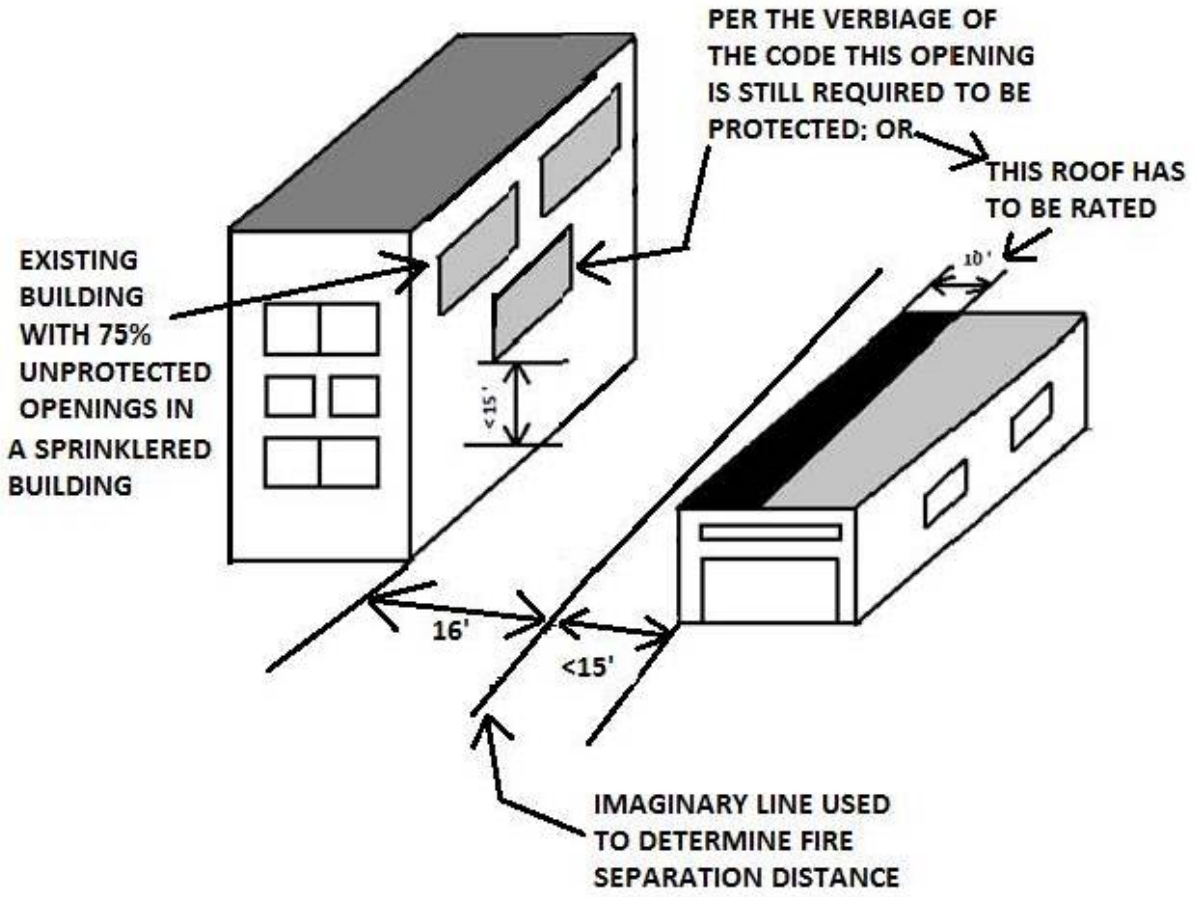


FIGURE 2

This imaginary line is placed such that the existing building can still have the 75% unprotected openings and not have to replace any glazing. Fifteen to less than 20 feet allows 75% of unprotected openings in a sprinklered building per Table 705.8.

The way the code reads in the last sentence of 705.8.6 only the shorter building has to have less than 15 feet to the imaginary line. So there is no code verbiage that regulates the fire separation distance of the taller building with the openings. Thus, the openings within 15 feet of the lower roof would still have to be protected although the building with the opening has a fire separation distance of more than 15 feet.

and another building was proposed to be constructed on the same lot 30 feet from it, one could place the imaginary line so the proposed building had a 14 foot fire separation distance and the taller one with the openings had a 16 foot fire sepration distance the openings could reamain unprotected in a non sprinklered building. But because of the code language, any opening that was less than 15 feet vertically above the adjacent roof would still be required to be protected because of the provision of measuring the fire separation distance for the lower building. Infact, you could have a much larger fire separation distance for the taller building but if the lower one was less than 15 feeet, you would still have to protect to openings within the 15 foot range due to the absence of any fire separation distance for the building with the openings. Replacing the imaginary line with an actual property line,

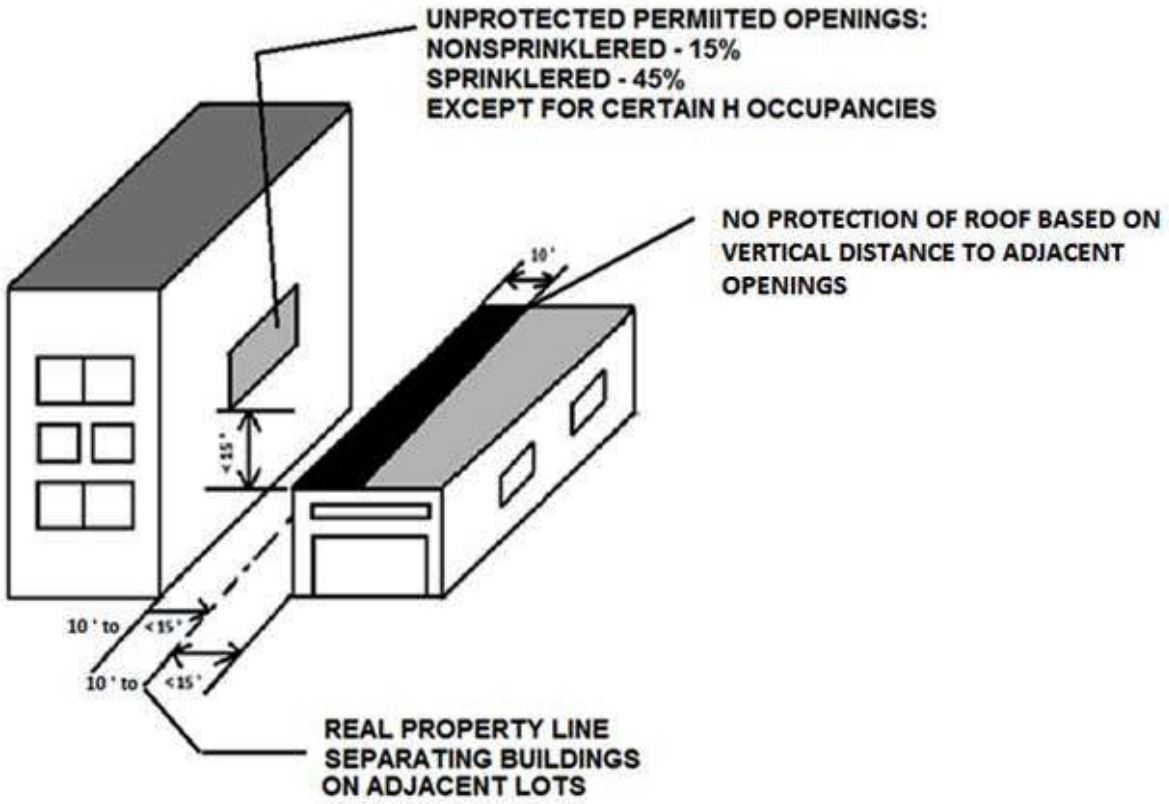


FIGURE 3

Now applying the same exact scenario to buildings with a real property line and you get virtually no requirements from Section 705.8.6 that are applicable to two buildings on the same lot with an imaginary line. You now can have a number of openings within the 15 foot vertical measurement without having to protect them or protecting the roof.

This is utilizing the 10 feet to < 15 feet in Table 705.8 as illustrating the difference in requirements between imaginary lnes and real property lines.

the buildings are now not subjected to the requirements of 705.8.6. With the two buildings with a real property line scenario you could have up to 15% of unprotected openings in a non sprinklered building and up to 45% in a sprinklered building without having to rate any of the openings in relation to the height above an adjacent roof. Furthermore, two adjacent building, each with a 5 to less than 10 foot fire separation distance to a real property line configured exactly like Figures 1 and 3 could have a wall with 10% unprotected openings without sprinklers and 25% unprotected openings when provided with sprinklers. We cannot find a similar provisions such as this anywhere in the code that regulates this type of arrangement. It is only applied when you have two buildings on the same lot with an imaginary line.

Statements from the Fire Safety committee in previous code hearings on this section were that you couldn't compare the two scenarios simply because with a property line you would have different owners and the buildings would not be constructed at the same time and how could you make two owners agree on which one does what, or how could you make an owner of an existing building retroactively modify a once code conforming building? I contend that you can relate them quite simply. If an existing building has less than a 15 foot fire separation distance to a property line, and another building is proposed on an adjacent lot with less than a 15 foot fire separation distance to the same property line, and there were one or more openings in one of the buildings that were less than 15 feet above the roof of the other building then Section 705.8.6 could be theoretically applied. The newer proposed building would have to have either a fire-rated roof or protected openings dependent upon whether it was the higher building or the lower building.

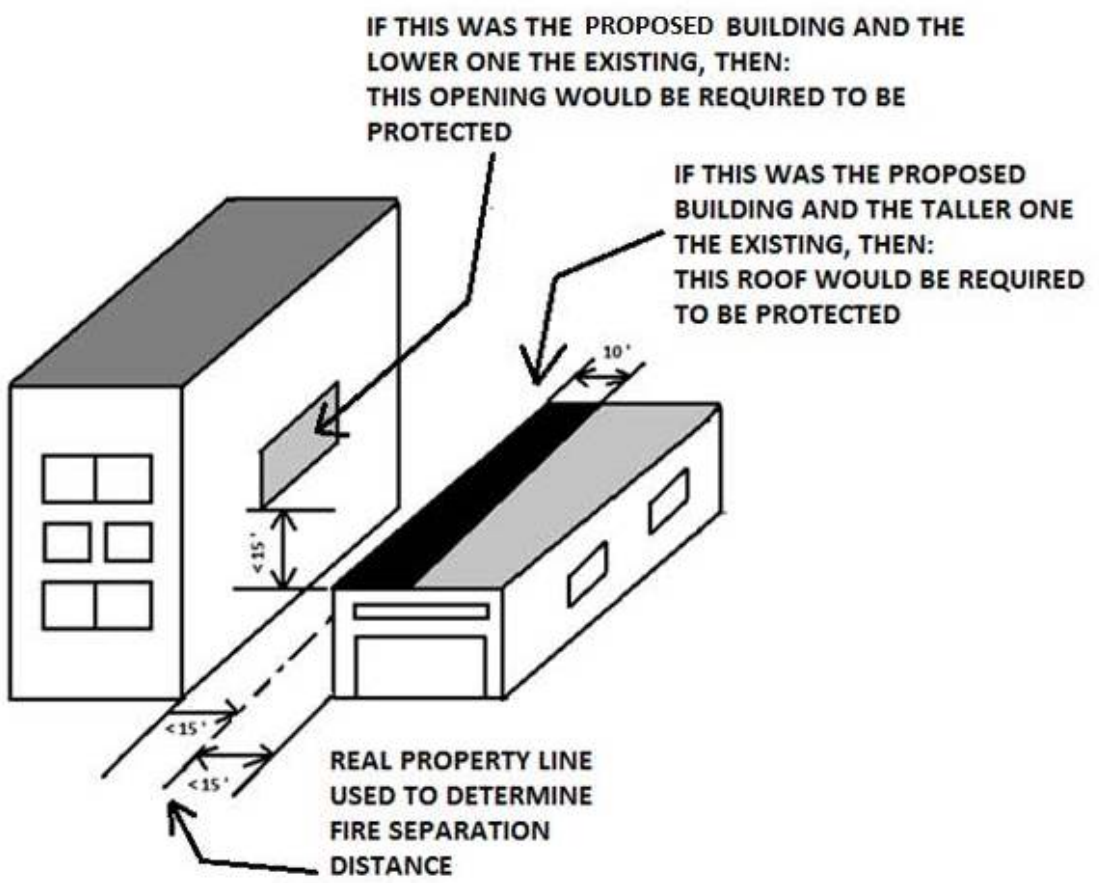


FIGURE 4

If a building was proposed to be constructed adjacent to another building on an adjacent lot, and the configuration of the two building met the provisions of Section 705.8.6, then you would apply the appropriate provision to the proposed building.

This puts no financial burden or threat of upgrading the existing building on the owner of that building. The newer building owner would be responsible to comply with 705.8.6. Of course this is merely conjecture and the code does not currently require that. But it is the exact same configuration and scenario Section 705.8.6 is addressing and is simply a way to show that you can compare the two scenarios – one with an imaginary line and one with a real property line.

So after analysis of situations with imaginary lines and real property lines, we can only presume that an imaginary line drastically changes physics and fire science to a degree that causes fire and smoke to behave very badly and function outside the realm of science – creating a hazard more severe than normal hazards associated with other structures located 30 feet from each other with a real property line between them.

Or maybe the surveying and platting of a legal and real property line also causes fire and smoke to work outside the physical realm of science and physics much like a black hole. Sucking oxygen, friction and fuel out of this magical 30 foot strip of soil and air, eradicating every known hazard and sending it millions of light years away for some unsuspecting unknown life form in a distance galaxy to deal with this very unpleasant array of toxic and harmful conditions created by an imaginary line.

It defies logic that fire and smoke would react differently with identical building locations, building shapes, and roof and opening locations due to having and imaginary line or a real property line. So why do we have different requirements for each?

If we want predictive and consistent codes, than this code section needs to be eliminated.

Cost Impact: Will not increase the cost of construction
This will not incerase to cost if approved. It is a deletion of a section that will no longer require fire-resistive assemblies.

FS 23-15

705.8.6.1 (New)

Proponent: Gary Lampella, City of Redmond, Oregon, representing Oregon Building Officials Association (gary.lampella@ci.redmond.or.us)

2015 International Building Code

Add new text as follows:

705.8.6.1 Vertical exposure for buildings on adjacent lots Where a building is proposed adjacent to an existing building on an adjacent lot and the resulting fire separation distance for both buildings is less than 15 feet (4572 mm), and one of the buildings has openings less than 15 feet (4572 mm) above the roof of the adjacent building, one of the following provisions shall apply.

1. If the proposed building has openings less than 15 feet (4572 mm) vertically above the roof of the existing adjacent building, opening protectives having a fire protection rating of not less than 3/4 hour shall be provided for those openings; or

2. If the existing building has openings less than 15 feet vertically above the roof of the proposed adjacent building, the proposed building shall be provided with a roof assembly having a fire-resistive rating of not less than 1 hour for a distance of 10 feet (3048 mm) from the exterior face of the wall facing the property line and the entire length and span of the supporting elements for the fire-resistive-rated roof assembly shall have a fire-resistive-rating of not less than 1 hour.

Reason: The purpose of this proposal is to eliminate a conflict and align it with Section 705.8.6. Having a requirement for roof and opening protection for two buildings on the same lot with an imaginary line between them and ignoring the same exact scenario for two building on seprate lots is not logical. We can only assume that placing an imaginary line between two buildings on the same lot creates a more severe hazard than two buildings on separate lots separated by a real property line but with identical configurations. This seems to us that smoke and fire behave differently with an imaginary line than it does with a real property line. Either the imaginary line defies normal physics, fire science and behaves badly because of the imaginary line, or maybe a real property line contains some magical characteristic that removes all potential hazards and negates the need for fire-resistve protection that is required with an imaginary line. Fire and smoke behave the same between two buildings regardless if they have a real or imaginary line between them. It only changes by outside agencies such as wind, additional accelerants or by human intervension - which can happen with any building configuration. Having code provisions to control vertical fire spread for only buildings on the same lot with a fire separations distance of less than 15 feet for each building and ignoring the same exact scenario with a real property line perplexes us.
I have submiitted different variations of this proposal before the Fire Safety Committee numerous times without sucess. Feedback from this committee in previous code cycles on this section were that you couldn't compare the two scenarios simply because with a property line you would most likely have separate owners and the buildings would not be constructed at the same time, how could you make separate owners agree on which one does what, or how could you make an owner of an existing building retroactively modify a once code conforming building? I think we have addressed those concerns with this new section to clearly define the proposed building owner as the responsible party. This would be consistent with opening protection due to fire separation distance measured to a property line. If the fire separation distance of the two buildings results in both buildings having a fire separation distance of less the 15 feet by placement of the new building, and the proposed building meets either of the two provisions, openings in the wall facing the property line less than 15 feet above the existing building on the adjacent lot, or the roof of the proposed building is at an elevation that reults in existing openings in the existing building being less than 15 feet above the new roof, only the proposed building would be subject to the fire-resistive requirements. The existing building would not be required to be retrofitted or upgraded in any manner and could remain as is. See Figure 1.

If our goal is to have predictable and consistent codes that don't conflict, then this code proposal is needed and necessary to meet that goal.

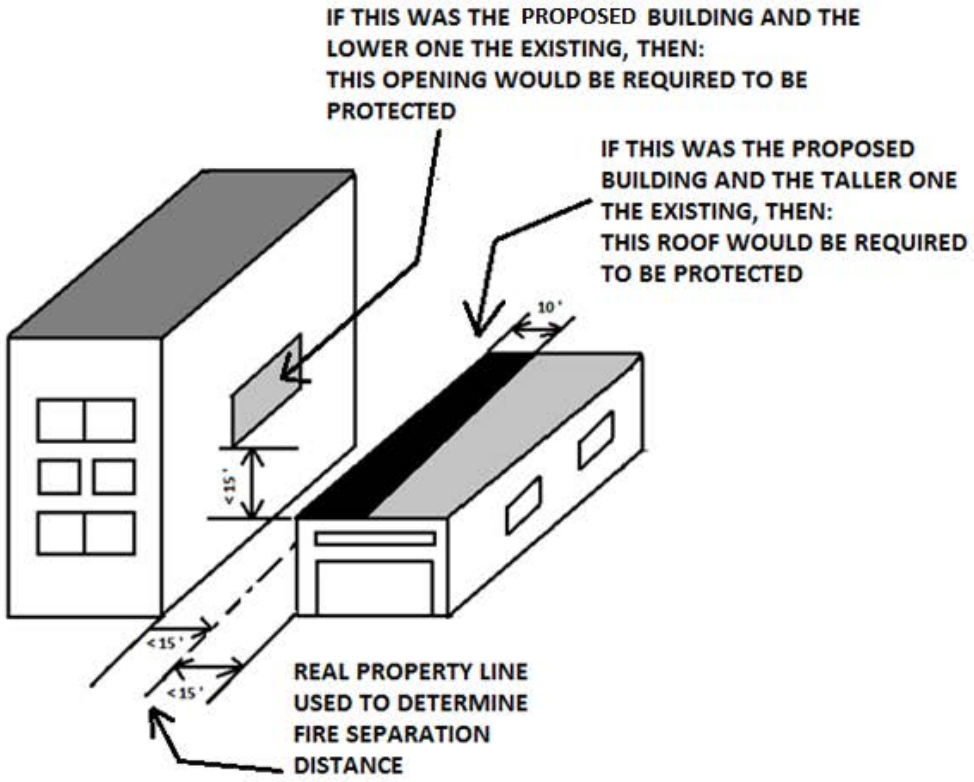


FIGURE 1

When the taller building is the proposed structure and the shorter the existing one, the opening depicted in the drawing would be required to have a fire-protection-rating of not less than ¾ hour. The existing lower building would require no fire-resistive construction for the roof.

When the shorter building is the proposed and the taller the existing building, then the roof would be required to be fire-resistive rated for 10 feet inward from the exterior wall and all supporting members rated. The taller existing building would be permitted to have unprotected openings.

Cost Impact: Will increase the cost of construction
The cost of costruction will increase only for projects that opt to construct buildings closer than 15 feet to a property line with another building on the adjacent lot also less than 15 feet from the propety line. We don't belive that this is common pratice so the cost in overall construction should be minimal

FS 24-15

705.9 (New), 714.3, 1403.4

Proponent: Lee Kranz, City of Bellevue, WA, representing Lee Kranz

2015 International Building Code

Add new text as follows:

705.9 Penetrations Penetrations into or through fire-resistance rated *exterior walls* shall comply with Sections 714.3.1 through 714.3.3.

Revise as follows:

714.3 Fire-resistance-rated walls. Penetrations into or through *fire walls*, *fire barriers*, *smoke barrier* walls ~~and~~, *fire partitions* and fire-resistance rated *exterior walls* shall comply with Sections 714.3.1 through 714.3.3. Penetrations in *smoke barrier* walls shall also comply with Section 714.4.4.

1403.4 Fire resistance. *Exterior walls* shall be fire-resistance rated as required by other sections of this code with opening protection and penetration protection as required by Chapter 7.

Reason: Section 714.3 conspicuously does not include fire-resistance rated exterior walls in the list of assemblies required to have protected penetrations. Listed fire-resistance rated exterior wall assemblies are not typically tested with unprotected penetrations and therefor do not address the multitude of possibilities for membrane and through-penetrations made at the job site. If approved this code change will require all fire-resistance rated exterior walls to have penetrations protected in accordance with Sections 714.3.1 through 714.3.3. This is consistent with the intent of the listed assembly requirements and maintains the type of construction fire-resistance rating requirements of Tables 601, 602 and other provisions requiring exterior walls to be of fire-resistance rated construction.

Cost Impact: Will increase the cost of construction
The cost will go up because more fire-resistance rated exterior wall penetrations will be protected from the effects of fire.

FS 24-15 : 705.9 (New)-KRANZ5084

FS 25-15

705.11

Proponent: Joseph Holland, representing Hoover Treated Wood Products (jholland@frtw.com)

2015 International Building Code

Revise as follows:

705.11 Parapets. Parapets shall be provided on *exterior walls* of buildings.

Exceptions: A parapet need not be provided on an *exterior wall* where any of the following conditions exist:

1. The wall is not required to be fire-resistance rated in accordance with Table 602 because of *fire separation distance*.
2. The building has an area of not more than 1,000 square feet (93 m^2) on any floor.
3. Walls that terminate at roofs of not less than 2-hour fire-resistance-rated construction or where the roof, including the deck or slab and supporting construction, is constructed entirely of noncombustible materials.
4. One-hour fire-resistance-rated *exterior walls* that terminate at the underside of the roof sheathing, deck or slab, provided:
    - 4.1. Where the roof/ceiling framing elements are parallel to the walls, such framing and elements supporting such framing shall not be of less than 1-hour fire-resistance-rated construction for a width of 4 feet (1220 mm) for Groups R and U and 10 feet (3048 mm) for other occupancies, measured from the interior side of the wall.
    - 4.2. Where roof/ceiling framing elements are not parallel to the wall, the entire span of such framing and elements supporting such framing shall not be of less than 1-hour fire-resistance-rated construction.
    - 4.3. Openings in the roof shall not be located within 5 feet (1524 mm) of the 1-hour fire-resistance-rated *exterior wall* for Groups R and U and 10 feet (3048 mm) for other occupancies, measured from the interior side of the wall.
    - 4.4. The entire building shall be provided with not less than a Class B roof covering.
5. ~~In Groups R-2 and R-3 where~~Where the entire building is provided with a Class ~~C~~ B roof covering, the *exterior wall* shall be permitted to terminate at the underside of the roof sheathing or deck in Type III, IV and V construction, provided one or both of the following criteria is met:

    Exception: Group R-2 and R-3 shall be permitted a Class C roof covering.

    - 5.1. The roof sheathing or deck is constructed of *approved* noncombustible materials or of *fire-retardant-treated wood* for a distance of 4 feet (1220 mm).
    - 5.2. The roof is protected with 0.625-inch (16 mm) Type X gypsum board directly beneath the underside of the roof sheathing or deck, supported by not less than nominal 2-inch (51 mm) ledgers attached to the sides of the roof framing members for a minimum distance of 4 feet (1220 mm).
6. Where the wall is permitted to have not less than 25 percent of the *exterior wall* areas containing unprotected openings based on *fire separation distance* as determined in accordance with Section 705.8.

Reason: The provision in Section 5.1 and 5.2 have for many years demonstrated they work as well as a parapet for residential construction. Change will allow the provision in other occupancies when the roof covering classification is a least a Class B. The R-2 and R-3 occupancies would still be permitted a Class C roof covering.

Cost Impact: Will not increase the cost of construction

Could save construction costs.Parapets require additional attention during construction. Parapets require additional attention during construction. They are an extension above the roof. Using FRTW for the sheathing in lieu of untreated wood and eliminating the labor and materials for the parapet will reduce construction costs.

FS 26-15

705.11.1

Proponent: Galen Taylor, County of Los Angeles Fire Department, representing self (galentaylor@me.com); Adria Reinertson, Riverside County Fire Department, representing California Fire Chiefs Association (adriar@moval.org)

2015 International Building Code

Revise as follows:

705.11.1 Parapet construction. Parapets shall have the same *fire-resistance rating* as that required for the supporting wall, and on any side adjacent to a roof surface, shall have noncombustible faces for the uppermost 18 inches (457 mm), including counterflashing and coping materials. The height of the parapet shall be not less than 30 inches (762 mm) and not more than 48 inches (1219 mm) above the point where the roof surface and the wall intersect. Where the roof slopes toward a parapet at a slope greater than two units vertical in 12 units horizontal (16.7-percent slope), the parapet shall extend to the same height as any portion of the roof within a *fire separation distance* where protection of wall openings is required, ~~but~~ in no case shall the height of the parapet be less than 30 inches (762 mm).

Exception: Parapets shall not be limited to 48 inches (1219 mm) in height where approved by the fire ode official.

Reason: Firefighting operations typically require accessing the roof, from the exterior, to perform critical ventilation operations. Firefighters performing such operations may also need to rapidly retreat from their roof-top positions. Excessively high parapets present an immovable obstacle to firefighters when sudden changes in roof-top firefighting operations require an immediate evacuation. Excessively high parapets also prevent firefighters from shouting or signally for help should their hand-held radio stop working.
This proponent has seen building projects involving parapets up to nine feet high on all four sides. Planning Departments also are prone to imposing view-screen requirements at the edge of building roofs which present an equivalent barrier to roof-top access and egress. With the advent of roof-top gardens, the use of parapets as a screening tool will likely increase. However, since the building code is silent regarding maximum parapet heights, jurisdictional authorities are hard pressed to impose a maximum height limit. This proposal would impose a limit on parapets heights while still allowing a reasonable degree of flexability on a case by case basis.

Cost Impact: Will not increase the cost of construction
Since no additional construction materials are involved in limiting maximum parapet height there should be no additional costs imposed by this code amendment.

FS 26-15 : 705.11.1-TAYLOR5108

FS 27-15

706.1.1.1 (New)

Proponent: Adolf Zubia, representing Fire Code Action Committee (fcac@iccsafe.org)

2015 International Building Code

Add new text as follows:

706.1.1.1 Fire walls not required Fire walls are not required on lot lines dividing a building for ownership purposes where the aggregate height and area of the portions of the building located on both sides of the lot line do not exceed the maximum height and area requirements of this code. The code official shall be provided with copies of dedicated access easements and contractual agreements that permit the owner of the portion of the building located on either side of the lot line access to the other side for purposes of maintaining fire and life safety systems necessary for the operation of the building.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 10 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at:
http://www.iccsafe.org/cs/CAC/Pages/default.aspx?usertoken={token}&Site=icc
Currently the only requirement for constructing a fire wall within the IBC is when a building exceeds the maximum height and area requirements of the code. This is reflected in Section 503.1 of the IBC and the user is pointed to Section 706 for the technical requirements applying to fire walls. At Section 706.1.1 the language states that if a wall is constructed on a lot line with the wall intended for use between two buildings it must be constructed as a fire wall. Two key issues are that the construction of a party wall is not mandated based upon the existence of a lot line; and, often a wall is built adjacent to a lot line, not on it, making this section moot in most cases.

This proposal is intended to recognize that it is increasingly common to have property subdivided with a lot line dividing a building for ownership purposes. this issue is addressed in Chapter 4 for malls where anchor stores have lot lines specific to the anchor store established for financial purposes along the wall that separates the mall from the anchor store. But this issue is not addressed for other types of buildings and as a result, designers, building owners and code officials are left to wrestle with the issue on a case by case basis.

The proposed language specifies that where a property line divides a building for ownership purposes, and the building portions on both sides of the line do not exceed the maximum height and area requirements of the code, a fire wall is not required to be constructed on the property line. This allowance is only permitted where copies of dedicated access easements and contractual agreements allowing for maintenance of required fire and life safety systems that straddle the separation wall be provided to the code official. This new section is intended to provide guidance to ensure consistency in application of the code to buildings divided by ownership lot lines.

Cost Impact: Will not increase the cost of construction
There will be a decrease in cost by providing for a systematic method of handling buildings that have a lot line bisecting them for ownership purposes, eliminating unnecessary alternative method applications, appeal processes and/or construction of walls not necessary for fire or life safety.

FS 28-15

706.2

Proponent: Edwin Huston, representing NCSEA Code Advisory Committee (huston@smithhustoninc.com)

2015 International Building Code

Revise as follows:

706.2 Structural stability. Fire walls shall be designed and constructed to allow collapse of the structure on either side without collapse of the wall under fire conditions. Fire walls designed and constructed in accordance with NFPA 221 shall be deemed to comply with this section.

Exception: Modify NFPA 221, Section 4.2 to read as follows:

4.2 Design Loads. All walls and their support shall be designed for loads in accordance with IBC Chapter 16, and to withstand a minimum uniform load, Ak, of 8 lbs/ft2 (0.38 kPa) from either direction applied perpendicular to the face of the wall utilizing the load combinations for extraordinary events ASCE 7, Section 2.5.

Reason: The loading requirements for firewalls in NFPA 221 – 15 are based on Allowable Stress Design level loads. They need to be revised to coordinate with the current strength level loading of ASCE 7 and to clarify how to combine them with other loads. The 8 psf is the existing 5 psf load from 1607.14 multiplied by a load factor of 1.6 to increase it to a Strength Design load in accordance with ASCE 7 Section 2.5.

Cost Impact: Will not increase the cost of construction
This change clarifies the design loads for structural stability of the fire wall and does not add new requirements which would increase the cost of construction.

FS 29-15

706.2

Proponent: Homer Maiel, PE, CBO, representing ICC Tri-Chapter (Peninsula, East Bay, Monterey Bay) (hmaiel@gmail.com)

2015 International Building Code

Revise as follows:

706.2 Structural stability. Fire walls shall be designed and constructed to allow collapse of the structure on either side without collapse of the wall under fire conditions. Fire walls designed and constructed in accordance with NFPA 221 shall be deemed to comply with this section.

Exception: Where double fire walls are used in accordance with NFPA 221, floor and roof sheathing not exceeding 3/4 inch (19.05 mm) thickness shall be permitted to be continuous through the wall assemblies of light frame construction.

Reason: There is widely accepted interpretation by many building departments and structural engineers that the roof and floor diaphragms must be continuous to properly perform its function. The sheathing which comprises these diaphragms in light frame construction is generally wood structural panels between 7/16 inches to 23/32 inches thickness. These panels represent a very small risk of causing failure of the wall on the unaffected side of a double fire wall assembly. The benefit of performing the seismic function as a diaphragm is generally regarded as well worth any very small risk caused by fire exposure from one side of a double fire wall.
The following link is to a Structural Engineers of Southern California recommendation to carry the floor sheathing through these fire walls.

http://www.icclabc.org/uploads/Opinion_from_SEAOSC_on_Firewall_Final.pdf

Cost Impact: Will not increase the cost of construction
This code change does not create a new requirement. It allows an additional option for compliance that is not required.

FS 30-15

706.3

Proponent: Sam Francis, American Wood Council, representing American Wood Council (sfrancis@awc.org)

2015 International Building Code

Revise as follows:

706.3 Materials. *Fire walls* shall be constructed of any of the following materials*:*

1. Fire walls in buildings of Type I or Type II construction shall be of any approved noncombustible materials.

   ~~**Exception:** Buildings~~

2. Fire walls in buildings of Type III or Type IV construction shall be of any approved noncombustible materials or of cross-laminated timber protected by a layer of 5/8 inch Type X gypsum wallboard
3. Fire walls in buildings of Type V construction shall be of any approved material.

Reason: This proposal would permit cross-laminated timber fire walls to be used in Types III and IV construction in lieu of noncombustible materials. CLT is a prefabricated engineered wood product consisting of not less than three layers of solid-sawn lumber or structural composite lumber where the adjacent layers are cross oriented and bonded with structural adhesive toform a solid wood element. These solid wood elements can easily achieve a high fire resistance rating and have inherent structural advantages in fire conditions, when protected and rated appropriately. CLT has been shown by fire testing to perform well and will offer flexibility and practicality of design.

Cost Impact: Will not increase the cost of construction
there would be a decrease in construction costs with this proposal. Fire Walls could be constructed of the same material as the exterior walls utilizing methods and materials less expensive than noncombustible walls and with savings on labor as well. Fire tests conducted on this material has shown it to perform very well under fire conditions.

FS 30-15 : 706.3-FRANCIS5269

FS 31-15

706.3

Proponent: Homer Maiel, PE, CBO, representing ICC Tri-Chapter (Peninsula, East Bay, Monterey Bay) (hmaiel@gmail.com)

2015 International Building Code

Revise as follows:

706.3 Materials. *Fire walls* shall be of any *approved* noncombustible materials.

~~Exception~~Exceptions:

1. Buildings of Type V construction.
2. Two 2-hour fire walls of wood or steel light frame construction, with structural wood panel sheathing, shall be permitted to be substituted for a 3-hour non-combustible fire wall in building of Type III construction.

Reason: Substituting two 2-hour light frame walls for a single required 3-hour wall provides flexibilty in design and construction while improving fire resistance, which outweighs material considerations. Some current fire walls designs in Type III construction call for the construction of three separate walls in order to accomplish the required rating with a noncombustible assembly in the center and a light frame assembly on each side with plywood sheathing providing vertical support and serving as a shear wall for the building on each side of the fire wall. Each of these walls could be utilized as a 2-hour fire wall with the floor sheathing continuous through at the floor and roof levels as proposed in a separate code change for Section 706.2. This proposed arangement provides a better structural solution and also is an opportunity to minimize air infiltration or loss through the space between walls. This allows improved effeciency of materials and design while also improving structural and energy performance. From a fire standpoint, it is felt two 2-hour walls walls are better or equivalent to one 3-hour wall.
The following link is to a Structural Engineers of Southern California recommendation to carry the floor sheathing through fire walls.

http://www.icclabc.org/uploads/opinion_from_SEAOSC_on_Firewall_Final.pdf

Cost Impact: Will not increase the cost of construction
This code change does not create a new requirement. It allows an additional option for compliance that is not required.

FS 32-15

706.5.1

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

2015 International Building Code

Revise as follows:

706.5.1 Exterior walls. Where ~~the~~ a *fire wall* intersects an *exterior ~~walls~~wall*, the *fire-resistance rating* and opening protection of the *exterior walls* shall comply with one of the following:

1. The *exterior walls* on both sides of the *fire wall* shall have a 1-hour *fire-resistance rating* with $^{3}/_{4}$-hour ~~protection where~~ opening ~~protection is required by Section 705.8~~protectives. The *fire-resistance rating* of the *exterior wall* shall extend not less than 4 feet (1220 mm) on each side of the intersection of the *fire wall* to *exterior wall*. The maximum area of protected openings located in the 4-foot (1220 mm) exterior wall segments shall not exceed 15 percent of the wall segment in any story. *Exterior wall* intersections at *fire walls* that form an angle equal to or greater than 180 degrees (3.14 rad) do not need *exterior wall* protection.
2. Buildings or spaces on both sides of the intersecting *fire wall* shall assume to have an imaginary *lot line* at the *fire wall* and extending beyond the exterior of the *fire wall*. The location of the assumed line in relation to the *exterior walls* and the *fire wall* shall be such that the *exterior wall* and opening protection meet the requirements set forth in Sections 705.5 and 705.8. Such protection is not required for *exterior walls* terminating at *fire walls* that form an angle equal to or greater than 180 degrees (3.14 rad).

Reason: The current language in the code is confusing regarding the exterior openings on each side of a fire wall terminating at the exterior wall. It references required protected openings in Section 705.8. Table 705.8 limits the area of unprotected and protected openings based on fire separation distance. It does not "require" protected openings anywhere. We have set a limitation of 15% of the area of the protected wall to limit the amount of openings. The 15% is based on the amount of protected openings permitted in Table 705.8 for a fire separation distance of 3-5 feet. We have also done some minor editorial revisions to make the section read better.

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

FS 32-15 : 706.5.1-THOMAS4434

FS 33-15

706.8

Proponent: David Kulina, representing Engel Architects (david@engelarch.com)

2015 International Building Code

Revise as follows:

706.8 Openings. Each opening through a *fire wall* shall be protected in accordance with Section 716.5 and shall not exceed 156 square feet (15 m^2). The aggregate width of openings in a wall over 24 feet long at any floor level shall not exceed 25 percent of the length of the wall.

Exceptions:

1. Openings are not permitted in party walls constructed in accordance with Section 706.1.1.
2. Openings shall not be limited to 156 square feet (15 m^2) where both buildings are equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1.

Reason: Occassionally, a limited fire wall is needed to separate two buildings that are connected with a narrow corridor. For example, two 100,000 s.f. warehouses may be connected by a 12' access tunnel. The 25% rule limits the opening to 36". Assuming the firewall would be 48" outside each wall of the corridor, the proposed change would allow that opening to be 12' wide. The 24' limit proposed would allow for loads up to 16" wide, which would accomodate most wide industrial loads.

Cost Impact: Will not increase the cost of construction
Cost will not be increased.There's not a definite impact on cost. For example, a coiling fire door costs $1.50 / s.f., which is more than the cost of block. So, allowing a larger coiling fire door in a wall would mean additional cost. However, in some circumstances, it will allow two buildings to have a smaller link between the structures, thus saving money.

FS 33-15 : 706.8-KULINA4548

FS 34-15

Part I:
706.10, 706.10.1 (New), 706.10.2 (New), Chapter 35
Part II:
707.9, 707.10 (New), 715.4 (New), 715.4.1 (New), Chapter 35
Part III:
715.7 (New), Chapter 35

THIS IS A 3 PART CODE CHANGE. ALL PARTS WILL BE HEARD BY THE IBC-FIRE SAFETY COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THIS COMMITTEE.

Proponent: Tony Crimi, representing International Firestop Council (tcrimi@sympatico.ca)

Part I

2015 International Building Code

706.10 Joints. Joints made in or between *fire walls* shall comply with Section 715.

Add new text as follows:

706.10.1 Joints at floors. Where a fire wall is permitted to terminate at the underside of the roof sheathing, deck or slab in accordance with 706.6, joints at the intersection of a fire wall and the underside of a fire-resistance-rated roof assembly, slab or deck above shall comply with Section 715.

706.10.2 Joints at nonfire-resistance rated roof intersections in lieu of parapets. Where vertical continuity in accordance with section 706.6 is not provided by a parapet, joints at the intersection of a fire wall and a nonfire-resistance-rated roof assembly, roof slab, or roof deck shall be protected by an approved continuity head of wall joint system installed as tested in accordance with ASTM E2837. The system shall have an F rating/T rating of not less than that of the firewall.

Add new standard(s) as follows:
Add new Referenced Standard to Chapter 35 as follows:

ASTM E2837, Standard Test Method for Determining the Fire Resistance of Continuity Head-of-Wall Joint Systems Installed between Rated Wall Assemblies and Nonrated Horizontal Assemblies.

Part II

2015 International Building Code

Revise as follows:

707.9 ~~Voids~~Joints at intersections. The ~~voids created~~joints at the intersection of a *fire barrier* and ~~a nonfire-resistance-rated roof assembly or~~the underside of a nonfire-resistance-rated ~~exterior wall assembly~~sheathing, slab or deck above shall be filled. An approved material or system shall be used to fill the ~~void~~joint, and shall be securely installed in or on the intersection for its entire length so as not to dislodge, loosen or otherwise impair its ability to accommodate expected building movements and to retard the passage of fire and hot gases.

Add new text as follows:

707.10 Joints at intersections of fire barriers and nonfire-resistance-rated exterior walls The joints at the intersection of a fire barrier and a nonfire-resistance-rated exterior wall assembly shall be filled. An approved material or system shall be used to fill the joint, and it shall be securely installed in or on the intersection for its entire length so as not to dislodge, loosen or otherwise impair its ability to accommodate expected building movements and to retard the passage of fire and hot gases.

715.4 Joints between fire barriers and nonfire-resistance-rated roofs Where required elsewhere in this code,joints at the intersection of fire barriers and the underside of a nonfire-resistance-rated roof sheathing, slab or deck above shall be protected by an approved continuity head-of-wall joint system installed as tested in accordance with ASTM E 2837 to provide a F rating for a time period not less than the required fire-resistance rating of the wall assembly in which it is installed.

715.4.1 Installation Continuity head-of-wall joint systems shall be securely installed in or over the joint for its entire length so as not to dislodge, loosen or otherwise impair its ability to accommodate expected building movements and to retard the passage of fire and hot gases.

Add new standard(s) as follows:
ASTM E 2837-13 Standard Test Method for Determining the Fire Resistance of Continuity Head-of-Wall Joint Systems

Part III

2015 International Building Code

Add new text as follows:

715.7 Joints at top of wall Intersections in fire barriers The voids created at the intersection of a fire barrier and a non-fire-resistance-rated floor or roof sheathing, slab or deck above shall be protected by an approved continuity head of wall joint system installed as tested in accordance with ASTM E2837. The system shall have an F rating/T rating of minimum 1 hour, but not less than that of the fire barrier.

Add new standard(s) as follows:
ASTM E 2837-13, Standard Test Method for Determining the Fire Resistance of Continuity Head-of-Wall Joint Systems Installed between Rated Wall Assemblies and Nonrated Horizontal Assemblies

Reason:

Part I: The Code allows several exceptions to the general requirement for vertical continuity of fire walls in section 706.6, and specifically to the requirement to have a parapet. However, unlike for fire barriers, the Code is silent as to how the joints created between the top of a fire wall and a fire-resistance rated and/or non-fire-resistance rated roof are to be protected from fire spread through the top-of-wall joint when any of the parapet exceptions are used.
In the case of fire barriers, which are a less critical building safety feature than fire walls, Section 707.9 was added to the 2012 IBC to clarify that voids created at the intersection of a fire barrier and a nonfire-resistance rated roof assembly must be filled with an approved material or system to prevent fire spread. One example of such an application is a fire barrier used to separate occupancies in a metal (typically pre-engineered) building that would not have a fire-rated roof. The ASTM E 2837 Standard evaluates continuity head-of-wall joint systems for this specific application. The joint systems tested and listed in accordance with ASTM E2837 provide an assurance that the installed joint detail will provide the continuity of fire resistance established by the rated wall assembly, right up to the deck above.

In the hierarchy of passive fire protection construction elements, fire walls are used in the most critical locations and applications. The code language proposed here parallels that of sections 707.8 and 707.9 for fire barriers, except that in 706.12, the ASTM E2837 standard has been referenced. Using tested joint systems at the top of the firewall where the firewall ends below the roof deck will provide an assurance that fire cannot get past the fire wall at this potential weak point. None of the joint systems listed by UL for this application require any modifications to the wall or to the roof deck. The test is focused only on the fire performance of the joint itself.

At the time Section 707.9 was proposed to address the top-of-wall joint for fire barriers intersecting a non-rated roof, no consensus test standard existed to test head-of-wall joint systems involving nonfire-resistance rated horizontal assemblies. Therefore, the 2012 code described how the void protection is to be provided. However, it is rather subjective for the designer and code official to determine. ASTM E 2837, "Standard Test Method for Determining the Fire Resistance of Continuity Head-of-Wall Joint Systems Installed Between Rated Wall Assemblies and Nonrated horizontal Assemblies" was developed precisely to address this condition. This standard allows for the objective evaluation of a joint's ability to prevent fire spread through the joint installed at the intersection of a rated wall assembly and a non-rated roof assembly.

The ASTM E 2837 F and T ratings directly address the top-of-wall joint performance requirements specified in 707.9 that the material or system will not dislodge, loosen or otherwise impair its ability to accommodate expected building movements and to retard the passage of fire and hot gases. For fire walls, the Code should specify a test method for the top-of-wall joint to ensure that this performance is achieved without any doubt.

Part II: The 2012 and later editions of the International Building Code have a provision whereby the voids created at the intersection of a fire barrier and the underside of a nonfire-resistance-rated roof sheathing, slab or deck above shall be filled with an approved material or system. While this language gives the code official the ability to accept some matching tested system, it does not acknowledge the existence of a new fire test standard and tested systems that specifically addresses the fire performance of these joints. This proposal then recognizes the existence of the new Standard ASTM E 2837, entitled "Standard Test Method for Determining the Fire Resistance of Continuity Head-of-Wall Joint Systems Installed Between Rated Wall Assemblies and Nonrated Horizontal Assemblies", along with the tested systems. Since there are a limited number of published systems at this time, the use of system is being proposed as an option to the current allowance of an approved material or system. If desired, at some later date, when more tested systems are available, the code language can be revised once again to mandated tested systems in much the same way systems tested to ASTM E 1966 or UL 2079 are mandated for rated-to-rated construction.

Part III: Chapter 7 of the IBC has numerous requirements for continuity of vertical and horizontal fire resistance rated assemblies. Wall continuity (i.e. continuity of fire resistance) is required at joint openings, which are typically linear voids, gaps, openings, or other discontinuities within an assembly, or at the intersection with other assemblies. For the intersection of a rated wall assembly and nonrated horizontal assembly above (floor or roof), the joint between the two assemblies would need to provide the same fire resistance as the rated wall assembly. A joint detail with fire resistance less than that of the wall would allow for the propagation of fire and/or smoke to the other side of the wall much earlier than the rated wall would, thus diminishing the life safety function of the rated wall, and even making the wall near useless if the fire and/or smoke are able to spread very quickly through the joint above the wall to the other side of the fire barrier.
Test methods ASTM E1966 and UL 2079, which are referenced in the IBC, are only applicable to the testing of joints between two intersecting assemblies if both of the assemblies are fire resistance rated. To allow the evaluation of the fire resistance of joint details between a fire resiatance rated wall and a non-fire rated roof or floor above, ASTM began work in 2007 on a new test method. That test standard was completed and issued in 2011, and was issued as "ASTM E2837, Standard Test Method for Determining the Fire Resistance of Continuity Head-of-Wall Joint Systems Installed between Rated Wall Assemblies and Nonrated Horizontal Assemblies". With the standard having existed for almost 4 years, both UL and Intertek now

have tested system listings in accordance with the standard.

It is important to note that none of the listed systems requires any modifications at all to the wall assembly or to the floor or roof assembly above. The listed systems simply specify the materials that are needed to fill and seal the joint in a manner that will prevent premature fire spread through that joint. As indicated by the title of the ASTM standard ("Continuity Head of Wall Joint Systems"), the test is designed to evaluate the continuity of the wall's fire resistance rating up to the underside of the floor or roof deck above. Passing the test means that the joint detail must not allow fire spread through the joint prior to the given fire resistance rating, which would normally be the fire resistance rating of the fire barrier wall.

Section 707.5 requires smoke barriers to form an effective membrane continuous from the top of the foundation or floor/ceiling assembly below to the underside of the floor or roof sheathing, deck or slab above, including continuity through concealed spaces, such as those found above suspended ceilings, and interstitial structural and mechanical spaces. Section 707.9 of the IBC requires the joint opening at the top of the rated fire barrier wall assembly below the nonrated horizontal assembly to be protected, using performance language and dictating that the chosen material or system be approved. The ASTM E 2837 Standard was created to evaluate continuity head-of-wall joint systems for this specific application, providing exactly the code-mandated performance. Using a tested joint detail, instead of allowing joint details to be improvised for each and every building and then requiring the AHJ to approve the detail, will prvide a measure of consistency, predictability, and an even level of life safety from one building to the next.

To achieve the rating, the joint system must remains in the opening during the fire resistance test and the hose stream test, and will have withstood the fire resistance test for the rating period equal to the rated wall assembly by preventing flaming on the unexposed side of the test specimen and on the underside of the nonrated horizontal assembly on the unexposed side. The Integrity test also ensures no occurrence of ignition of the cotton pad, which is related to the passage of hot gases in the current IBC 707.9 requirements.

Cost Impact:

Part I: Will not increase the cost of construction
Based on the continuity provisions, these joints are already required to be addressed.

Part II: Will not increase the cost of construction
This code change will not increase the cost of construction as it does not mandate a tested system. In cases where a tested system would be the option chosen, the cost of construction will vary. In some cases, it may be decreased, due to the time saved (and therefore expense saved) by not needing to engineer and get approval for a custom-designed solution.

Part III: Will increase the cost of construction
This proposal may increase the cost of construction if the chosen joint detail for a given installation requires more work or higher cost materials than an inferior joint detail that an AHJ might have been willing to approve. This proposal may decrease the cost of construction in cases where it allows a contractor to simply specify a tested and listed detail, thus saving on the time and costs of designing a unique joint detail and getting that detail approved.

Analysis:

Part I: A review of the standard proposed for inclusion in the code, ASTM E2837, 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, 2015.

Part II: A review of the standard proposed for inclusion in the code, ASTM E2837, 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, 2015.

Part III: A review of the standard proposed for inclusion in the code, ASTM E2837, 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, 2015.

FS 35-15

707.3.11 (New), 711.2.4.7 (New)

Proponent: Adolf Zubia, ICC Staff, representing Fire Code Action Committee (fcac@iccsafe.org)

2015 International Building Code

Add new text as follows:

707.3.11 Fire Pump Rooms. The *fire barriers* separating fire pump rooms from other building areas shall have a *fire-resistance rating* of not less than that is indicated in Section 913.2.1.

711.2.4.7 Fire Pump Rooms. The *horizontal assemblies* separating fire pump rooms from other building areas shall have a *fire-resistance rating* of not less than that is indicated in Section 913.2.1.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx?usertoken={token}&Site=icc
Fire pump rooms are constructed of fire barriers and horizontal assemblies as stated in Section 913.2.1 but a pointer should be inserted in the fire barrier section for designers and code officials. F203–07/08 inserted 912.2.1, however, it was never correlated to the fire barrier or horizontal assembly section in Chapter 7.

Cost Impact: Will not increase the cost of construction
This change does not add any new requirements for fire resistance rated separation of fire pump rooms. It merely provides guidance to the designer by pointing to the existing requirements for both vertical and horizontal separation.

FS 35-15 : 707.3.11 (New)-ZUBIA4193

FS 36-15

707.6

Proponent: Joseph Hetzel, representing Door & Access Systems Manufacturers Association (Jhetzel@thomasamc.com)

2015 International Building Code

Revise as follows:

707.6 Openings. Openings in a *fire barrier* shall be protected in accordance with Section 716. Openings shall be limited to a maximum aggregate width of 25 percent of the length of the wall, and the maximum area of any single opening shall not exceed 156 square feet (15 m^2). Openings in enclosures for exit access stairways and ramps, interior exit stairways and ramps and exit passageways shall also comply with Sections 1019, 1023.4 and 1024.5, respectively.

Exceptions:

1. Openings shall not be limited to 156 square feet (15 m^2) where adjoining floor areas are equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
2. Openings shall not be limited to 156 square feet (15 m^2) or an aggregate width of 25 percent of the length of the wall where the opening protective is a fire door serving enclosures for exit access stairways and ramps, and interior exit stairways and ramps.
3. Openings shall not be limited to 156 square feet (15 m^2) or an aggregate width of 25 percent of the length of the wall where the opening protective has been tested in accordance with ASTM E 119 or UL 263 and has a minimum *fire-resistance rating* not less than the *fire-resistance rating* of the wall.
4. Fire window assemblies permitted in atrium separation walls shall not be limited to a maximum aggregate width of 25 percent of the length of the wall.
5. Openings shall not be limited to 156 square feet (15 m^2) or an aggregate width of 25 percent of the length of the wall where the opening protective is a fire door assembly in a *fire barrier* separating an enclosure for *exit access* stairways and ramps, and interior exit stairways and ramps from an exit passageway in accordance with Section 1023.3.1.
6. Openings shall not be limited to 156 square feet (15 m2) or an aggregate width of 25 percent of the length of the wall where the opening protective is a rolling steel *fire door* tested in accordance with UL 10B or NFPA 252 and labeled in accordance with Section 716.5.7.2.

Reason: The current Exceptions do not address rolling steel fire doors, the most common opening protective greater than 156 square feet (15 m^2). The proposed Exception reflects long-standing common practice where the use of rolling steel fire doors have been determined to be both necessary and practical as opening protectives. Rolling steel fire doors offer benefits and provide solutions for opening protection not available with other types of fire doors and should also qualify for exception.

Cost Impact: Will not increase the cost of construction

None.We believe the proposed change is consistent with common current practice and therefore only permits what is already being done. Since it is already being done, there is no effect on product or cost and therefore requires no further study.

FS 36-15 : 707.6-HETZEL3421

FS 37-15

707.9

Proponent: Masoud Sabounchi, representing masoud sabounchi (masoud@acecode.com)

2015 International Building Code

Revise as follows:

707.9 Voids at intersections. The voids created at the intersection of a *fire barrier* and ~~a nonfire-resistance-rated roof assembly or~~ a nonfire-resistance-rated exterior wall assembly shall be filled. An approved material or system shall be used to fill the void, and shall be securely installed in or on the intersection for its entire length so as not to dislodge, loosen or otherwise impair its ability to accommodate expected building movements and to retard the passage of fire and hot gases.

Reason: Section 707.5 requires fire barriers to be continuous through concealed spaces and be attached to the underside of the floor or roof sheathing, slab or deck. Section 707.9 creates a conflict with section 707.5 by allowing the fire barriers to terminate at the ceiling and the cavity space above the ceiling to be filled. Section 707.9 would allow fire barriers such as shafts, occupancy separations and similar to be discontinued through the cavity space of a non-fire resistance rated roof-ceiling assembly while the same fire barrier has to be continuous thru the cavity space of a fire resistance rated roof-ceiling assembly. This proposal coordinates section 707.9 with 707.5.

Cost Impact: Will not increase the cost of construction
This proposal is for coordiantion of section 707.9 with 707.5

FS 37-15 : 707.9-SABOUNCHI4361

FS 38-15

708.4, 718.4.2

Proponent: Marshall Klein, representing National Multtfamily Housing Council (makleinfpe@comcast.net)

2015 International Building Code

Revise as follows:

708.4 Continuity. Fire partitions shall extend from the top of the foundation or floor/ceiling assembly below to the underside of the floor or roof sheathing, slab or deck above or to the fire-resistance-rated floor/ceiling or roof/ceiling assembly above, and shall be securely attached thereto. In combustible construction where the *fire partitions* are not required to be continuous to the sheathing, deck or slab, the space between the ceiling and the sheathing, deck or slab above shall be fireblocked or draftstopped in accordance with Sections 718.2 and 718.3 at the partition line. The supporting construction shall be protected to afford the required *fire-resistance rating* of the wall supported, except for walls separating tenant spaces in *covered and open mall buildings*, walls separating *dwellingunits*, walls separating *sleeping units* and *corridor* walls, in buildings of Type IIB, IIIB and VB construction.

Exceptions:

1. The wall need not be extended into the crawl space below where the floor above the crawl space has a minimum 1-hour *fire-resistance rating*.
2. Where the room-side fire-resistance-rated membrane of the *corridor* is carried through to the underside of the floor or roof sheathing, deck or slab of a fire-resistance-rated floor or roof above, the ceiling of the *corridor* shall be permitted to be protected by the use of ceiling materials as required for a 1-hour fire-resistance-rated floor or roof system.
3. Where the *corridor* ceiling is constructed as required for the *corridor* walls, the walls shall be permitted to terminate at the upper membrane of such ceiling assembly.
4. The fire partitions separating tenant spaces in a *covered or open mall building*, complying with Section 402.4.2.1, are not required to extend beyond the underside of a ceiling that is not part of a fire-resistance-rated assembly. A wall is not required in *attic* or ceiling spaces above tenant separation walls.
5. Attic fireblocking or draftstopping is not required at the partition line in Group R-2 ~~buildings that do not exceed~~occupancies up to and including four *stories* in height in buildings not exceeding 60 feet in height *abovegrade plane*, provided the *attic* space is subdivided by draftstopping into areas not exceeding 3,000 square feet (279 m^2) or above every two *dwellingunits*, whichever is smaller.
6. Fireblocking or draftstopping is not required at the partition line in buildings equipped with an *automatic sprinkler system* installed throughout in accordance with Section 903.3.1.1 or 903.3.1.2, provided that automatic sprinklers are installed in combustible floor/ceiling and roof/ceiling spaces.

718.4.2 Groups R-1 and R-2. Draftstopping shall be provided in *attics*, mansards, overhangs or other concealed roof spaces of Group R-2 buildings with three or more *dwellingunits* and in all Group R-1 buildings. Draftstopping shall be installed above, and in line with, *sleeping unit* and *dwellingunit* separation walls that do not extend to the underside of the roof sheathing above.

Exceptions:

1. Where *corridor* walls provide a *sleeping unit* or *dwellingunit* separation, draftstopping shall only be required above one of the *corridor* walls.
2. Draftstopping is not required in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
3. In occupancies in Group R-2 ~~that do not exceed~~up to and including four *stories*in height in buildings not exceeding 60 feet in height *abovegrade plane*, the *attic* space shall be subdivided by *draftstops* into areas not exceeding 3,000 square feet (279 m^2) or above every two *dwellingunits*, whichever is smaller.
4. Draftstopping is not required in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.2, provided that automatic sprinklers are installed in the combustible concealed space where the draftstopping is being omitted.

Reason: Completing correlation between the I-Codes and NFPA 13R's scope, which was partially done last code cycle under Proposal F134-13, approved as modified. That proposal correlated Section 903.3.1.2 with NFPA 13R Section 1.1. This code proposal correlates these two exceptions with Section 903.3.1.2, recognizing that the intent of the exceptions is to cover buildings protected by NFPA 13R systems and limit the exceptions to buildings not exceeding 60-feet in height above grade plane. As currently written, the exceptions could be applied to buildings that are taller than 60 feet, which was not intended and should not be allowed.

Cost Impact: Will not increase the cost of construction
Code Proposal's intent is just to clarify the intended application of the exceptions.

FS 39-15

708.4, 718.4.2

Proponent: Joseph Holland, representing Hoover Treated Wood Products (jholland@frtw.com)

2015 International Building Code

Revise as follows:

708.4 Continuity. Fire partitions shall extend from the top of the foundation or floor/ceiling assembly below to the underside of the floor or roof sheathing, slab or deck above or to the fire-resistance-rated floor/ceiling or roof/ceiling assembly above, and shall be securely attached thereto. In combustible construction where the *fire partitions* are not required to be continuous to the sheathing, deck or slab, the space between the ceiling and the sheathing, deck or slab above shall be fireblocked or draftstopped in accordance with Sections 718.2 and 718.3 at the partition line. The supporting construction shall be protected to afford the required *fire-resistance rating* of the wall supported, except for walls separating tenant spaces in *covered and open mall buildings*, walls separating *dwellingunits*, walls separating *sleeping units* and *corridor* walls, in buildings of Type IIB, IIIB and VB construction.

Exceptions:

1. The wall need not be extended into the crawl space below where the floor above the crawl space has a minimum 1-hour *fire-resistance rating*.
2. Where the room-side fire-resistance-rated membrane of the *corridor* is carried through to the underside of the floor or roof sheathing, deck or slab of a fire-resistance-rated floor or roof above, the ceiling of the *corridor* shall be permitted to be protected by the use of ceiling materials as required for a 1-hour fire-resistance-rated floor or roof system.
3. Where the *corridor* ceiling is constructed as required for the *corridor* walls, the walls shall be permitted to terminate at the upper membrane of such ceiling assembly.
4. The fire partitions separating tenant spaces in a *covered or open mall building*, complying with Section 402.4.2.1, are not required to extend beyond the underside of a ceiling that is not part of a fire-resistance-rated assembly. A wall is not required in *attic* or ceiling spaces above tenant separation walls.
5. Attic fireblocking or draftstopping is not required at the partition line in Group R-2 buildings that do not exceed four *storiesabovegrade plane*, provided the *attic* space is subdivided by draftstopping into areas not exceeding 3,000 square feet (279 m^2) or above every two *dwellingunits*, whichever is smaller.
6. Fireblocking or draftstopping is not required at the partition line in buildings equipped with an *automatic sprinkler system* installed throughout in accordance with Section 903.3.1.1 or 903.3.1.2, provided <u>either:</u>
    - 6.1. that automatic sprinklers are installed in combustible floor/ceiling and roof/ceiling spaces <u>or,</u>
    - 6.2. <u>that the combustible floor/ceiling and roof/ceiling spaces are constructed entirely of fire-retardant-treated-wood complying with Section 2303.2</u>.

718.4.2 Groups R-1 and R-2. Draftstopping shall be provided in *attics*, mansards, overhangs or other concealed roof spaces of Group R-2 buildings with three or more *dwellingunits* and in all Group R-1 buildings. Draftstopping shall be installed above, and in line with, *sleeping unit* and *dwellingunit* separation walls that do not extend to the underside of the roof sheathing above.

Exceptions:

1. Where *corridor* walls provide a *sleeping unit* or *dwellingunit* separation, draftstopping shall only be required above one of the *corridor* walls.
2. Draftstopping is not required in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
3. In occupancies in Group R-2 that do not exceed four *storiesabovegrade plane*, the *attic* space shall be subdivided by *draftstops* into areas not exceeding 3,000 square feet (279 m^2) or above every two *dwellingunits*, whichever is smaller.
4. Draftstopping is not required in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.2, provided <u>either:</u>
    - 4.1. that automatic sprinklers are installed in the combustible concealed space where the draftstopping is being omitted <u>or,</u>
    - 4.2. <u>that the combustible concealed space is constructed entirely of fire-retardant-treated-wood complying with Section 2303.2</u>.

Reason: FRTW is permitted in numerous areas of the Code in non-combustible construction because of its fire retardant properties and excellent fire data history. Even under the NFPA 13 Sprinkler Standard, combustible concealed spaces that are constructed entirely of FRTW are not required to have sprinkler protection (NFPA 13 Section 8.15.1.2.11).

Such an alternative also provides better for proper ventilation of the attic space above dwelling units. In typical multiple-family construction, with dwelling units along the front and back of the building, trusses run front to rear with soffit vents at each end. When draftstopping or firestopping are required at each dwelling unit, it usually blocks achieving proper cross ventilation, eliminating the use of ridge vents. Soffit and ridge venting allow natural air circulation that, in turn, lowers the roof sheathing temperature in the winter, relieving many of the problems associated with ice dams. Therefore, providing an alternative to drafttstopping, firestopping or sprinklering such concealed spaces would be reasonable not only from a life safety and fire protection standpoint, but also provide better ventilation and energy compliance.
In typical multiple-family construction, with dwelling units along the front to rear with soffit vents at each end. If draftstopping were required at each dwelling unit, it would block cross ventilation, eliminating the use of ridge vents. Soffit and ridge venting allow natural air circulation that, in turn, lowers the roof sheathing temperature in the winter, relieving many of the problems associated with ice dams.
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Cost Impact: Will not increase the cost of construction
Will not increase the cost of construction. Only provides a reasonable option to improve attic ventilation and energy compliance by using FRT that is permitted in other sections of the Code as an alternative for other similar life safety and fire protection Code requirements

FS 39-15 : 708.4-HOLLAND5459

FS 40-15

708.4

Proponent: Masoud Sabounchi, Representing Colorado Chapter of ICC, representing masoud sabounchi (masoud@acecode.com)

2015 International Building Code

Revise as follows:

708.4 Continuity. Fire partitions shall extend from the top of the foundation or floor/ceiling assembly below to the underside of the floor or roof sheathing, slab or deck above or to the fire-resistance-rated floor/ceiling or roof/ceiling assembly above, and shall be securely attached thereto. In combustible construction where the *fire partitions* are not required to be continuous to the sheathing, deck or slab, the space between the ceiling and the sheathing, deck or slab above shall be fireblocked or draftstopped in accordance with Sections 718.2 and 718.3 at the partition line. The supporting construction shall be protected to afford the required *fire-resistance rating* of the wall supported, except for walls separating tenant spaces in *covered and open mall buildings*, walls separating *dwellingunits*, walls separating *sleeping units* and *corridor* walls, in buildings of Type IIB, IIIB and VB construction.

Exceptions:

1. The wall need not be extended into the crawl space below where the floor above the crawl space has a minimum 1-hour *fire-resistance rating*.
2. Where the room-side fire-resistance-rated membrane of the *corridor* is carried through to the underside of the floor or roof sheathing, deck or slab of a fire-resistance-rated floor or roof above, the ceiling of the *corridor* shall be permitted to be protected by the use of ceiling materials as required for a 1-hour fire-resistance-rated floor or roof system.
3. Where the *corridor* ceiling is constructed as required for the *corridor* walls, the walls shall be permitted to terminate at the upper membrane of such ceiling assembly.
4. The fire partitions separating tenant spaces in a *covered or open mall building*, complying with Section 402.4.2.1, are not required to extend beyond the underside of a ceiling that is not part of a fire-resistance-rated assembly. A wall is not required in *attic* or ceiling spaces above tenant separation walls.
5. Attic fireblocking or draftstopping is not required at the partition line in Group R-2 buildings that do not exceed four *storiesabovegrade plane*, provided the *attic* space is subdivided by draftstopping into areas not exceeding 3,000 square feet (279 m^2) or above every two *dwellingunits*, whichever is smaller.
6. Fireblocking or draftstopping is not required at the partition line in buildings equipped with an *automatic sprinkler system* installed throughout in accordance with Section 903.3.1.1 or 903.3.1.2, provided that automatic sprinklers are installed in combustible floor/ceiling and roof/ceiling spaces.
7. <u>Draftstopping is not required in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.</u>

Reason: Sections 718.3.2 exception #1, 718.3.3 exception, 718.4.2 exception #2, and 718.4.3 exception allow elimination of draft stops in concealed combustible floor or attic spaces when the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 (NFPA 13). Section 708.4 exception 6 allows elimination of draftstopping when a NFPA 13 sprinkler system is installed and the combustible floor and attic spaces are sprinkler protected, Exceptions in section 718.3 and 718.4 do not require sprinkler protection of combustible floor of attic spaces to allow elimination of draft stops when building is protected by a NFPA 13 automatic sprinkler system. NFPA 13 has specific provisions that would allow elimination of sprinkler protection in combustible concealed spaces (such as filling the combustible concealed spaces with non-combustible insulation). Either exceptions to section 718.3 and 718.4 have to be revised to indicate that draftstopping can only be eliminated when concealed combustible spaces are sprinkler protected or another exception would be required in Section 708.4 to coordinate the noted exceptions with each other. The proposed exception creates this consistency. The reason exception #6 of Section 708.4 remains unchanged is because this exception allows elimination of "fire blocking" as well as draftstopping while the proposed exception #7 only addresses draftstopping.

Cost Impact: Will not increase the cost of construction
The proposed addition of exception #7 to Section 708.4 will make provisions of this section consistent with the exceptions in Section 718.3 and 718.4 and will not increase the construction cost.

FS 40-15 : 708.4-SABOUNCHI4364

FS 41-15

708.4, 718.4.2

Proponent: Jeffrey Shapiro, National Multifamily Housing Council, representing National Multifamily Housing Council (jeff.shapiro@intlcodeconsultants.com); Anthony Apfelbeck, City of Altamonte Springs Building/Fire Safety, representing City of Altamonte Springs (ACApfelbeck@altamonte.org)

2015 International Building Code

Revise as follows:

708.4 Continuity. Fire partitions shall extend from the top of the foundation or floor/ceiling assembly below to the underside of the floor or roof sheathing, slab or deck above or to the fire-resistance-rated floor/ceiling or roof/ceiling assembly above, and shall be securely attached thereto. In combustible construction where the *fire partitions* are not required to be continuous to the sheathing, deck or slab, the space between the ceiling and the sheathing, deck or slab above shall be fireblocked or draftstopped in accordance with Sections 718.2 and 718.3 at the partition line. The supporting construction shall be protected to afford the required *fire-resistance rating* of the wall supported, except for walls separating tenant spaces in *covered and open mall buildings*, walls separating *dwellingunits*, walls separating *sleeping units* and *corridor* walls, in buildings of Type IIB, IIIB and VB construction.

Exceptions:

1. The wall need not be extended into the crawl space below where the floor above the crawl space has a minimum 1-hour *fire-resistance rating*.
2. Where the room-side fire-resistance-rated membrane of the *corridor* is carried through to the underside of the floor or roof sheathing, deck or slab of a fire-resistance-rated floor or roof above, the ceiling of the *corridor* shall be permitted to be protected by the use of ceiling materials as required for a 1-hour fire-resistance-rated floor or roof system.
3. Where the *corridor* ceiling is constructed as required for the *corridor* walls, the walls shall be permitted to terminate at the upper membrane of such ceiling assembly.
4. The fire partitions separating tenant spaces in a *covered or open mall building*, complying with Section 402.4.2.1, are not required to extend beyond the underside of a ceiling that is not part of a fire-resistance-rated assembly. A wall is not required in *attic* or ceiling spaces above tenant separation walls.
5. Attic fireblocking or draftstopping is not required at the partition line in Group R-2 buildings that do not exceed four *storiesabovegrade plane*, provided the *attic* space is subdivided by draftstopping into areas not exceeding 3,000 square feet (279 m^2) or above every two *dwellingunits*, whichever is smaller.
6. Fireblocking or draftstopping is not required at the partition line in buildings equipped with an *automatic sprinkler system* installed throughout in accordance with Section 903.3.1.1 or 903.3.1.2, provided that automatic sprinklers are installed in combustible floor/ceiling and roof/ceiling spaces.
7. <u>In attics exceeding 5,000 square feet in area or covering more than four dwelling units in R-2 occupancies, attic fireblocking or draftstopping is not required at the partition line where the attic space is subdivided by multi-layered draftstops into areas not exceeding 5,000 square feet or above every four dwelling units, whichever is smaller, using one of the following for draftstopping materials. Joints of each layer shall be staggered from other layers. If roof trusses are used, draftstopping material shall be permitted to be placed with multiple layers on one side of the truss or with one or more layers on opposite sides.</u>
    - 7.1. <u>2 or more layers of ½" gypsum board</u>
    - 7.2. <u>2 or more layers of 15/32" wood structural panel,</u>
    - 7.3. <u>3 or more layers of 7/16" oriented strand board (OSB),</u>
    - 7.4. <u>Other *approved* materials adequately supported.</u>

718.4.2 Groups R-1 and R-2. Draftstopping shall be provided in *attics*, mansards, overhangs or other concealed roof spaces of Group R-2 buildings with three or more *dwellingunits* and in all Group R-1 buildings. Draftstopping shall be installed above, and in line with, *sleeping unit* and *dwellingunit* separation walls that do not extend to the underside of the roof sheathing above.

Exceptions:

1. Where *corridor* walls provide a *sleeping unit* or *dwellingunit* separation, draftstopping shall only be required above one of the *corridor* walls.
2. Draftstopping is not required in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
3. In occupancies in Group R-2 that do not exceed four *storiesabovegrade plane*, the *attic* space shall be subdivided by *draftstops* into areas not exceeding 3,000 square feet (279 m^2) or above every two *dwellingunits*, whichever is smaller.

4. Draftstopping is not required in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.2, provided that automatic sprinklers are installed in the combustible concealed space where the draftstopping is being omitted.
5. In attics exceeding 5,000 square feet in area or covering more than four dwelling units in R-2 occupancies, attic fireblocking or draftstopping is not required at the partition line where the attic space is subdivided by multi-layered draftstops into areas not exceeding 5,000 square feet or above every four dwelling units, whichever is smaller, using one of the following for draftstopping materials. Joints of each layer shall be staggered from other layers. If roof trusses are used, draftstopping material shall be permitted to be placed with multiple layers on one side of the truss or with one or more layers on opposite sides.
    5.1. 2 or more layers of ½" gypsum board,
    5.2. 2 or more layers of 15/32" wood structural panel,
    5.3. 3 or more layers of 7/16" oriented strand board (OSB),
    5.4. Other approved materials adequately supported.

Reason: Concerns have been expressed by some fire officials regarding the expected time to failure of single layer attic draftstops; albeit, it is recognized that draftstops are not intended to offer significant fire resistance. The concept offered by this proposal is to provide draftstops that have a more robust fire performance at increased intervals, recognizing that staggered joints on multiple layers and increased material thickness to approximately one inch will significantly increase time to failure of an assembly versus what is currently permitted by the code. This improves the likelihood for an assembly to still be in place when the fire department arrives on the scene of a fire that has originated in or extended to an attic. Using IBC Table 722.6.2(1) for guidance, 2 layers of ½" gypsum board or 2 layers of 15/32" wood structural panel (such as plywood) bonded with exterior glue may provide 20 minutes of fire resistance. OSB is also a wood structural panel, but because industry standard is to use 7/16" OSB (as compared to 15/32" plywood), 3 layers was determined to be appropriate, given the performance objectives of this section. The proposed 5,000 square foot or 4-dwelling unit (whichever is smaller) threshold for applying this exception is included to ensure that someone won't argue that attics with a total area that is smaller than these thresholds don't need any draftstopping at all.
If the proposal that rewrites the entirety of Section 708.4 is approved, it is the intent of this code change that the proposed exception become Exception 4 to the revised Section 708.4.2, and there would be no need to duplicate the exception in Section 718.

Cost Impact: Will not increase the cost of construction
This proposal offers an additional option for construction that is not mandatory; therefore, it will not increase the cost of construction.

FS 41-15 : 708.4-SHAPIRO5307

FS 42-15

708.1, 708.4, 708.4 (New), 708.4.1 (New), 708.4.2 (New), 718.3, 718.3.2, 718.3.3, 718.4, 718.4.2, 718.4.3

Proponent: Jeffrey Shapiro, National Multifamily Housing Council, representing National Multifamily Housing Council (jeff.shapiro@intlcodeconsultants.com)

2015 International Building Code

Revise as follows:

708.1 General. The following wall assemblies shall comply with this section.

1. Separation walls as required by Section 420.2 for ~~Groups~~Group I-1~~, R-1, R-2~~ and ~~R-3~~Group R occupancies.
2. Walls separating tenant spaces in *covered and open mall buildings* as required by Section 402.4.2.1.
3. Corridor walls as required by Section 1020.1.
4. Elevator lobby separation as required by Section 3006.2.
5. Egress balconies as required by Section 1019.2

Delete and substitute as follows:

~~**708.4 Continuity.** Fire partitions shall extend from the top of the foundation or floor/ceiling assembly below to the underside of the floor or roof sheathing, slab or deck above or to the fire-resistance-rated floor/ceiling or roof/ceiling assembly above, and shall be securely attached thereto. In combustible construction where the *fire partitions* are not required to be continuous to the sheathing, deck or slab, the space between the ceiling and the sheathing, deck or slab above shall be fireblocked or draftstopped in accordance with Sections 718.2 and 718.3 at the partition line. The supporting construction shall be protected to afford the required *fire-resistance rating* of the wall supported, except for walls separating tenant spaces in *covered and open mall buildings*, walls separating *dwellingunits*, walls separating *sleeping units* and *corridor* walls, in buildings of Type IIB, IIIB and VB construction.~~

~~**Exceptions:**~~

1. ~~The wall need not be extended into the crawl space below where the floor above the crawl space has a minimum 1-hour *fire-resistance rating.*~~
2. ~~Where the room-side fire-resistance-rated membrane of the *corridor* is carried through to the underside of the floor or roof sheathing, deck or slab of a fire-resistance-rated floor or roof above, the ceiling of the *corridor* shall be permitted to be protected by the use of ceiling materials as required for a 1-hour fire-resistance-rated floor or roof system.~~
3. ~~Where the *corridor* ceiling is constructed as required for the *corridor* walls, the walls shall be permitted to terminate at the upper membrane of such ceiling assembly.~~
4. ~~The fire partitions separating tenant spaces in a *covered or open mall building*, complying with Section 402.4.2.1, are not required to extend beyond the underside of a ceiling that is not part of a fire-resistance-rated assembly. A wall is not required in *attic* or ceiling spaces above tenant separation walls.~~

1. ~~Attic fireblocking or draftstopping is not required at the partition line in Group R-2 buildings that do not exceed four *storiesabovegrade plane*, provided the *attic* space is subdivided by draftstopping into areas not exceeding 3,000 square feet (279 m^2) or above every two *dwellingunits*, whichever is smaller.~~
2. ~~Fireblocking or draftstopping is not required at the partition line in buildings equipped with an *automatic sprinkler system* installed throughout in accordance with Section 903.3.1.1 or 903.3.1.2, provided that automatic sprinklers are installed in combustible floor/ceiling and roof/ceiling spaces.~~

708.4 Continuity Fire partitions shall extend from the top of the foundation or floor/ceiling assembly below to:

1. The underside of the floor or roof sheathing, deck or slab above, or
2. The underside of a floor/ceiling or roof/ceiling assembly having a fire-resistance rating that is not less than the fire-resistance rating of the fire partition.

Fire partitions shall be securely attached to 1 or 2 above.

Exceptions:

1. Fire partitions shall not be required to extend into a crawl space below where the floor above the crawl space has a minimum 1-hour fire-resistance rating.
2. Fire partitions serving as a corridor wall shall not be required to extend above the lower membrane of a corridor ceiling provided the corridor ceiling membrane is equivalent to corridor wall membrane, and either:
   2.1. The room-side membrane of the corridor wall extends to the underside of the floor or roof sheathing, deck or slab of a fire-resistance-rated floor or roof above, or

2.2. The building is equipped with an automatic sprinkler system installed throughout in accordance with Section 903.3.1.1 or 903.3.1.2, including automatic sprinklers installed in the space between the top of the fire partition and underside of the floor or roof sheathing, deck or slab above.
3. Fire partitions serving as a corridor wall shall be permitted to terminate at the upper membrane of the corridor ceiling assembly where the corridor ceiling is constructed as required for the corridor wall.
4. Fire partitions separating tenant spaces in a covered or open mall building complying with Section 402.4.2.1 shall not be required to extend above the underside of a ceiling. Such ceiling shall not be required to be part of a fire-resistance-rated assembly, and the attic or space above the ceiling at tenant separation walls shall not be required to be subdivided by fire partitions.

Add new text as follows:

708.4.1 Supporting construction. The supporting construction for a fire partition shall have a fire-resistance rating that is equal to or greater than the required fire-resistance rating of the supported fire partition.

Exception. In buildings of Type IIB, IIIB and VB construction, the supporting construction requirement shall not apply to fire partitions separating tenant spaces in covered and open mall buildings, fire partitions separating dwelling units, fire partitions separating sleeping units, and fire partitions serving as corridor walls.

708.4.2 Fireblocks and draftstops in combustible construction In combustible construction where fire partitions do not extend to the underside of the floor or roof sheathing, deck or slab above, the space above and along the line of the fire partition shall be provided with one of the following:

1. Fire-blocking up to the underside of the floor or roof sheathing, deck or slab above using materials complying with 718.2.1, or
2. Draftstopping up to the underside of the floor or roof sheathing, deck or slab above using materials complying with Section 718.3.1 for floors or 718.4.1 for attics.

Exceptions:
1. Buildings equipped with an automatic sprinkler system installed throughout in accordance with Section 903.3.1.1, or in accordance with Section 903.3.1.2 provided that protection is provided in the space between the top of the fire partition and underside of the floor or roof sheathing, deck or slab above as required for systems complying with Section 903.3.1.1.
2. Where corridor walls provide a sleeping unit or dwelling unit separation, draftstopping shall only be required above one of the corridor walls.
3. In Group R-2 occupancies with less than 4 dwelling units, fire-blocking and draftstopping shall not be required.
4. In Group R-2 occupancies that do not exceed four stories above grade plane, the attic space shall be subdivided by draftstops into areas not exceeding 3,000 square feet (279 m2) or above every two dwelling units, whichever is smaller.
5. In Group R-3 occupancies with less than 3 dwelling units, fire-blocking and draftstopping shall not be required in floor assemblies. This exception shall not apply to Group R-4.

Revise as follows:

718.3 Draftstopping in floors. ~~In combustible construction, draftstopping~~
Draftstopping shall be installed to subdivide floor/ceiling assemblies ~~in the locations prescribed~~where required by Section 708.4.2. In other than Group R occupancies, draftstopping shall also be installed to subdivide combustible floor/ceiling assemblies so that horizontal floor areas do not exceed 1,000 square feet (93 m2).

Exception: Buildings equipped throughout with an automatic sprinkler system in ~~Sections 718.3.2 through 718.3.3.~~accordance with Section 903.3.1.1.

Delete without substitution:

~~**718.3.2 Groups R-1, R-2, R-3 and R-4.** Draftstopping shall be provided in floor/ceiling spaces in Group R-1 buildings, in Group R-2 buildings with three or more *dwellingunits*, in Group R-3 buildings with two *dwellingunits* and in Group R-4 buildings. Draftstopping shall be located above and in line with the *dwellingunit* and *sleeping unit* separations.~~

~~**Exceptions:**~~
~~1. Draftstopping is not required in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.~~
~~2. Draftstopping is not required in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.2, provided that automatic sprinklers are installed in the combustible concealed spaces where the draftstopping is being omitted.~~

~~**718.3.3 Other groups.** In other groups, draftstopping shall be installed so that horizontal floor areas do not exceed 1,000 square feet (93 m^2).~~

Exception: Draftstopping is not required in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

Revise as follows:

718.4 Draftstopping in attics. In combustible construction, draftstopping
Draftstopping shall be installed to subdivide *attic* spaces where required by Section 708.4.2. In other than Group R-1 and R-2 occupancies, draftstopping shall also be installed to subdivide combustible attic spaces and combustible concealed roof spaces in the locations prescribed in Sections 718.4.2 and 718.4.3such that any horizontal area does not exceed 3,000 square feet (279 m2). Ventilation of concealed roof spaces shall be maintained in accordance with Section 1203.2.

Exceptions. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

Delete without substitution:

718.4.2 Groups R-1 and R-2. Draftstopping shall be provided in *attics*, mansards, overhangs or other concealed roof spaces of Group R-2 buildings with three or more *dwellingunits* and in all Group R-1 buildings. Draftstopping shall be installed above, and in line with, *sleeping unit* and *dwellingunit* separation walls that do not extend to the underside of the roof sheathing above.

Exceptions:

1. Where *corridor* walls provide a *sleeping unit* or *dwellingunit* separation, draftstopping shall only be required above one of the *corridor* walls.
2. Draftstopping is not required in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
2. In occupancies in Group R-2 that do not exceed four *storiesabovegrade plane*, the *attic* space shall be subdivided by *draftstops* into areas not exceeding 3,000 square feet (279 m^2) or above every two *dwellingunits*, whichever is smaller.
3. Draftstopping is not required in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.2, provided that automatic sprinklers are installed in the combustible concealed space where the draftstopping is being omitted.

718.4.3 Other groups. Draftstopping shall be installed in *attics* and concealed roof spaces, such that any horizontal area does not exceed 3,000 square feet (279 m^2).

Exception: Draftstopping is not required in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

Reason: 708.1 Editorial correlation with 2015 IBC Section 420.1, which added the requirement for separation walls in R-4 occupancies to be fire partitions. It is understood that Section 310.6 requires Group R-4 to meet requirements of Group R-3 unless otherwise specified by the IBC (that's also the reason that Section 708.4.2, Exception 5 for Group R-3 has to exclude R-4 to keep the exception consistent with current requirements). However, changing 708.1 to include all Group R occupancies will eliminate the appearance that R-4 has been omitted from the requirements of this section, particularly considering that R-4 is specifically listed in Section 420.1, which triggers provisions in Section 708.1.
708.4 The proposed rewrite results from an initial intent of adding another exception to this section (which I've now done in a separate proposal). I hadn't read the text of this section in quite some time because I knew what it was supposed to say. However, when I actually read the text, I found it unintelligible. The base paragraph has several different things going on...basic continuity, draftstopping/fire-blocking above, and supporting construction requirements. Then the 6 exceptions that follow aren't clear with respect to which parts of the main paragraph they apply to. Making matters worse, there is overlap and conflict between 708.4 and 718.3.2 and 718.4.2. I decided to undertake rewriting all of the provisions in an attempt to fix these issues while maintaining the current technical requirements. Although there has been no deliberate intent to change how the code applies, there were cases where interpretations were necessary to clarify conflicting provisions.

Deciphering the apparent intent of the code, pulling the sections and exceptions into pieces and reassembling them into comprehensible requirements took many hours, and I invite all "code groupies" and industry experts to closely compare the current and proposed provisions and notify me if any unintentional technical changes have occurred.

718.3.2 and 718.4.2. The existing draftstopping thresholds in 718.3.2 and 718.4.2 are specific to certain occupancies. These conflict with the draftstopping requirements in Section 708.4.2, which relate to continuity of fire partitions (recognizing that all dwelling and sleeping unit separations are fire partitions, as required by Sections 420.1 and 420.2). Based on the "specific over general" rule in Section 102.1 and the fact that there would be no reason for the current code to include the thresholds in 718.3.2 and 718.4.2 if they weren't intended to override Section 708.4.2, the existing special thresholds in 718.3.2 and 718.4.2 were moved to Section 708.4 to eliminate the conflict and consolidate all of the draftstopping requirements for Group R in a single location.

The current text related to mansards and overhangs is irrelevant because the following sentence in the current Section 718.4.2 ties this text only to continuity of fire partitions that form separations for sleeping units and dwelling units. By referencing the revised 708.4 in this proposal, any space above a fire partition (mansard, overhang, or whatever) requires the same level of protection based on the "continuity of fire partitions" requirement.

One additional change that should be considered by the Code Development Committee, but was skipped in this proposal because it is a technical change, is extending the Group R exception in Section 718.4 of this proposal (for attics) to include all Group R occupancies, as is the case for floor assemblies under 718.3.2 of the 2015 IBC. There is no apparent reason for 718.3 and 718.4 to have handled Group R occupancies differently for floors vs. attic spaces, and it makes more sense for all Group R attics to follow Section 708.4.2. Without fixing this, R-3 and R-4 will continue to have conflicting requirements in 708.4.2 and 718.4.

Cost Impact: Will not increase the cost of construction
There will be no impact on the cost of construction other than the cost savings associated with countless hours of design time that was saved by people who no longer had to study these sections for hours to figure out what the actually required.

FS 42-15 : 708.1-SHAPIRO5284

FS 43-15

Part I:
708.6
Part II:
709.5, 716.6.7

THIS IS A 2 PART CODE CHANGE. BOTH PARTS WILL BE HEARD BY THE IBC-FIRE SAFETY COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THIS COMMITTEE.

Proponent: Robert Davidson, Davidson Code Concepts, LLC, representing SAFTI FIRST (rjd@davidsoncodeconcepts.com)

Part I

2015 International Building Code

Revise as follows:

708.6 Openings. Openings in a *fire partition* shall be protected in accordance with Section 716. The total area of the fire-protection-rated glazing in fire door side lights and transoms and in fire window assemblies shall not exceed 25 percent of the area of a common wall with any room.

Part II

2015 International Building Code

Revise as follows:

709.5 Openings. Openings in a *smoke barrier* shall be protected in accordance with Section 716. The total area of the fire-protection-rated glazing in fire door side lights and transoms and in fire window assemblies shall not exceed 25 percent of the area of a common wall with any room.

Exceptions:

1. In Group I-1 Condition 2, Group I-2 and ambulatory care facilities, where a pair of opposite-swinging doors are installed across a corridor in accordance with Section 709.5.1, the doors shall not be required to be protected in accordance with Section 716. The doors shall be close fitting within operational tolerances, and shall not have a center mullion or undercuts in excess of $^{3}/_{4}$ inch (19.1 mm), louvers or grilles. The doors shall have head and jamb stops, and astragals or rabbets at meeting edges. Where permitted by the door manufacturer's listing, positive-latching devices are not required.
2. In Group I-1 Condition 2, Group I-2 and *ambulatory care facilities*, horizontal sliding doors installed in accordance with Section 1010.1.4.3 and protected in accordance with Section 716.

716.6.7 Interior fire window assemblies. Fire-protection-rated glazing used in *fire window assemblies* located in *fire partitions, smoke barriers* and *fire barriers* shall be limited to use in assemblies with a maximum *fire-resistance rating* of 1 hour in accordance with this section.

Reason: The intent of this proposal is to address an anomaly in the current code language. For fire barriers there is a limitation on the total amount of openings permited of any type:

> "707.6 Openings. Openings in a fire barrier shall be protected in accordance with Section 716. Openings shall be limited to a maximum aggregate width of 25 percent of the length of the wall, and the maximum area of any single opening shall not exceed 156 square feet (15 m2). Openings in enclosures for exit access stairways and ramps, interior exit stairways and ramps and exit passageways shall also comply with Sections 1019, 1023.4 and 1024.5, respectively."

In addition to that restriction the code also limits fire-protection-rated glazing to 1 hour or less fire-resistance-rated assemblies. And the amount of fire-protection-rated fire windows in a wall section is further restricted:

> "716.6.7 Interior fire window assemblies. Fire-protection-rated glazing used in fire window assemblies located in fire partitions and fire barriers shall be limited to use in assemblies with a maximum fire-resistance rating of 1 hour in accordance with this section."
>
> > " 716.6.7.2 Area limitations. The total area of the glazing in fire-protection-rated window assemblies shall not exceed 25 percent of the area of a common wall with any room."

The combination of the overall opening limitation in Section 707.6 for fire barriers, and the fire window fire-protection-rated glazing protection requirements in Section 716.6.7 limit the total amount of fire-protection-rated glazing that can be utilized for the purpose of limiting the use of a product that allows radiant heat to go through the protected opening.

However, when you get to the Fire Partition portion of the code there is no overall limitation in openings. The fire-protected-rated fire windows still must comply with the limitations of Section 716.6.7 but what is lost is control of the amount of fire-protection-rated glazing used in fire door sidelights and transoms because there is no overall restriction on the amount of openings which would include the entire fire door assembly. This allows for additional fire-protection-rated glazing and radiant heat transfer beyond the amount restricted by Section 716.6.7.2 for fire windows.

The proposed language is intended to capture fire-protection-rated glazing in fire door sidelites and transoms for appllication of the restriction found at Section 716.6.7.2.

NFPA 80, "Standard for Fire Doors and Other Opening Protectives" includes background on radiant heat concerns in Annex I; the following is an extract of that information:

NFPA 80-2013

"I.1 Background. Fire windows were originally designed for protecting openings in exterior walls. In such applications, radiant heat transfer was not a significant consideration, since the main function of fire windows was to contain the flames within the building. However, where fire windows are used in interior partitions, users of this standard might need to consider radiant heat transfer during fire. Exiting through corridors and past fire windows could be compromised, and combustible materials on the unexposed side of fire windows could be ignited. The information that follows is a guide to the evaluation of radiant heat transfer through fire windows.

Recent revisions to this standard have permitted very large areas of fire protection–rated glazing materials to be used in interior partitions, limited only by the size of the test furnace. Also, recent technological advances in the glazing industry have compounded the problem of radiant heat transfer by making it possible to provide glazing materials with fire protection ratings of 60 minutes and 90 minutes. Historically, fire windows, including glass block, have been limited to a 45-minute rating by the standard fire test, NFPA257, Standard on Fire Test for Window and Glass Block Assemblies. This time limit was predicated on the failure of wired glass at approximately 1600°F (870°C). [1] Some manufacturers also have developed fire resistance–rated glazing assemblies that meet the requirements of a fire resistance–rated wall assembly (currently up to 2 hours). These glazing materials, however, do not transmit excessive radiant heat, since they are re-quired to limit the temperature rise on the unexposed face to 250°F (121°C). "

Cost Impact:

Part I: Will increase the cost of construction
This proposal could create a minimal increase in the cost of construction by limiting the amount of fire-protection rated glazing in a given common wall in a room.

Part II: Will increase the cost of construction
This proposal could create a minimal increase in the cost of construction by limiting the amount of fire-protection rated glazing in a given common wall in a room.

FS 43-15 : 708.6-DAVIDSON5293

FS 44-15

709.5

Proponent: John Williams, CBO, CBO, Chair, Adhoc Healthcare Committee, representing Adhoc Health Care Committee (AHC@iccsafe.org); Carl Baldassarra, P.E., FSFPE, Chair, Code Technology Committee, representing Code Technology Committee (CTC@iccsafe.org)

2015 International Building Code

Revise as follows:

709.5 Openings. Openings in a *smoke barrier* shall be protected in accordance with Section 716.

Exceptions:

1. In Group I-1 Condition 2, Group I-2 and ambulatory care facilities, where a pair of opposite-swinging doors are installed across a corridor in accordance with Section 709.5.1, the doors shall not be required to be protected in accordance with Section 716. The doors shall be close fitting within operational tolerances, and shall not have a center mullion or undercuts in excess of $^{3}/_{4}$ inch (19.1 mm), louvers or grilles. The doors shall have head and jamb stops, and astragals or rabbets at meeting edges. Where permitted by the door manufacturer's listing, positive-latching devices are not required. Factory applied or field applied protective plates are not required to be labeled.
2. In Group I-1 Condition 2, Group I-2 and *ambulatory care facilities*, horizontal sliding doors installed in accordance with Section 1010.1.4.3 and protected in accordance with Section 716.

Reason:
Smoke barrier doors are typically installed across corridors and patient treatment areas. These doors see a very high volume of gurney and bed traffic, as well as carts, wheeled equipment and transport devices. As a result they are often damaged. This proposal would allow the installation of a non-labeled protective plate, usually made of steel or other resilient material, to be installed on these doors to protect them from excessive wear and damage. Due to the size of equipment being wheeled through, these protective plates need to be allowed to be greater than 48" high. Currently NFPA 80 would require that the protective plates on rated doors be limited to 48" and that they be labeled. The doors in smoke barriers do not function as true fire doors. This section contains many special directives and requirements exempting smoke barriers doors from meeting fire door requirements. This code change follows with the established intent of this section. Smoke barriers are intended to be substantial construction and providing protective plates provides additional protection to the doors keeping the original construction free from damage thus in a more substantial manner. They do not provide the same fire resistance rating as a true 1 hour fire barrier.

A correlative change is planned for the IFC Section 1105.6.3 as part of the Group B proposals.

The ICC Ad Hoc Committee on Healthcare (AHC) has just completed its 4th year. The AHC was established by the ICC Board to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. This is a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Information on the AHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the AHC effort can be downloaded from the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx.

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

Cost Impact: Will not increase the cost of construction
Allowing the use of non-labled plates will be less costly than requiring labeled plates.

FS 45-15

709.5, 709.5.1

Proponent: John Woestman, Kellen Company, representing Builders Hardware Manufacturers Association (BHMA) (jwoestman@kellencompany.com)

2015 International Building Code

Revise as follows:

709.5 Openings. Openings in a *smoke barrier* shall be protected in accordance with Section 716.

Exceptions:

1. In Group I-1 Condition 2, Group I-2 and ambulatory care facilities, where a pair of opposite-swinging doors are installed across a corridor in accordance with Section 709.5.1, the doors shall ~~not~~ be required to be protected in accordance with Section 716. The doors shall be close fitting within operational tolerances, and shall not have a center mullion or undercuts in excess of $^{3}/_{4}$ inch (19.1 mm), louvers or grilles. The doors shall have head and jamb stops, and astragals or rabbets at meeting edges. Where permitted by the door manufacturer's listing, positive-latching devices are not required.
2. In Group I-1 Condition 2, Group I-2 and *ambulatory care facilities*, horizontal sliding doors installed in accordance with Section 1010.1.4.3 and protected in accordance with Section 716.

709.5.1 Group I-2 and ambulatory care facilities. In Group I-2 and ambulatory care facilities, where doors are installed across a corridor, the doors shall be automatic-closing by smoke detection in accordance with Section 716.5.9.3 and shall have a vision panel with fire-protection-rated glazing materials in fire-protection-rated frames, the area of which shall not exceed that tested in accordance with the testing requirements of Section 716 for fire-protection-rated glazing.

Reason: Exception 1 is the only application in the code where non-fire-rated and non-smoke-rated doors are allowed to "protect" openings in required smoke barriers. Elsewhere in the code, openings in smoke barriers are required to be protected with opening protectives which comply with Section 716. The occupancies and uses of Exception 1 (other than I-1) are also the only occupancies and uses identified in the code where required fire response plans may allow a defend-in-place strategy. From an objective perspective, openings in the required smoke barriers in an occupancy which may have defend-in-place fire safety procedures should be held to no less of a performance standard than required for other occupancies. Also missing in the application of Exception 1, by allowing non-fire-rated doors and non-smoke-rated doors, is the code requirement these doors be installed in accordance with NFPA 80 for fire doors, or NFPA 105 for smoke doors; and the ongoing IFC requirement these doors be maintained in accordance with NFPA 80 and / or NFPA 105. This code proposal proposes to address this discrepancy by deleting "not" from Exception 1.
In 709.5.1, the phrase "the area of which shall not exceed that tested" raises the question of "Tested to what performance requirement(s)?" This proposal attempts to answer that question.

Cost Impact: Will increase the cost of construction
Installing opening protectives (door assemblies) which comply with the requirements of IBC Section 716 Opening Protectives cost more than installing doors which do not.

FS 46-15

712.1.10.1

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

2015 International Building Code

Revise as follows:

712.1.10.1 Automobile ramps. Vertical openings for automobile ramps in ~~open and enclosed~~ parking garages shall be permitted where constructed in accordance with Sections 406.5 and 406.6~~, respectively~~.

Reason: The current language in the code is redundant and confusing. The new language allows openings that may be used for other purposes including occupant mobility.

Cost Impact: Will not increase the cost of construction
This change should reduce the cost of construction as it will clarify how openings are permitted in floors of parking garages.

FS 46-15 : 712.1.10.1-COLLINS4479

FS 47-15

713.2, Chapter 35

Proponent: Rebecca Baker, representing Colorado Association of Plumbing and Mechanical Officials (CAPMO) (bbaker@co.jefferson.co.us)

2015 International Building Code

Revise as follows:

713.2 Construction. Shaft enclosures shall be constructed as *fire barriers* in accordance with Section 707 or horizontal assemblies in accordance with Section 711, or both.

Exception: Shaft construction shall not be required for exhaust ducts where a listed and labeled field applied duct enclosure material or system specifically evaluated for such purpose in accordance with ASTM E 2336 is installed on exhaust ducts complying with the following:

1. A single or manifolded duct shall originate on the same floor, space or fire area.
2. The duct shall terminate to the outdoors from the space of origin.
3. The field applied enclosure shall serve a single duct with a minimum one-hour fire resistance rating and shall be equal to the fire resistance rating of the construction penetrated.
4. Fire dampers, smoke dampers or combination fire/smoke dampers shall not be installed in the duct.
5. Duct passing through four or more stores shall have a two-hour fire resistance rating.
6. Exposed enclosure systems shall be protected from damage.
7. Field applied duct enclosure systems installed on grease ducts shall be in accordance with the *International Mechanical Code.*
8. Enclosure systems shall be installed in accordance with the manufacturers installation instructions.

Add new standard(s) as follows:

ASTM E2336-04(2013) Standard Test Methods for Fire Resistive Grease Duct Enclosure System

Reason: It's time to recognize that this tested and listed method of replacing a shaft with a field applied duct wrap system is overdue. Just like the design for grease duct enclosure systems, other exhause ducts like hazardous or that from a Type II kitchen can benefit from this option. The enclosure system already carries a one and two hour fire resistance rating. This option can provide significant savings in cost and labor and has been proven to provide an equivalent measure of safety as that of a shaft. This does not apply to supply ducts as an entire supply system has not been tested to the fullest extent possible. This proposal only applies to exhause ducts.

Cost Impact: Will not increase the cost of construction
This proposal increases design flexibility and allows the owner/applicant to choose the method of complaince based which works best and is most economical for the situation.

Analysis: The referenced standard, ASTM E2336, is currently referenced in the International Mechanical Code.

FS 48-15

713.2, Chapter 35

Proponent: Janine Snyder, City of Thornton, representing Colorado Association of Plumbing & Mechanical Officials (CAPMO) (Janine.Snyder@cityofthornton.net)

2015 International Building Code

Revise as follows:

713.2 Construction. Shaft enclosures shall be constructed as *fire barriers* in accordance with Section 707 or horizontal assemblies in accordance with Section 711, or both.

Exception: Shaft construction shall not be required for exhaust ducts where a listed and labeled field applied duct enclosure material or system specifically evaluated for such purpose in accordance with ASTM E 2336 is installed on exhaust dusts complying with the following.

1. A single or manifolded duct shall originate on the same floor, space or fire area.
2. The duct shall terminate to the outdoors from the space of origin.
3. There shall be no interconnecting ducts beyond the space of origin.
4. The field applied enclosure shall serve a single duct with a minimum one hour fire resistance rating and shall be equal to the fire resistance rating of the construction penetrated.
5. Fire dampers, smoke dampers or combination fire/smoke dampers shall not be installed in the duct.
6. Duct passing through four or more stories shall have a two hour fire resistance rating.
7. Exposed enclosure systems shall be protected from damage.
8. Field applied duct enclosure system installed on grease ducts shall be in accordance with the International Mechanical Code.
9. Enclosure systems shall be installed in accordance with the manufacturers installation instructions.

Add new standard(s) as follows:

ASTM E2336-04 (2013) Standard Test Methods for Fire Resistive Grease Duct Enclosure System.

Reason: Its time to recognize that this tested and listed method of replacing a shaft with a field applied duct wrap system is overdue. Just like the design for grease duct enclosures systems, other exhaust ducts like hazardous or that from a Type II kitchen can benefit from this option. The enclosure system already carries a one and two hour fire resistance rating. This option can provide significant savings in cost and labor and has been provide to provide an equivalent measure of safety as that of a shaft. This does not apply to supply ducts as an entire supply system has not been tested to the fullest extent possible. This proposal only applies to exhaust ducts.

Cost Impact: Will not increase the cost of construction

This will not increase the cost of construction as technology has caught up with the codes and expensive shaft construction will not be necessary with these provisions.

Analysis: The referenced standard, ASTM E2336, is currently referenced in the International Mechanical Code.

FS 48-15 : 713.2-SNYDER4452

FS 49-15

713.8.2 (New)

Proponent: Matthew Davy, representing Arup (matt.davy@arup.com)

2015 International Building Code

713.8 Penetrations. Penetrations in a shaft enclosure shall be protected in accordance with Section 714 as required for *fire barriers*. Structural elements, such as beams or joists, where protected in accordance with Section 714 shall be permitted to penetrate a shaft enclosure.

713.8.1 Prohibited penetrations. Penetrations other than those necessary for the purpose of the shaft shall not be permitted in shaft enclosures.

Add new text as follows:

713.8.2 Membrane penetrations Membrane penetrations shall be permitted on the outside of shaft enclosures. Such penetrations shall be protected in accordance with Section 714.3.2.

Reason: The purpose of Section 713.8 and 713.8.1 is to limit through penetrations into a shaft enclosure; however, membrane penetrations should be permitted on the outside of the shaft enclosure. As currently written, an electrical box is not permitted on the outside of the shaft enclosure. This section needs to clarify the intent of Section 713.8.

Cost Impact: Will not increase the cost of construction
The code change proposal will not increase the cost of construction since it will allow membrane penetrations in shaft enclosures without the need for additional construction/material on the outside of the shaft enclosure. Also, it increases net area for the building.

FS 50-15

713.13

Proponent: Ali Fattah, City of San Diego Development Services, representing SD Area Chapter ICC

2015 International Building Code

Revise as follows:

713.13 Waste and linen chutes and incinerator rooms. Waste and linen chutes shall comply with the provisions of NFPA 82, Chapter ~~5~~6 and shall meet the requirements of Sections 713.13.1 through 713.13.6. Incinerator rooms shall meet the provisions of Sections 713.13.4 through 713.13.5.

Exception: Chutes serving and contained within a single dwelling unit.

Reason: The code section as published is in error. Chapter 5 of NFPA 82 includes requirements for incinerators however Ch 6 includes requirement for waste and linen chutes. Section 713.13.5 appropriately references a section in Ch 5 of NFPA 82 for incinerator rooms. This corrected reference will result in correct code application.

Bibliography: 2014 edition of NFPA 82 "STANDARD ON INCINERATORS AND WASTE AND LINEN HANDLING SYSTEMS AND EQUIPMENT"

Cost Impact: Will not increase the cost of construction
No cost impact editorial code change.

FS 50-15 : 713.13-FATTAH3824

FS 51-15

713.13, 713.14, 3002.1

Proponent: Lee Kranz, City of Bellevue, WA, representing Lee Kranz

2015 International Building Code

Revise as follows:

713.13 Waste and linen chutes and incinerator rooms. Waste and linen chutes shall comply with the provisions of NFPA 82, Chapter 5 and shall meet the requirements of Sections 712 and 713.13.1 through 713.13.6. Incinerator rooms shall meet the provisions of Sections 713.13.4 through 713.13.5.

Exception: Chutes serving and contained within a single dwelling unit.

713.14 Elevator, dumbwaiter and other hoistways. Elevator, dumbwaiter and other hoistway enclosures shall be constructed in accordance with ~~Section~~Sections 712, 713 and Chapter 30.

3002.1 Hoistway enclosure protection. Elevator, dumbwaiter and other hoistway enclosures shall be *shaft enclosures* complying with ~~Section~~Sections 712 and 713.

Reason: The proposed references in Sections 713.13, 713.14 and 3002.1 to Section 712 are necessary to permit the use of the exceptions contained in Section 712 for shaft construction. By referencing only Section 713 from these sections it could be misunderstood that the exceptions of Section 712 are not applicable for waste and linen chutes and incinerator rooms of Section 713.13, for elevator, dumbwaiter and other hoistways of Section 713.14, or for hoistway enclosures of Section 3002.1. Section 712 is where the exceptions for shaft enclosures were relocated in the 2012 IBC and the reference to that section from Sections 713.13, 713.14 and 3002.1 were overlooked for the 2015 code.

Cost Impact: Will not increase the cost of construction
This change will have no bearing on the cost of construction for shafts because it permits the use of the exceptions contained in Section 712.

FS 51-15 : 713.13-KRANZ5122

FS 52-15

713.13.1

Proponent: Masoud Sabounchi, Representing Colorado Chapter of ICC, representing masoud sabounchi (masoud@acecode.com)

2015 International Building Code

Revise as follows:

713.13.1 Waste and linen. A shaft enclosure containing a recycling, or waste or linen chute shall not be used for any other purpose and shall be enclosed in accordance with Section 713.4. A shaft enclosure shall be permitted to contain recycling and waste chutes. Openings into the shaft, from access rooms and discharge rooms, shall be protected in accordance with this section and Section 716. Openings into chutes shall not be located in *corridors*. Doors into chutes shall be self-closing. Discharge doors shall be self- or automatic-closing upon the actuation of a smoke detector in accordance with Section 716.5.9.3, except that heat-activated closing devices shall be permitted between the shaft and the discharge room.

Reason: Section 713.13.1 implies that a recycling chute is not permitted to be located in the same shaft with a waste chute. Hazard associated with a recycling chute is not any different than that of a waste chute. To provide two side by side shaft enclosures to enclose the recycling and the waste chute does not provide additional safety especially since chutes have specific installation requirements, sprinkler protection, ventilation and similar.

Cost Impact: Will not increase the cost of construction
This proposal does not increase the cost of construction because the proposed revision allows one shaft to contain a recycling and a waste chute where two separate shaft enclosures might be required otherwise. This proposal reduces cost of construction.

FS 52-15 : 713.13.1-SABOUNCHI4392

FS 53-15

713.13.3

Proponent: Stephen DiGiovanni, Clark County Building Department, representing Southern Nevada Chapter of ICC (sdigiovanni@clarkcountynv.gov)

2015 International Building Code

Revise as follows:

713.13.3 Chute access rooms. Access openings for waste or linen chutes shall be located in rooms or compartments enclosed by not less than 1-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. Openings into the access rooms shall be protected by opening protectives having a *fire protection rating* of not less than $^{3}/_{4}$ hour. Doors shall be self- or automatic-closing upon the detection of smoke in accordance with Section 716.5.9.3. The room or compartment shall be configured to allow the access door to the room or compartment to close and latch with the access panel to the refuse or laundry chute in any position.

Reason: The proposed would ensure the intent of the code that the room and door provide a minimum level of protection to the shaft enclosing the chute and the chute access doors. This intended protection is made clear in Section 713.13.1. If the room design does not allow the door to close upon failure of the self-closing requirement of the chute access door the intent of the section is defeated. This proposal brings clarity to the implied intent of the code.

Cost Impact: Will increase the cost of construction
This proposal will increase construction costs by requiring that chute access rooms be configured to address an added performance feature contained within this proposal.

FS 54-15

714.2 (New), Chapter 35

Proponent: William Koffel, representing Firestop Contractors International Association (wkoffel@koffel.com)

2015 International Building Code

Add new text as follows:

714.2 Contractor Qualifications In buildings of Group I-2 occupancy, listed through-penetration firestop systems shall be installed by contractors certified by an organization accredited to the criteria set forth ISO 17065 by a recognized accreditation body complying to ISO 17011. Documentation shall be submitted to the code official verifying certification of the contractor.

Exception: Repairs, Level 1 Alterations, and Level 2 Alterations as defined in the International Existing Building Code.

Add new standard(s) as follows:

ISO 17011-15 - Conformity assessment — General requirements for accreditation bodies accrediting conformity assessment bodies

ISO 17065-15 - Conformity assessment — Requirements for bodies certifying products, processes and services

Reason: The proposed language addresses the issues and concerns expressed in the past by the Code Development Committee

1. Availability of contractors - The application of the section has been restricted to buildings of Group I-2. Such construction projects, especially Level 3 Alternations and new construction generally attract regional general contractors and therefore firestop contractors will also be attracted from a regional basis. Presently there are contractors in every state. It is also anticipated that additional contractors will seek the necessary qualification between the time when the proposal is approved and the code is adopted and enforced.

2. References to specific qualification programs - The proposed language eliminates the references to the existing UL and FM programs and instead provides the criteria for the certification process and certifying organization. This approach is similar to what is being proposed for ICC 1000 and the text is similar to a definition being developed by the IAS for a certification agency.

3. Small projects - By exempting Repairs, Level 1 Alterations, and Level 2 Alterations, smaller construction projects will not required outside specialty contractors.

Proper design, selection, installation, and inspection of through penetration firestop systems are critical to maintaining the integrity of the fire resistance rated assembly that is being penetrated. There are existing approval or qualification programs administered by FM Approvals and UL for contractors who install materials that become firestop systems. Contracting firms are eligible to obtain the FM Approval and/or UL Qualification. The costs range from $6,000 to $10,000 for the initial audit and about $3,000 annually for ongoing audits. Currently, companies of all sizes are FM 4991 Approved or UL Qualified in areas where the I-Codes are adopted.

Cost Impact: Will increase the cost of construction

While the cost of construction may increase for certain projects, there will also be substantial cost savings on other projects in which substantial remediation activities have been necessary to correct improper or deficient installations. Most owners will be getting the job done correctly at a lower cost by eliminating the need for corrective actions immediately after the construction is completed.

Analysis: A review of the standard proposed for inclusion in the code, ISO 17011 and ISO 17065, 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, 2015.

FS 55-15

714.2 (New)

Proponent: William Koffel, representing Firestop Contractors International Association (wkoffel@koffel.com)

2015 International Building Code

Add new text as follows:

714.2 Installation A listed through-penetration firestop system shall be securely installed in accordance with the manufacturer's installation instructions and the listing criteria.

Reason: The intent of the paragraph is to require that all listed systems be installed in accordance with the listing critieria (including manufacturer's instructions). The manufacturer's instructions provide additional details that are not commonly identified in the listing criteria, including environmental conditions and tooling.

Cost Impact: Will not increase the cost of construction
Listed systems should already be installed in accordance with the manufacturer's installation instructions.

FS 55-15 : 714.2 (New)-KOFFEL5417

FS 56-15

714.3.1.1, 714.4.1.1

Proponent: Jonathan Roberts, UL LLC, representing UL LLC (jonathan.roberts@ul.com)

2015 International Building Code

Revise as follows:

714.3.1.1 Fire-resistance-rated assemblies. ~~Penetrations~~
Through penetrations shall be protected using materials installed as tested in ~~an~~ the *approved* fire-resistance-rated assembly.

714.4.1.1 ~~Installation~~Fire-resistance-rated assemblies. *Through penetrations* shall be protected using materials installed as tested in the *approved* fire-resistance-rated assembly.

Reason: As written, these two similar sections, covering wall assemblies and horizontal assemblies, state penetrations shall be installed as tested in the approved fire-resistance-rated assembly. By definition, a penetration is a breach in the floor, floor-ceiling or wall assembly. This proposal clarifies that it is the method of protecting the penetration, not the penetration itself, that is the subject of these sections. It also revises the title of Section 714.4.1.1 to be consistent with that of Section 714.3.1.1.

Cost Impact: Will not increase the cost of construction
This simply clarifies the existing requirements.

FS 57-15

714.3.2, 714.4.2, 717.6.1 (IMC 607.6.1)

Proponent: James Smith, ICC Region III Code Development Committee, representing ICC Region III Code Development Committee

2015 International Building Code

Revise as follows:

714.3.2 Membrane penetrations. Membrane penetrations shall comply with Section 714.3.1. Where walls or partitions are required to have a *fire-resistance rating*, recessed fixtures shall be installed such that the required fire resistance will not be reduced.

Exceptions:

1. Membrane penetrations of maximum 2-hour fire-resistance-rated walls and partitions by steel electrical boxes that do not exceed 16 square inches (0.0 103 m^2) in area, provided the aggregate area of the openings through the membrane, including those listed in exception 6, does not exceed 100 square inches (0.0645 m^2) in any 100 square feet (9.29 m^2) of wall area. The *annular space* between the wall membrane and the box shall not exceed $^1/_8$ inch (3.2 mm). Such boxes on opposite sides of the wall or partition shall be separated by one of the following:
    1.1. By a horizontal distance of not less than 24 inches (610 mm) where the wall or partition is constructed with individual noncommunicating stud cavities;
    1.2. By a horizontal distance of not less than the depth of the wall cavity where the wall cavity is filled with cellulose loose-fill, rockwool or slag mineral wool insulation;
    1.3. By solid fireblocking in accordance with Section 718.2.1;
    1.4. By protecting both outlet boxes with *listed* putty pads; or
    1.5. By other *listed* materials and methods.
2. Membrane penetrations by *listed* electrical boxes of any material, provided such boxes have been tested for use in fire-resistance-rated assemblies and are installed in accordance with the instructions included in the listing. The *annular space* between the wall membrane and the box shall not exceed $^1/_8$ inch (3.2 mm) unless *listed* otherwise. Such boxes on opposite sides of the wall or partition shall be separated by one of the following:
    2.1. By the horizontal distance specified in the listing of the electrical boxes;
    2.2. By solid fireblocking in accordance with Section 718.2.1;
    2.3. By protecting both boxes with *listed* putty pads; or
    2.4. By other *listed* materials and methods.
3. Membrane penetrations by electrical boxes of any size or type, that have been *listed* as part of a wall opening protective material system for use in fire-resistance-rated assemblies and are installed in accordance with the instructions included in the listing.
4. Membrane penetrations by boxes other than electrical boxes, provided such penetrating items and the *annular space* between the wall membrane and the box, are protected by an *approved membrane penetration* firestop system installed as tested in accordance with ASTM E 814 or UL 1479, with a minimum positive pressure differential of 0.01 inch (2.49 Pa) of water, and shall have an F and T rating of not less than the required *fire-resistance rating* of the wall penetrated and be installed in accordance with their listing.
5. The *annular space* created by the penetration of an automatic sprinkler, provided it is covered by a metal escutcheon plate.
6. Membrane penetrations of maximum 2-hour fire resistance-rated walls and partitions by steel electrical boxes that exceed 16 square inches (0.0 103 m^2) in area, or steel electrical boxes of any size having an aggregate area through the membrane, including those listed in exception 1, exceeding 100 square inches (0.0645 m^2) in any 100 square feet (9.29 m^2) of wall area, provided such penetrating items are protected by listed putty pads or other listed materials and methods, and installed in accordance with the listing.

714.4.2 Membrane penetrations. Penetrations of membranes that are part of a *horizontal assembly* shall comply with Section 714.4.1.1 or 714.4.1.2. Where floor/ceiling assemblies are required to have a *fire-resistance rating*, recessed fixtures shall be installed such that the required *fire resistance* will not be reduced.

Exceptions:

1. *Membrane penetrations* by steel, ferrous or copper conduits, pipes, tubes or vents, or concrete or masonry items where the *annular space* is protected either in accordance with Section 714.4.1 or to prevent the free passage of flame and the products of combustion. The aggregate area of the openings through the membrane, including those listed in exception 2, and the exception to section 717.6.1 shall not exceed 100 square inches (64 500 mm^2) in any 100 square feet (9.3 m^2) of ceiling area in assemblies tested without penetrations.
2. Ceiling *membrane penetrations* of maximum 2-hour *horizontal assemblies* by steel electrical boxes that do not exceed 16 square inches (10 323 mm^2) in area, provided the aggregate area of such penetrations, including those listed in exception 1, and the exception to section 717.6.1, does not exceed 100 square inches (44 500 mm^2) in any 100 square feet (9.29 m^2) of ceiling area, and the *annular space* between the ceiling membrane and the box does not exceed $^1/_8$ inch (3.2 mm).
3. *Membrane penetrations* by electrical boxes of any size or type, that have been *listed* as part of an opening protective material system for use in *horizontal assemblies* and are installed in accordance with the instructions included in the listing.
4. *Membrane penetrations* by *listed* electrical boxes of any material, provided such boxes have been tested for use in fire-resistance-rated assemblies and are installed in accordance with the instructions included in the listing. The *annular space* between the ceiling membrane and the box shall not exceed $^1/_8$ inch (3.2 mm) unless *listed* otherwise.
5. The *annular space* created by the penetration of a fire sprinkler, provided it is covered by a metal escutcheon plate.
6. Noncombustible items that are cast into concrete building elements and that do not penetrate both top and bottom surfaces of the element.
7. The ceiling membrane of 1- and 2-hour fire-resistance-rated horizontal assemblies is permitted to be interrupted with the double wood top plate of a wall assembly that is sheathed with Type X gypsum wallboard, provided that all penetrating items through the double top plates are protected in accordance with Section 714.4.1.1 or 714.4.1.2 and the ceiling membrane is tight to the top plates.

717.6.1 Through penetrations. In occupancies other than Groups I-2 and I-3, a duct constructed of *approved* materials in accordance with the *International Mechanical Code* that penetrates a fire-resistance-rated floor/ceiling assembly that connects not more than two *stories* is permitted without shaft enclosure protection, provided a *listed fire damper* is installed at the floor line or the duct is protected in accordance with Section 714.4. For air transfer openings, see Section 712.1.9.

Exception: A duct is permitted to penetrate three floors or less without a *fire damper* at each floor, provided such duct meets all of the following requirements:

1. The duct shall be contained and located within the cavity of a wall and shall be constructed of steel having a minimum wall thickness of 0.0187 inches (0.4712 mm) (No. 26 gage).
2. The duct shall open into only one *dwelling or sleeping unit* and the duct system shall be continuous from the unit to the exterior of the building.
3. The duct shall not exceed 4-inch (102 mm) nominal diameter and the ~~total~~ aggregate area of such ducts and other penetrating elements, including those listed in exceptions 1 and 2 of section 714.4.2, shall not exceed 100 square inches (0.065 m^2) in any 100 square feet (9.3 m^2) of floor area.
4. The *annular space* around the duct is protected with materials that prevent the passage of flame and hot gases sufficient to ignite cotton waste where subjected to ASTM E 119 or UL 263 time-temperature conditions under a minimum positive pressure differential of 0.01 inch (2.49 Pa) of water at the location of the penetration for the time period equivalent to the *fire-resistance rating* of the construction penetrated.
5. Grille openings located in a ceiling of a fire-resistance-rated floor/ceiling or roof/ceiling assembly shall be protected with a *listedceiling radiation damper* installed in accordance with Section 717.6.2.1.

Reason: There are three areas of the code that include exceptions to the requirements for the use of tested and listed firestop assemblies that are based on "total" and "aggregate" area of the penetration. Only one out of the three used the word "total" and we felt it best to be consistent and use the word "aggregate" instead of "total" in section 717.6.1 as well.

In addition, we felt the intent of these exceptions was to acknowledge that as long as there were limited penetrations (only 100 square inches in 100 square feet of surface area) of noncombustible elements there was not a need to protect them with firestop systems. We also felt there was not an intent to allow 300 square inches in 100 square feet of surface area. For that reason we referenced each of these exceptions to one another to assure the aggregate area included each of those being addressed individually. Without the cross references we feel it could be interpreted that in any given 100 square foot surface area of a horizontal assembly one could have 100 square inches of steel pipe/conduit (section 714.4.2 exception 1) + 100 square inches of steel electrical boxes (section 714.4.2 exception 2) + 100 square inches of ductwork (section 717.6.1) for a total 300 square inches of elements penetrating the membrane that provides the fire resistance integrity of the horizontal assembly. We believe the intent is to keep the integrity of the surface limited to that 100 square inches per 100 square feet in area.

We also felt it was appropriate to refer to each of the other similar exceptions for the sake of clarity and consistency. For instance we reference back and forth within each of the exceptions that refer to the penetration of walls. We use the same methodology for horizontal assemblies by refering back and forth to the similar provisions that are found in each section of the code that touches on items that penetrate horizontal assemblies. By doing so we feel both the designers and code oficials will be on the same page when applying and interpreting these code sections.

Cost Impact: Will increase the cost of construction

Although we must state that this change would have the potential to increase the cost of contruction, we also feel the number of instances when this would happen would be extremely limited. We feel that in most cases the designers and contrators will coordinate placement of penetrating items in such a manner that they will be dispersed in a way to stay below the 100 square inch per 100 square feet of surface area trigger. Accordingly, because it will only be in those rare instances where that cannot be accomplished, the cost will be minimal when compared to the overall cost of construction. We also believe many contractors already coordinate in this manner so as to minimize the probability of being surprised by the field interpretation of an inspector.

FS 57-15 : 714.3.2-SMITH4042

FS 58-15

714.3.2

Proponent: Tony Crimi, representing International Firestop Council (tcrimi@sympatico.ca)

2015 International Building Code

Revise as follows:

714.3.2 Membrane penetrations. Membrane penetrations shall comply with Section 714.3.1. Where walls or partitions are required to have a *fire-resistance rating*, recessed fixtures shall be installed such that the required fire resistance will not be reduced.

Exceptions:

1. Membrane penetrations of maximum 2-hour fire-resistance-rated walls and partitions by steel electrical boxes that do not exceed 16 square inches (0.0 103 m^2) in area, provided the aggregate area of the openings through the membrane does not exceed 100 square inches (0.0645 m^2) in any 100 square feet (9.29 m^2) of wall area. The *annular space* between the wall membrane and the box shall not exceed $^1/_8$ inch (3.2 mm). Such boxes on opposite sides of the wood or steel stud wall or partition shall be separated by one of the following:
    1.1. By a horizontal distance of not less than 24 inches (610 mm) where the wall or partition is constructed with individual ~~noncommunicating~~non-staggered stud cavities;
    1.2. By a horizontal distance of not less than the depth of the wall cavity where the wall cavity is filled with cellulose loose-fill, rockwool or slag mineral wool insulation;
    1.3. By solid fireblocking in accordance with Section 718.2.1;
    1.4. By protecting both outlet boxes with *listed* putty pads; or
    1.5. By other *listed* materials and methods.
2. Membrane penetrations by *listed* electrical boxes of any material, provided such boxes have been tested for use in fire-resistance-rated assemblies and are installed in accordance with the instructions included in the listing. The *annular space* between the wall membrane and the box shall not exceed $^1/_8$ inch (3.2 mm) unless *listed* otherwise. Such boxes on opposite sides of the wall or partition shall be separated by one of the following:
    2.1. By the horizontal distance specified in the listing of the electrical boxes;
    2.2. By solid fireblocking in accordance with Section 718.2.1;
    2.3. By protecting both boxes with *listed* putty pads; or
    2.4. By other *listed* materials and methods.
3. Membrane penetrations by electrical boxes of any size or type, that have been *listed* as part of a wall opening protective material system for use in fire-resistance-rated assemblies and are installed in accordance with the instructions included in the listing.
4. Membrane penetrations by boxes other than electrical boxes, provided such penetrating items and the *annular space* between the wall membrane and the box, are protected by an *approved membrane penetration* firestop system installed as tested in accordance with ASTM E 814 or UL 1479, with a minimum positive pressure differential of 0.01 inch (2.49 Pa) of water, and shall have an F and T rating of not less than the required *fire-resistance rating* of the wall penetrated and be installed in accordance with their listing.
5. The *annular space* created by the penetration of an automatic sprinkler, provided it is covered by a metal escutcheon plate.
6. Membrane penetrations of maximum 2-hour fire resistance-rated walls and partitions by steel electrical boxes that exceed 16 square inches (0.0 103 m^2) in area, or steel electrical boxes of any size having an aggregate area through the membrane exceeding 100 square inches (0.0645 m^2) in any 100 square feet (9.29 m^2) of wall area, provided such penetrating items are protected by listed putty pads or other listed materials and methods, and installed in accordance with the listing.

Reason: This Code proposal is intended to clearly articulate the application of this section. First, it clarifies that the requirements apply to both steel and wood stud walls. Second, it attempts to better express what is meant by "noncommunicating stud cavities".

The use of both wood and steel studs is common in fire resistance rated assemblies. The provision for separation of non-communicating stud cavities should recognise and include steel studs as well as wood studs. The term "noncommunicating" is problematic in that it is not a common construction term. Similarly, Merriam-Webster does not have a clear definition for the term The closest approximation is in their Medical Dictionary, which states:

> Communicating: to cause to pass from one to another(e.g. some diseases are easily communicated)

What was intended with this proposal was to address walls or partitions which did not use staggered studs. As written, steel studs are often interpreted as never creating non-communicating stud cavities because of the cut-outs. This unfairly penalizes steel stud assemblies. Because the existing language for membrane penetration protection does not explicitly exclude staggered studs walls, there are many questions as to which of these same

methods can be applied in these assemblies. This proposed language will clarify the application.

Cost Impact: Will not increase the cost of construction
The proposal may reduce the cost of construction by providing additional exceptions. The additional clarity will reduce inspection time and cost.

FS 58-15 : 714.3.2-CRIMI4306

FS 59-15

714.3.3, 714.4.3

Proponent: Gregory Keeler, representing Self (design_tech@windstream.net)

2015 International Building Code

Revise as follows:

714.3.3 Dissimilar materials. Noncombustible penetrating items shall not connect to combustible items beyond the point of ~~firestopping~~fireblocking unless it can be demonstrated that the fire-resistance integrity of the wall is maintained.

714.4.3 Dissimilar materials. Noncombustible penetrating items shall not connect to combustible materials beyond the point of ~~firestopping~~fireblocking unless it can be demonstrated that the fire-resistance integrity of the *horizontal assembly* is maintained.

Reason: This proposal is editorial in nature in that all other uses of the word "firestopping" have been removed from the code. The term "firestopping" is also not defined in Chapter 2. This revision will make Section 714 more consistent.

Cost Impact: Will not increase the cost of construction
THis proposal is editorial in nature and will not increase the cost of construction.

FS 60-15

714.4.1

Proponent: William Koffel, representing Firestop Contractors International Association (wkoffel@koffel.com)

2015 International Building Code

Revise as follows:

714.4.1 Through penetrations. Through penetrations of *horizontal assemblies* shall comply with Section 714.4.1.1 or 714.4.1.2.

Exceptions:

1. Penetrations by steel, ferrous or copper conduits, pipes, tubes or vents or concrete or masonry items through a single fire-resistance-rated floor assembly where the *annular space* is protected with materials that prevent the passage of flame and hot gases sufficient to ignite cotton waste when subjected to ASTM E 119 or UL 263 time-temperature fire conditions under a minimum positive pressure differential of 0.01 inch (2.49 Pa) of water at the location of the penetration for the time period equivalent to the *fire-resistance rating* of the construction penetrated. Penetrating items with a maximum 6-inch (152 mm) nominal diameter shall not be limited to the penetration of a single fire-resistance-rated floor assembly, provided the aggregate area of the openings through the assembly does not exceed 144 square inches (92 900 mm^2) in any 100 square feet (9.3 m^2) of floor area. Such penetrations shall be contained and located within the concealed space of a horizontal assembly or within the cavity of a wall above or below the floor.
2. Penetrations in a single concrete floor by steel, ferrous or copper conduits, pipes, tubes or vents with a maximum 6-inch (152 mm) nominal diameter, provided the concrete, grout or mortar is installed the full thickness of the floor or the thickness required to maintain the *fire-resistance rating*. The penetrating items shall not be limited to the penetration of a single concrete floor, provided the area of the opening through each floor does not exceed 144 square inches (92 900 mm^2). Such penetrations shall be contained and located within the concealed space of a horizontal assembly or within the cavity of a wall above or below the floor.
3. Penetrations by *listed* electrical boxes of any material, provided such boxes have been tested for use in fire-resistance-rated assemblies and installed in accordance with the instructions included in the listing.

Reason: The purpose for this change is not to eliminate the exceptions from the Code but to provide the necessary protection from thermal conductivity as required for other protection methods. There are several areas within the Code that address a concern with regard to the potential for fire spread due to thermal conductivity. The proposed language will result in the exceptions being consistent with the overall intent of the Code by addressing thermal conductivity.

The never ending variations of the potential existence and presence of combustibles in areas where penetrations are not concealed within the protection of a wall is a liability and is currently addressed inconsistently wihtin the Code.

Cost Impact: Will increase the cost of construction

It is anticipated that the cost of construction may increase on some projects since there will be additional cost if the exceptions are to be used. However, other alternative compliance options remain in the Code unchanged.

FS 61-15

714.4.1.2

Proponent: Tony Crimi, representing International Firestop Council (tcrimi@sympatico.ca)

2015 International Building Code

Revise as follows:

714.4.1.2 Through-penetration firestop system. *Through penetrations* shall be protected by an *approvedthrough-penetration firestop system* installed and tested in accordance with ASTM E 814 or UL 1479, with a minimum positive pressure differential of 0.01 inch of water (2.49 Pa). The system shall have an F rating/T rating of not less than 1 hour but not less than the required rating of the floor penetrated.

Exceptions:

1. Floor penetrations contained and located within the cavity of a wall above the floor or below the floor do not require a T rating.
2. Floor penetrations by floor drains, tub drains or shower drains contained and located within the concealed space ~~of~~below a ~~horizontal assembly~~floor do not require a T rating.
3. Floor penetrations of maximum 4-inch (102 mm) nominal diameter penetrating directly into metal-enclosed electrical power switchgear do not require a T rating.

Reason: This proposed change clarifies and potentially expands (depending on interpretation) the existing exception for floor penetrations by floor drains, tub drains or shower drains contained and located within the concealed space of a horizontal assembly. The existing language uses the term "horizontal assembly", which is a defined term in the IBC and denotes a fire resistance-rated floor or roof assembly. If the concealed space is part of a floor/ceiling assembly, which is a horizontal assembly that includes the use of a fire-rated ceiling membrane, then the penetration would be concealed behind a fire rated material. If the concealed space referred to in exception No. 2 is simply a floor assembly, which does not incorporate the use of a fire rated membrane, then a penetration that would be concealed would be above a non-rated ceiling. In either case, the horizontal concealed space of a floor/ceiling assembly (with rated membrane) or of a floor assembly (with non-rated ceiling) is comparable in construction and protection, to that of a wall cavity in the current exception for floor penetrations contained and located within the cavity of a wall above the floor or below the floor. In the wall exception (714.4.1.2, Exception 1), the wall concealing the penetration may be either non-rated or fire rated. Thus, the level of protection that the proposed wording would make clear is comparable to that provided in the current exception for penetrations concealed within a wall, and is consistent with the proponent's intent in FS69-09/10 that added Exception No.2 to the IBC.
Floor drains, tub drains and shower drains would never be located such that the pipe penetrating the floor would be within the cavity of a wall. Thus, those drains would not be able to use the existing T-rating exception for walls (Exception No. 1). Many jurisdictions are already interpreting Eception No, 2 to apply the logic of the existing exception for walls, to include the situation of penetrating items concealed above a a non-rated ceiling, as there is some intuitive recognition that the situations really are analogous.

Cost Impact: Will not increase the cost of construction
The proposal expands the exception to include fire-resistance rated floors in which the membrane is not part of the rating.

FS 61-15 : 714.4.1.2-CRIMI4303

FS 62-15

714.4.1.2

Proponent: Ken Cornwall, representing ProVent Systems, Inc. (kcornwall@prosetsystems.com)

2015 International Building Code

714.4.1.2 Through-penetration firestop system. *Through penetrations* shall be protected by an *approvedthrough-penetration firestop system* installed and tested in accordance with ASTM E 814 or UL 1479, with a minimum positive pressure differential of 0.01 inch of water (2.49 Pa). The system shall have an F rating/T rating of not less than 1 hour but not less than the required rating of the floor penetrated.

Exceptions:

1. Floor penetrations contained and located within the cavity of a wall above the floor or below the floor do not require a T rating.
2. Floor penetrations by floor drains, tub drains or shower drains contained and located ~~within the concealed space of~~inside a ~~horizontal assembly do not require a T rating~~bathroom and connected with PVC or ABS drainage pipe shall comply with Section 714.4.1.2.
3. Floor penetrations of maximum 4-inch (102 mm) nominal diameter penetrating directly into metal-enclosed electrical power switchgear do not require a T rating.

Reason: The "T" rating requires the penetration to close off within 5 to 7 minutes from the start of the ASTM E-814 fire test. If the "T"" rating is complied with, there would be none to very litlle smoke transmission through the openings. If the "T" rating is zero and not required, the normal closure can take up to 18 minutes. Bedrooms are usually located next to bathrooms where toxic smoke can fill the entire habitable sleeping area and cause fatal smoke inhalation.

Cost Impact: Will not increase the cost of construction
There should not be any additonal cost because the ASTM E-814 or UL1479 fire tests for these penetrations now requires "F" and "T" ratings.

FS 62-15 : 714.4.1.2-CORNWALL4772

FS 63-15

714.4.1.2

Proponent: Jonathan Roberts, UL LLC, representing UL LLC (jonathan.roberts@ul.com)

2015 International Building Code

Revise as follows:

714.4.1.2 Through-penetration firestop system. *Through penetrations* shall be protected by an *approvedthrough-penetration firestop system* installed and tested in accordance with ASTM E 814 or UL 1479, with a minimum positive pressure differential of 0.01 inch of water (2.49 Pa). The system shall have an F rating/T rating of not less than 1 hour but not less than the required rating of the floor penetrated.

Exceptions:

1. Floor penetrations contained and located within the cavity of a wall above the floor or below the floor do not require a T rating.
2. Floor penetrations by floor drains, tub drains or shower drains contained and located within the concealed space of a horizontal assembly do not require a T rating.
3. Floor penetrations of cable or maximum 4-inch (102 mm) nominal diameter metal conduit or tubing penetrating directly into metal-enclosed electrical power switchgear do not require a T rating.

Reason: In its current form, Exception 3 of Section 714.4.1.2 is incomplete in that it does not specify what is penetrating the floor into the top of the switchgear. The reason statement that was submitted with FS75-12, which led to Exception 3, references "metal EMT or conduit". However, these devices are also wired with cable. As such, this proposal suggests wiring methods which reflect all these options.

Cost Impact: Will not increase the cost of construction
It simply clarifies the current requirements.

FS 64-15

714.4.1.2

Proponent: Homer Maiel, PE, CBO, representing ICC Tri-Chapter (Peninsula, East Bay, Monterey Bay) (hmaiel@gmail.com)

2015 International Building Code

Revise as follows:

714.4.1.2 Through-penetration firestop system. *Through penetrations* shall be protected by an *approvedthrough-penetration firestop system* installed and tested in accordance with ASTM E 814 or UL 1479, with a minimum positive pressure differential of 0.01 inch of water (2.49 Pa). The system shall have an F rating/T rating of not less than 1 hour but not less than the required rating of the floor penetrated.

Exceptions:

1. Floor penetrations contained and located within the cavity of a wall above the floor or below the floor do not require a T rating.
2. Floor penetrations by floor drains, tub drains or shower drains contained and located within the concealed space of a horizontal assembly do not require a T rating.
3. Floor penetrations of maximum 4-inch (102 mm) nominal diameter penetrating directly into metal-enclosed electrical power switchgear do not require a T rating.
4. Floor penetrations in the parking garages do not require F and T ratings

Reason: It makes no sense to have a large unprotected openings between floors such as vehicle ramps and then a small floor opening next to such ramp to have F and T ratings!!

Cost Impact: Will not increase the cost of construction
This code change will decrease the cost of construction. In order to effectively compartmentalize a fire, a floor must prevent the passage of smoke and flame and also prevent the temperature on the non-fire side from rising high enough to ignite materials stored on non-fire side. To achieve these requirements, certain listed/approved fire stopping assemblies need to be installed; thus the added cost. By adopting this new exception, that requirements goes away and with it the added cost of fire stopping assemblies.

FS 65-15

714.4.1.2

Proponent: John Valiulis, Hilti, Inc., representing Hilti, Inc. (john.valiulis@hilti.com)

2015 International Building Code

Revise as follows:

714.4.1.2 Through-penetration firestop system. *Through penetrations* shall be protected by an *approvedthrough-penetration firestop system* installed and tested in accordance with ASTM E 814 or UL 1479, with a minimum positive pressure differential of 0.01 inch of water (2.49 Pa). The system shall have an F rating/T rating of not less than 1 hour but not less than the required rating of the floor penetrated.

Exceptions:

1. Floor penetrations contained and located within the cavity of a wall above the floor or below the floor do not require a T rating.
2. Floor penetrations by floor drains, tub drains or shower drains contained and located within the concealed space of a horizontal assembly do not require a T rating.
3. Floor penetrations of maximum 4-inch (102 mm) nominal diameter penetrating directly into metal-enclosed electrical power switchgear do not require a T rating.
4. Floor penetrations of a concrete floor by steel, ferrous, or copper conduits, pipes, tubes or vents with a maximum 6-inch (152 mm) nominal diameter, where the area of the opening through the floor does not exceed 144 square inches (92 900 mm^2) if the penetrating item penetrates more than a single floor, do not require a T-rating.

Reason: Overview

This code change aims to rectify the significant inconsistency in performance requirements for floor penetrations of fire rated concrete floor assemblies covered by different code sections. The proposed exception would set equal heat transfer performance expectations for the different code-permitted options for sealing some specific through-penetrations of a concrete floor.

Code requirements when the penetration is firestopped

The most common code-compliant way of firestopping a though-penetration of a fire resistance rated floor assembly is to protect the penetration in accordance with a tested through-penetration firestop system, as detailed in 714.4.1.2. Using a tested firestop system will require that the system have an F-rating equal to the rating of the penetrated assembly. The F-rating is a measure of the firestop system's ability to prevent fire passage. In addition, a floor penetration firestop system may also require a T-rating equal to the fire rating of the assembly, unless one of the three T-rating exceptions are met, as enumerated in 714.4.1.2, shown above. The T-rating is a measure of the firestop system's ability to limit temperature rise on the non-fire side of the penetration.

Code requirements when the penetration is sealed with concrete/grout/mortar

The IBC and the legacy codes have allowed an exception to the requirement for an approved, tested firestop system, under certain strict limitations, as covered in 714.4.1 Exception No. 2. Using Exception No. 2, the prescriptive code allows filling the annular space with full-depth concrete, grout, or mortar, if the penetration meets all of these conditions:

a) Is a steel, ferrous, or copper conduit, pipe, tube or vent

b) Has a maximum 6 inch nominal diameter

c) The area of the opening through the floor does not exceed 144 square inches if the penetrating item penetrates more than a single floor.

The level of fire safety provided by 714.4.1 Exception 2 is found to be lacking by some in the fire protection community, but the fact remains that it is in the 2015 IBC, was in the legacy codes, and has been used for several decades. This code change proposal acknowledges the continued existence of that exception, without commenting on its merits or lack thereof, and aims to make other sections of the code, namely 714.4.1.2, consistent with this exception, assuming that this exception remains in the Code.

Measured performance of penetrations sealed with concrete/grout/mortar

Using 714.4.1 Exception No.2, there is no requirement for the penetration sealing method (concrete, grout or mortar) to restrict the temperature rise of the penetrating item on the non-fire side to less than 325F (i.e. no requirement for a T-rating). A steel or copper penetrating item will in fact get hot quite fast on the non-fire side (above the floor) if sealed with the concrete/grout/mortar solution. A fire test conducted by UL in 2005 (see Reference No. 1) measured the penetrant temperature on the non-fire side (i.e. above the floor) for three separate floor penetrations, sealed with 1) hydraulic cement, 2) grout and 3) mortar. The penetrating items and hole sizes where within the parameters allowed by 714.4.1 Exception No. 2. The fire test exposure was the standard ASTM E119 time-temperature curve, which is the same time-temperature curve used for other required fire resistance ratings required within the IBC. The test demonstrated that for all three penetrations tested, the T-rating limit of 325F temperature rise was exceeded within 17 minutes. Thus, the penetrations sealed with concrete, grout or mortar would be 43 minutes short of achieving even a minimal 1-hour T-rating. This is inconsistent with 714.4.1.2, which requires an approved firestop system to have a T-rating of at least 1 hour, and not less than the required rating of the floor penetrated.

Making the options more consistent in their performance demands

It is this inconsistency that this present code change aims to correct. Under conditions where the Code does not require a penetrating item to maintain any specific maximum temperature rise (T-rating), that same performance requirement (or lack of requirement) should be maintained regardless of the methodology chosen to accomplish the penetration seal. It is not logical to require a tested and listed firestop system to restrict temperature rise to 325F on the non-fire side for 4 times the amount of time that this same temperature rise can be limited by the penetration sealed with concrete grout or

mortar. The performance criteria required by any one of a number of code-accepted alternatives should be equivalent, not divergent by a factor of four as in this instance.

Thus, for the very specific and limited applications where the code allows the concrete, grout or mortar solution (i.e. 6 inch copper or steel penetrant, with maximum hole size 144 sq. in. where penetrating item penetrates more than one floor), the T-rating should not be required when a tested and listed firestop system is used. The proposed new exception would not diminish the tested and proven ability of the firestop system to resist the passage of fire, as expressed by the F-rating, which still must equal the fire resistance rating of the penetrated assembly.

The words used for the proposed new exception are the same words used in 714.4.1 Exception No. 2 to describe the penetrating items that fall under that exception. This provides consistency not only of intent but also of verbiage between the two methodologies.

Establishing consistent temperature transmittal (T-rating) performance requirements between the concrete/grout/mortar solution, and the firestop solution, will have the advantage of allowing design and installation professionals to make a better, objective choice between the options. This change allows non-fire performance objectives of the penetration and fire safety to be considered without any other bias. For example, firestop systems can allow for movement of the penetrating item (depending on the firestop system selected), can provide a hermetic, water-tight seal, and would prevent the corrosion issues that are known to exist (depending on pipe and concrete composition) when a metallic pipe is cemented into a floor.

Bibliography: 1. "Fact-finding investigation of through-penetrations sealed with hydraulic cement, grout , or mortar", Underwriters' Laboratories, File R22102, Project 05CA06187, 2005

Cost Impact: Will not increase the cost of construction
The proposed new exception does not add any new requirements. Rather, under the specified conditions, it makes the option of using a tested and listed solution a more practical and therefore likely less expensive option that would be consistent with the level of heat transfer (T-rating) allowed for the prescriptive solution specified in 714.4.1 Exception 2.

FS 65-15 : 714.4.1.2-VALIULIS5542

FS 66-15

714.4.2

Proponent: Tony Crimi, representing International Firestop Council (tcrimi@sympatico.ca)

2015 International Building Code

Revise as follows:

714.4.2 Membrane penetrations. Penetrations of membranes that are part of a *horizontal assembly* shall comply with Section 714.4.1.1 or 714.4.1.2. Where floor/ceiling assemblies are required to have a *fire-resistance rating*, recessed fixtures shall be installed such that the required *fire resistance* will not be reduced.

Exceptions:

1. *Membrane penetrations* by steel, ferrous or copper conduits, pipes, tubes or vents, or concrete or masonry items where the *annular space* is protected either in accordance with Section 714.4.1 or to prevent the free passage of flame and the products of combustion. The aggregate area of the openings through the membrane shall not exceed 100 square inches (64 500 mm^2) in any 100 square feet (9.3 m^2) of ceiling area in assemblies tested without penetrations.
2. Ceiling *membrane penetrations* of maximum 2-hour *horizontal assemblies* by steel electrical boxes that do not exceed 16 square inches (10 323 mm^2) in area, provided the aggregate area of such penetrations does not exceed 100 square inches (44 500 mm^2) in any 100 square feet (9.29 m^2) of ceiling area, and the *annular space* between the ceiling membrane and the box does not exceed $^1/_8$ inch (3.2 mm).
3. *Membrane penetrations* by electrical boxes of any size or type, that have been *listed* as part of an opening protective material system for use in *horizontal assemblies* and are installed in accordance with the instructions included in the listing.
4. *Membrane penetrations* by *listed* electrical boxes of any material, provided such boxes have been tested for use in fire-resistance-rated assemblies and are installed in accordance with the instructions included in the listing. The *annular space* between the ceiling membrane and the box shall not exceed $^1/_8$ inch (3.2 mm) unless *listed* otherwise.
5. The *annular space* created by the penetration of a fire sprinkler, provided it is covered by a metal escutcheon plate.
6. Noncombustible items that are cast into concrete building elements and that do not penetrate both top and bottom surfaces of the element.
7. The ceiling membrane of 1- and 2-hour fire-resistance-rated horizontal assemblies is permitted to be interrupted with the ~~double~~ wood top plate of a wall assembly that is sheathed with Type X gypsum wallboard, provided that all penetrating items through the ~~double~~ top plates are protected in accordance with Section 714.4.1.1 or 714.4.1.2 and the ceiling membrane is tight to the top plates.

Reason: This code change was originally introduced in the 2012 IBC by FS75-09/10. It provided a new exception to section 712.4.1.2 to allow the ceiling membrane of a 1 or 2 hour fire rated floor/ceiling or roof/ceiling assembly to be interrupted by a double wood top plate of a fire rated wall. All penetrations of the top plates are protected by approved through penetration firestop systems. The proposal codified a typical condition that we see with Type VA construction where the wood framed walls extend up and attach directly to the underside of wood floor joists/trusses or roof joists/trusses for structural requirements. This code change was in line with the UL testing criteria and general information section. From the standpoint of firestopping, a double top plate is not necessary in order to effectively protect the penetrations. Many penetrations complying with Section 714.4.1.1 or 714.4.1.2 can be installed in a single wood top plate.

Cost Impact: Will not increase the cost of construction
This proposal will add design flexibility and potentially reduce the cost of construction for some situations. Some existing tested and Listed systems already exist for the revised condition.

FS 66-15 : 714.4.2-CRIMI4300

FS 67-15

714.4.2

Proponent: Jonathan Roberts, UL LLC, representing UL LLC (jonathan.roberts@ul.com)

2015 International Building Code

Revise as follows:

714.4.2 Membrane penetrations. Penetrations of membranes that are part of a *horizontal assembly* shall comply with Section 714.4.1.1 or 714.4.1.2. Where floor/ceiling assemblies are required to have a *fire-resistance rating*, recessed fixtures shall be installed such that the required *fire resistance* will not be reduced.

Exceptions:

1. *Membrane penetrations* by steel, ferrous or copper conduits, pipes, tubes or vents, or concrete or masonry items where the *annular space* is protected either in accordance with Section 714.4.1 or to prevent the free passage of flame and the products of combustion. The aggregate area of the openings through the membrane shall not exceed 100 square inches (64 500 mm^2) in any 100 square feet (9.3 m^2) of ceiling area in assemblies tested without penetrations.
2. Ceiling *membrane penetrations* of maximum 2-hour *horizontal assemblies* by steel electrical boxes that do not exceed 16 square inches (10 323 mm^2) in area, provided the aggregate area of such penetrations does not exceed 100 square inches (44 500 mm^2) in any 100 square feet (9.29 m^2) of ceiling area, and the *annular space* between the ceiling membrane and the box does not exceed $^1/_8$ inch (3.2 mm).
3. *Membrane penetrations* by electrical boxes of any size or type, that have been *listed* as part of an opening protective material system for use in *horizontal assemblies* and are installed in accordance with the instructions included in the listing.
4. *Membrane penetrations* by *listed* electrical boxes of any material, provided such boxes have been tested for use in fire-resistance-rated assemblies and are installed in accordance with the instructions included in the listing. The *annular space* between the ceiling membrane and the box shall not exceed $^1/_8$ inch (3.2 mm) unless *listed* otherwise.
5. The *annular space* created by the penetration of a fire sprinkler, provided it is covered by a metal escutcheon plate.
6. Noncombustible items that are cast into concrete building elements and that do not penetrate both top and bottom surfaces of the element.
7. The ceiling membrane of 1- and 2-hour fire-resistance-rated horizontal assemblies is permitted to be interrupted with the double wood top plate of a wall assembly that is sheathed with Type X gypsum wallboard, provided that all penetrating items through the double top plates are protected in accordance with Section 714.4.1.1 or 714.4.1.2 and the ceiling membrane is tight to the top plates.
8. <u>Ceiling membrane penetrations by listed luminaires (light fixtures) or by luminaires protected with listed materials, which have been tested for use in fire-resistance-rated assemblies and are installed in accordance with the instructions included in the listing.</u>

Reason: This proposal recognizes the listings of recessed incandescent and fluorescent can lights, or enclosure materials which protect recessed can lights or troffer light fixtures, which have been tested as a ceiling membrane penetration of fire-resistance-rated horizontal assemblies. There are currently twenty six UL listed can lights which incorporate integral fire protection which have evaluated for use in fire-resistance-rated horizontal assemblies. Similarly there are eleven UL listed enclosure materials which have been evaluated for their ability to protect penetrations in ceiling membranes by non fire rated can lights or troffer light fixtures.

Cost Impact: Will not increase the cost of construction
These products are already in use within the construction industry.

FS 67-15 : 714.4.2-ROBERTS5081

FS 68-15

715.1

Proponent: Paul Coats, PE CBO, representing American Wood Council (pcoats@awc.org)

2015 International Building Code

Revise as follows:

715.1 General. Where *joints* are provided to accommodate openings that are created due to building tolerances, or are designed to allow independent movement of the building in any plane caused by thermal, seismic, wind, or any other loading, they shall be protected in accordance with this section. Joints installed in or between fire-resistance-rated walls, floor or floor/ceiling assemblies and roofs or roof/ceiling assemblies shall be protected by an approved *fire-resistant joint system* designed to resist the passage of fire for a time period not less than the required *fire-resistance rating* of the wall, floor or roof in or between which the system is installed. *Fire-resistant joint systems* shall be tested in accordance with Section 715.3.

Exception: *Fire-resistant joint systems* shall not be required for joints in all of the following locations:

1. Floors within a single *dwelling unit*.
2. Floors where the joint is protected by a shaft enclosure in accordance with Section 713.
3. Floors within atriums where the space adjacent to the atrium is included in the volume of the atrium for smoke control purposes.
4. Floors within malls.
5. Floors and ramps within open and enclosed parking garages or structures constructed in accordance with Sections 406.5 and 406.6, respectively.
6. Mezzanine floors.
7. Walls that are permitted to have unprotected openings.
8. Roofs where openings are permitted.
9. Control joints not exceeding a maximum width of 0.625 inch (15.9 mm) and tested in accordance with ASTM E 119 or UL 263.

Reason: This proposal is editorial in nature and makes no change to the current requirements. The proposed wording comes directly from the current definition of Joint in Chapter 2: "Joint. The opening in or between adjacent assemblies that is created due to building tolerances, or is designed to allow independent movement of the building in any plan caused by thermal, seismic, wind or any other loading."
Inserting the definition of "joint" here will preclude confusion with other common uses of the term. The purpose of Section 715 is to maintain fire resistance in and between assemblies where spaces are intentionally provided to allow movement of building elements. Where such space is not needed nor provided, such as in platform frame construction, there is no requirement for a fire resistance rated joint system between fire resistance rated assemblies. The proposed wording will clarify the application.

Additional information about this proposal may be posted at http://www.awc.org/Code-Officials/2015-IBC-Code-Changes/

Cost Impact: Will not increase the cost of construction
This will have no impact on the cost of construction.The cost impact of this proposal will be zero since it is a clarification of current requirements and is editorial in nature.

FS 68-15 : 715.1-COATS4011

FS 69-15

715.1

Proponent: Tony Crimi, representing International Firestop Council (tcrimi@sympatico.ca)

2015 International Building Code

Revise as follows:

715.1 General. Joints installed in or between fire-resistance-rated walls, floor or floor/ceiling assemblies and roofs or roof/ceiling assemblies shall be protected by an approved *fire-resistant joint system* designed to resist the passage of fire for a time period not less than the required *fire-resistance rating* of the wall, floor or roof in or between which the system is installed. *Fire-resistant joint systems* shall be tested in accordance with Section 715.3.

Exception: *Fire-resistant joint systems* shall not be required for joints in all of the following locations:

1. Floors within a single *dwelling unit*.
2. Floors where the joint is protected by a shaft enclosure in accordance with Section 713.
3. Floors within atriums where the space adjacent to the atrium is included in the volume of the atrium for smoke control purposes.
4. Floors within malls.
5. Floors and ramps within open and enclosed parking garages or structures constructed in accordance with Sections 406.5 and 406.6, respectively.
6. Mezzanine floors.
7. Walls that are permitted to have unprotected openings.
8. Roofs where openings are permitted.
9. Control joints not exceeding a maximum width of 0.625 inch (15.9 mm) and tested in accordance with ASTM E 119 or UL 263.
10. <u>The intersection of exterior curtain wall assemblies and the roof slab or roof deck.</u>

Reason: The purpose of this code proposal is to clarify that a fire-resistant joint system is not required for the joint between an exterior curtain wall and a rated, or unrated, roof slab or deck.. The IBC has never had any requirement for that joint to be protected. However, given that the code does not say that you do or don't have to provide some protection at that joint, it is occasionally assumed and misinterpreted that some protection is required. Adding this joint to the list of joints that do not require a fire-resistant joint system will prevent such mis-application of the code.
There are currently no systems available to protect these joints, and no test methods available for this condition. So even if a request was made for a fire-resistant joint system at this location, it would be impossible to comply with that request. In addition, Section 711.4 already exempts penetrations of roof assemblies from needing protection. However, that should not be confused with continued need to protect penetrations through membranes of fire-resistance rated roof/ceiling assemblies.

In this case, it is specifically the joint between the roof slab or roof deck and the exterior curtain wall that would be exempted in a manner similar to through penetrations of a roof slab or roof deck.

Cost Impact: Will not increase the cost of construction
The proposals clarifies/adds an additional exemption to the need for a fire-resistant joint system.

FS 70-15

715.2

Proponent: William Koffel, representing Firestop Contractors International Association (wkoffel@koffel.com)

2015 International Building Code

Revise as follows:

715.2 Installation. A *fire-resistant joint system* shall be securely installed in accordance with the manufacturer's installation instructions and the listing criteria in or on the joint for its entire length so as not to ~~dislodge, loosen or otherwise~~ impair its ability to accommodate expected building movements and to resist the passage of fire and hot gases.

Reason: It is appropriate to install the fire-resistant joint system in accordance with the listing (including manufacturer's instructions) and in a manner to accommodate building movement. The text proposed to be deleted is subjective and does not provide enforceable Code text.
The manufacturer's installation instructions provide additional details that are not commonly identified in the listing criteria. This includes environmental conditions, tooling, and additional details regarding how the fire-resistant joint system is to be installed.

Cost Impact: Will not increase the cost of construction
The proposed text will not result in an increase in the cost of construction. Listed systems should already be installed in accordance with the manufacturer's installation instructions.

FS 70-15 : 715.2-KOFFEL4845

FS 71-15

715.2, 715.4

Proponent: Vickie Lovell, InterCode Incorporated, representing 3M (vickie@intercodeinc.com)

2015 International Building Code

Revise as follows:

715.2 Installation. ~~A~~ ~~*fire-resistant*~~*Fire-resistant joint* ~~*system*~~*systems* and other approved materials used to protect the void created at the intersection of a floor/ceiling assembly and the exterior wall assembly shall be securely installed~~ in accordance with the listing criteria in or on the joint~~ for its entire length so as not to dislodge, loosen or otherwise impair its ability to accommodate expected building movements and to resist the passage of fire and hot gases. *Fire-resistant joint systems* required by this section to be tested and listed shall be installed in accordance with their listing criteria.

715.4 Exterior curtain wall/floor intersection. Where ~~fire resistance-rated~~fire-resistance rated floor or floor/ceiling assemblies are required, voids created at the intersection of the exterior curtain wall assemblies and such floor assemblies shall be sealed with an *approved* system to prevent the interior spread of fire. Such systems shall be securely installed and tested in accordance with ASTM E 2307 to provide an *F rating* for a time period not less than the *fire-resistance rating* of the floor assembly. Height and fire-resistance requirements for curtain wall spandrels shall comply with Section 705.8.5.

> **Exception:** Voids created at the intersection of the exterior curtain wall assemblies and such floor assemblies where the vision glass extends to the finished floor level shall be permitted to be sealed with an approved material to prevent the interior spread of fire. Such material shall be securely installed for its entire length so as not to dislodge, loosen or otherwise impair its ability to accommodate expected building movement, and be capable of preventing the passage of flame and hot gases sufficient to ignite cotton waste where subjected to ASTM E 119 time-temperature fire conditions under a minimum positive pressure differential of 0.01 inch (0.254 mm) of water column (2.5 Pa) for the time period not less than the *fire-resistance rating* of the floor assembly.

Reason: The intent of this section of the code is to ensure that one of the largest joints in a multi-story building, the perimeter joint at the intersection of the exterior wall and the floor, is adequately protected. The text describes the appropriate systems and materials for use in such joints. The section states that fire-resistant joint systems and other approved materials used to protect the void created at the intersection of a floor/ceiling assembly and the exterior wall assembly systems and materials shall perform two functions: 1) to prevent or retard the passage of fire and hot gases; and 2) to be securely installed so as to accommodate building movement.

The code text identifies two different approaches to fire testing. One is a fire-resistance rated perimeter joint system tested to ASTM E 2307; the other is an assemblage of approved materials that has been deemed to provide adequate fire resistance based on historical testint to ASTM E 119 and anecdotal field experience. The shortfall in both approaches is that there is no requirement in this section of the code that requires the perimeter joint system nor the generic fire resistive materials to accommodate the expected movement of the joint. The code only states that both shall be "securely installed," presumably at the time of construction, but does not require that the material REMAIN securely installed throughout the life of the building. Throughout a building's life cycle, joints experience rotational, vertical and/or horizontal movement and would possibly dislodge the systems and materials over time. This proposal conveys that the systems and materials have to anticipate the expected movement of the building and make the code more consistent.

Cost Impact: Will not increase the cost of construction

This proposal should not increase the cost of construciton since joints are already required to be tested for cyclic movement within the standard ASTM E 2307. This proposal requires that the method of protecting the perimeter joint system be appropriate for the expected movement of the joint, which is implied but not currently required by the code.

FS 71-15 : 715.2-LOVELL4867

FS 72-15

715.3

Proponent: Jonathan Roberts, UL LLC, representing UL LLC (jonathan.roberts@ul.com)

2015 International Building Code

Revise as follows:

715.3 Fire test criteria. *Fire-resistant joint systems* shall be tested in accordance with the requirements of either ASTM E 1966 or UL 2079. Nonsymmetrical wall joint systems shall be tested with both faces exposed to the furnace, and the assigned *fire-resistance rating* shall be the shortest duration obtained from the two tests. Where evidence is furnished to show that the wall was tested with the least fire-resistant side exposed to the furnace, subject to acceptance of the *building official*, the wall need not be subjected to tests from the opposite side.

> **Exception:** For *exterior walls* with a horizontal *fire separation distance* greater than ~~5~~ 10 feet (~~1524~~3048 mm), the joint system shall be required to be tested for interior fire exposure only.

Reason: Section 705.5 of the 2015 International Building Code (IBC) states the required fire-resistance rating of exterior walls with a fire separation distance of greater than 10 feet shall be rated for exposure to fire from the inside only. This distance was increased from 5 feet to 10 feet with the 2009 edition of the IBC. This proposed change to the Exception of Section 715.3 is intended to bring consistency between the requirements for exterior walls and fire-resistant joint systems installed within exterior walls.

Cost Impact: Will increase the cost of construction
Any tested system previously acceptable will still be acceptable. This may provide a negligible increase cost.

FS 73-15

707.5, 711.4 (New), 711.5 (New), 712.1.5, 715, 715.1 (New), 715.1, 715.2, 715.3, 715.6, 715.2 (New), 715.2.1 (New), 715.4, 715.2.3 (New), 715.5, 715.4.1, 715.3 (New), 715.3.1 (New), 715.3.2 (New), 715.4.2, 715.1.1

Proponent: Tony Crimi, representing International Firestop Council (tcrimi@sympatico.ca)

2015 International Building Code

CHAPTER 7 FIRE AND SMOKE PROTECTION FEATURES
Revise as follows:

707.5 Continuity. *Fire barriers* shall extend from the top of the foundation or floor/ceiling assembly below to the underside of the floor or roof sheathing, slab or deck above and shall be securely attached thereto. Such *fire barriers* shall be continuous through concealed space, such as the space above a suspended ceiling. Joints and voids at intersections shall comply with Sections 707.8~~ and 707.9~~.

Exceptions:

1. Shaft enclosures shall be permitted to terminate at a top enclosure complying with Section 713.12.
2. Interior exit stairway and ramp enclosures required by Section 1023 and exit access stairway and ramp enclosures required by Section 1019 shall be permitted to terminate at a top enclosure complying with Section 713.12.

Add new text as follows:

711.4 Penetrations Penetrations of *horizontal assemblies*, whether concealed or unconcealed, shall comply with Section 714.

711.5 Joints Joints made in or between horizontal assemblies shall comply with Section 715.1.Joints or voids at the intersection of horizontal assemblies and fire resistance rated walls, curtain walls, and exterior vertical walls shall comply with Section 715.2.

Revise as follows:

712.1.5 Joints. Joints shall be permitted where complying with Section ~~712.1.5.1 or 712.1.5.2~~715, as applicable.

SECTION 715 ~~FIRE-RESISTANT JOINT SYSTEMS~~PROTECTION OF JOINTS
Add new text as follows:

715.1 Joints in or between fire-resistance-rated assemblies Joints in or between fire-resistance-rated assemblies shall comply with Sections 715.1.1 through 715.1.4.

Revise as follows:

~~715.1~~**715.1.1 General.** Joints installed in or between fire-resistance-rated walls, floor or floor/ceiling assemblies and roofs or roof/ceiling assemblies shall be protected by an approved *fire-resistant joint system* designed to resist the passage of fire for a time period not less than the required *fire-resistance rating* of the wall, floor or roof in or between which the system is installed. *Fire-resistant joint systems* shall be tested in accordance with Section ~~715.3~~715.1.3.

Exception: *Fire-resistant joint systems* shall not be required for joints in all of the following locations:

1. Floors within a single *dwelling unit*.
2. Floors where the joint is protected by a shaft enclosure in accordance with Section 713.
3. Floors within atriums where the space adjacent to the atrium is included in the volume of the atrium for smoke control purposes.
4. Floors within malls.
5. Floors and ramps within open and enclosed parking garages or structures constructed in accordance with Sections 406.5 and 406.6, respectively.
6. Mezzanine floors.
7. Walls that are permitted to have unprotected openings.
8. Roofs where openings are permitted.
9. Control joints not exceeding a maximum width of 0.625 inch (15.9 mm) and tested in accordance with ASTM E 119 or UL 263.

~~715.2~~**715.1.2 Installation.** A *fire-resistant joint system* shall be securely installed in accordance with the listing criteria in or on the joint for its entire length so as not to dislodge, loosen or otherwise impair its ability to accommodate expected building movements and to resist the passage of fire and hot gases.

~~715.3~~715.1.3 **Fire test criteria.** *Fire-resistant joint systems* shall be installed as tested in accordance with the requirements of either ASTM E 1966 or UL 2079. Nonsymmetrical wall joint systems shall be tested with both faces exposed to the furnace, and the assigned *fire-resistance rating* shall be the shortest duration obtained from the two tests. Where evidence is furnished to show that the wall was tested with the least fire-resistant side exposed to the furnace, subject to acceptance of the *building official*, the wall need not be subjected to tests from the opposite side.

> **Exception:** For *exterior walls* with a horizontal *fire separation distance* greater than 5 feet (1524 mm), the joint system shall be required to be tested for interior fire exposure only.

~~715.6~~715.1.4 **Fire-resistant joint systems in smoke barriers.** *Fire-resistant joint systems* in *smoke barriers*, and joints at the intersection of a horizontal *smoke barrier* and an exterior curtain wall, shall be tested in accordance with the requirements of UL 2079 for air leakage. The *L rating* of the joint system shall not exceed 5 cfm per linear foot (0.00775 m^3/s m) of joint at 0.30 inch (7.47 Pa) of water for both the ambient temperature and elevated temperature tests.

Add new text as follows:

715.2 Joints between floor assemblies and curtain walls. Joints between curtain walls and floor or floor/ceiling assemblies that are required to be fire resistance rated shall comply with Sections 715.2.1 through 715.2.4. Joints between curtain walls and nonfire-resistance-rated floor or floor/ceiling assemblies shall comply with Section 715.2.5.

715.2.1 Installation Joints shall be securely installed for its entire length so as not to dislodge, loosen or otherwise impair its ability to accommodate expected building movements and to resist the passage of fire and hot gases.

Revise as follows:

~~715.4~~715.2.2 **Exterior curtain wall/Fire resistance-rated floor or floor/ceiling intersection.** Where fire resistance-rated floor or floor/ceiling assemblies are required, voids created at the intersection of the exterior curtain wall assemblies and such floor assemblies shall be sealed with an *approved* system to prevent the interior spread of fire. Such systems shall be securely installed and tested in accordance with ASTM E 2307 to provide an *F rating* for a time period not less than the *fire-resistance rating* of the floor assembly. Height and fire-resistance requirements for curtain wall spandrels shall comply with Section 705.8.5.

> **Exception:** Voids created at the intersection of the exterior curtain wall assemblies and such floor assemblies where the vision glass extends to the finished floor level shall be permitted to be sealed with an approved material to prevent the interior spread of fire. Such material shall be securely installed and capable of preventing the passage of flame and hot gases sufficient to ignite cotton waste where subjected to ASTM E 119 time-temperature fire conditions under a minimum positive pressure differential of 0.01 inch (0.254 mm) of water column (2.5 Pa) for the time period not less than the *fire-resistance rating* of the floor assembly.

Add new text as follows:

715.2.3 Fire-resistant joint systems in smoke barriers. Joints at the intersection of a horizontal *smoke barrier* and an exterior curtain wall shall be tested in accordance with the requirements of UL 2079 for air leakage. The *L rating* of the joint system shall not exceed 5 cfm per linear foot (0.00775 m3/s m) of joint at 0.30 inch (7.47 Pa) of water for both the ambient temperature and elevated temperature tests.

Revise as follows:

~~715.5~~715.2.4 **Spandrel wall.** *No change to text.*

~~715.4.1~~715.2.5 **Exterior curtain wall/nonfire-resistance-rated floor assembly intersections.** Voids created at the intersection of exterior curtain wall assemblies and nonfire-resistance-rated floor or floor/ceiling assemblies shall be sealed with an *approved* material or system to retard the interior spread of fire and hot gases between *stories*.

Add new text as follows:

715.3 Joints between fire resistance rated walls and non-fire resistance rated floors or roofs. Joints between fire barriers and floors or roofs shall comply with Sections 715.3.1 and 715.3.2.

715.3.1 Installation Joints shall be securely installed so as not to dislodge, loosen or otherwise impair its ability to accommodate expected building movements and to retard the passage of fire and hot gases.

715.3.2 Joints between fire barriers and nonfire-resistance-rated roof assemblies. The voids created at the intersection of a *fire barrier* and a nonfire-resistance-rated roof assembly shall be filled with an approved material or system to retard the interior spread of fire and hot gases.

Revise as follows:

~~715.4.2~~715.4 **Exterior curtain wall/vertical fire barrier intersections.** *No change to text.*

~~715.1.1~~715.2.6 **Curtain wall assembly.** *No change to text.*

Reason: Section 715 organization is revised as follows, to group the rules for any given application together, and to draw clear distinctions between each one of them.

715.1 JOINTS IN OR BETWEEN FIRE RESISTANCE RATED ASSEMBLIES

715.2 JOINTS BETWEEN FLOOR ASSEMBLIES AND CURTAIN WALLS

715.3 JOINTS BETWEEN FIRE RESISTANCE RATED WALLS AND NON-FIRE RESISTANCE RATED FLOORS OR ROOFS

715.4 JOINTS BETWEEN FIRE RESISTANCE RATED WALLS AND NON-FIRE RESISTANCE RATED CURTAIN WALLS

All of the code requirements are exactly as in the 2015 IBC, except moved to the appropriate new sub-section of 715. The charging statements in the earlier parts of Chapter 7 that have pointed to sections or articles within 715 are modified to correct the articles to which they need to reference in the proposed, reorganized section 715. Similarly, new charging paragraphs are created to provide consistency in the format of each section.

Cost Impact: Will not increase the cost of construction
This proposal is a reorganization of existing requirements.

FS 74-15

402.8.6.1, 405.4.2, 405.4.3, 407.3.1, 408.3.8, 410.3.5, 510.2, 705.8.2, 706.8, 722.2.4.4, 909.20.3.1, 909.20.3.2, 1023.3.1, 3008.6.3, 3008.6.3.1, 3007.6.3, 3104.10

Proponent: John Woestman, Kellen Company, representing Builders Hardware Manufacturers Association (BHMA) (jwoestman@kellencompany.com)

2015 International Building Code

Revise as follows:

402.8.6.1 Exit passageways. Where *exit passageways* provide a secondary *means of egress* from a tenant space, doorways to the *exit passageway* shall be protected by 1-hour *fire door assemblies* that comply with Section 716 and are self- or automatic-closing by smoke detection in accordance with Section 716.5.9.3.

405.4.2 Smoke barrier penetration. The compartments shall be separated from each other by a *smoke barrier* in accordance with Section 709. Penetrations between the two compartments shall be limited to plumbing and electrical piping and conduit that are firestopped in accordance with Section 714. Doorways shall be protected by *fire door assemblies that comply with Section 716 and shall be* ~~that are~~ automatic-closing by smoke detection in accordance with Section 716.5.9.3 and are installed in accordance with NFPA 105 and Section 716.5.3. Where provided, each compartment shall have an air supply and an exhaust system independent of the other compartments.

405.4.3 Elevators. Where elevators are provided, each compartment shall have direct access to an elevator. Where an elevator serves more than one compartment, an elevator lobby shall be provided and shall be separated from each compartment by a s*moke barrier* in accordance with Section 709. ~~Doors~~Doorways in the smoke barrier shall be ~~gasketed~~protected by fire door assemblies that comply with Section 716, ~~have a drop sill~~shall comply with the smoke and draft control assembly requirements of Section 716.5.3 with the UL 1784 test conducted without an artificial bottom seal, and shall be automatic-closing by smoke detection in accordance with Section 716.5.9.3.

407.3.1 Corridor doors. *Corridor* doors, other than those in a wall required to be rated by Section 509.4 or for the enclosure of a vertical opening or an *exit*, shall not have a required *fire protection rating* and shall not be required to be equipped with *self-closing* or automatic-closing devices, but shall provide an effective barrier to limit the transfer of smoke and shall be equipped with positive latching. Roller latches are not permitted. Other doors shall conform to Section ~~716.5~~716.

408.3.8 Interior exit stairway and ramp construction. One *interior exit stairway* or *ramp* in each building shall be permitted to have glazing installed in doors and interior walls at each landing level providing access to the *interior exit stairway or ramp*, provided that the following conditions are met:

1. The *interior exit stairway or ramp* shall not serve more than four floor levels.
2. *Exit* doors shall be not less than $^3/_4$ -hour *fire door assemblies* complying with Section ~~716.5~~716
3. The total area of glazing at each floor level shall not exceed 5,000 square inches (3.2 m^2) and individual panels of glazing shall not exceed 1,296 square inches (0.84 m^2).
4. The glazing shall be protected on both sides by an *automatic sprinkler system*. The sprinkler system shall be designed to wet completely the entire surface of any glazing affected by fire when actuated.
5. The glazing shall be in a gasketed frame and installed in such a manner that the framing system will deflect without breaking (loading) the glass before the sprinkler system operates.
6. Obstructions, such as curtain rods, drapery traverse rods, curtains, drapes or similar materials shall not be installed between the automatic sprinklers and the glazing.

410.3.5 Proscenium curtain. Where a proscenium wall is required to have a *fire-resistance rating*, the *stage* opening shall be provided with a fire curtain complying with NFPA 80, horizontal sliding doors complying with Section ~~716.5.2~~716 having a fire protection rating of at least 1 hour, or an *approved* water curtain complying with Section 903.3.1.1 or, in facilities not utilizing the provisions of smoke-protected assembly seating in accordance with Section 1029.6.2, a smoke control system complying with Section 909 or natural *ventilation* designed to maintain the smoke level not less than 6 feet (1829 mm) above the floor of the *means of egress*.

510.2 Horizontal building separation allowance. A building shall be considered as separate and distinct buildings for the purpose of determining area limitations, continuity of *fire walls*, limitation of number of *stories* and type of construction where all of the following conditions are met:

1. The buildings are separated with a *horizontal assembly* having a *fire-resistance rating* of not less than 3 hours.
2. The building below the *horizontal assembly* is of Type IA construction.

3. *Shaft*, *stairway*, *ramp* and escalator enclosures through the *horizontal assembly* shall have not less than a 2-hour *fire-resistance rating* with opening protectives in accordance with Section ~~716.5~~716.

   Exception: Where the enclosure walls below the *horizontal assembly* have not less than a 3-hour *fire-resistance rating* with opening protectives in accordance with Section ~~716.5~~716, the enclosure walls extending above the *horizontal assembly* shall be permitted to have a 1-hour *fire-resistance rating*, provided:

   1. The building above the *horizontal assembly* is not required to be of Type I construction;
   2. The enclosure connects fewer than four *stories*; and
   3. The enclosure opening protectives above the *horizontal assembly* have a *fire protection rating* of not less than 1 hour.

4. The building or buildings above the *horizontal assembly* shall be permitted to have multiple Group A occupancy uses, each with an *occupant load* of less 300, or Group B, M, R or S occupancies.
5. The building below the *horizontal assembly* shall be protected throughout by an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, and shall be permitted to be any occupancy allowed by this code except Group H.
6. The maximum *building height* in feet (mm) shall not exceed the limits set forth in Section 504.3 for the building having the smaller allowable height as measured from the *grade plane*.

705.8.2 Protected openings. Where openings are required to be protected, ~~*fire doors* and fire shutters~~opening protectives shall comply with Section ~~716.5 and *fire window assemblies* shall comply with Section 716.6~~716.

Exception: Opening protectives are not required where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 and the exterior openings are protected by a water curtain using automatic sprinklers *approved* for that use.

706.8 Openings. Each opening through a *fire wall* shall be protected in accordance with Section ~~716.5~~716 and shall not exceed 156 square feet (15 m^2). The aggregate width of openings at any floor level shall not exceed 25 percent of the length of the wall.

Exceptions:

1. Openings are not permitted in party walls constructed in accordance with Section 706.1.1.
2. Openings shall not be limited to 156 square feet (15 m^2) where both buildings are equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1.

722.2.4.4 Columns built into walls. The minimum dimensions of Table 722.2.4 do not apply to a reinforced concrete column that is built into a concrete or masonry wall provided all of the following are met:

1. The *fire-resistance rating* for the wall is equal to or greater than the required rating of the column;
2. The main longitudinal reinforcing in the column has cover not less than that required by Section 722.2.4.2; and
3. Openings in the wall are protected in accordance with ~~Table 716.5~~Section 716.

Where openings in the wall are not protected as required by Section ~~716.5~~716, the minimum dimension of columns required to have a *fire-resistance rating* of 3 hours or less shall be 8 inches (203 mm), and 10 inches (254 mm) for columns required to have a *fire-resistance rating* of 4 hours, regardless of the type of aggregate used in the concrete.

909.20.3.1 Balcony doors. Where access to the *stairway* or *ramp* is by way of an open exterior balcony, the door assembly into the enclosure shall be a *fire door assembly* in accordance with Section ~~716.5~~716.

909.20.3.2 Vestibule doors. Where access to the *stairway* or *ramp* is by way of a vestibule, the door assembly into the vestibule shall be a *fire doorassembly* complying with Section ~~716.5~~716. The door assembly from the vestibule to the *stairway* shall have not less than a 20-minute *fire protection rating* complying with Section ~~716.5~~716.

Add new text as follows:

1023.3.1 Extension. Where *interior exit stairways* and *ramps* are extended to an *exit discharge* or a *public way* by an *exit passageway*, the *interior exit stairway* and *ramp* shall be separated from the *exit passageway* by a *fire barrier* constructed in accordance with Section 707 or a *horizontal assembly* constructed in accordance with Section 711, or both. The *fire-resistance rating* shall be not less than that required for the *interior exit stairway* and *ramp*. A *fire door* assembly complying with Section 716 shall be installed in the *fire barrier* to provide a *means of egress* from the *interior exit stairway* and *ramp* to the *exit passageway*. Openings in the *fire barrier* other than the *fire door* assembly are prohibited. Penetrations of the *fire barrier* are prohibited.

Exceptions:

1. Penetrations of the *fire barrier* in accordance with Section 1023.5 shall be permitted.

2. Separation between an *interior exit stairway* or *ramp* and the *exit passageway* extension shall not be required where there are no openings into the *exit passageway* extension.

Revise as follows:

3008.6.3 Lobby doorways. Other than the doors to the hoistway, elevator machine rooms, machinery spaces, control rooms and control spaces within the lobby enclosure smoke barrier, each doorway to an occupant evacuation elevator lobby shall be provided with a $^{3}/_{4}$-hour *fire door assembly* complying with Section ~~716.5~~716. The *fire door assembly* shall comply with the smoke and draft control assembly requirements of Section 716.5.3.1, and tested in accordance with ~~the~~ UL 1784 ~~test conducted~~ without ~~the~~ an artificial bottom seal.

3008.6.3.1 Vision panel. A vision panel shall be installed in each *fire door assembly* protecting the lobby doorway. The vision panel shall consist of fire-protection-rated glazing and shall comply with the requirements of Section 716 and shall be located to furnish clear vision of the occupant evacuation elevator lobby.

3007.6.3 Lobby doorways. Other than doors to the hoistway, elevator control room or elevator control space, each doorway to a fire service access elevator lobby shall be provided with a $^{3}/_{4}$-hour *fire door assembly* complying with Section ~~716.5~~716. The *fire door assembly* shall comply with the smoke and draft control door assembly requirements of Section 716.5.3.1, and tested in accordance with ~~the~~ UL 1784 ~~test conducted~~ without ~~the~~an artificial bottom seal.

3104.10 Tunneled walkway. Separation between the tunneled walkway and the building to which it is connected shall be not less than 2-hour fire-resistant construction and openings therein shall be protected in accordance with ~~Table 716.5.~~Section 716.

Reason: This proposal is an effort to review all I-Code references that "point" IBC Section 716 and its subsections.
In many locations, the references to a subsection of IBC 716 many need only an editorial update to the new location of the references requirements based on the reorganized text.

In other locations, it seems appropriate to clarify and / slightly revise the text and the reference.

These proposed revisions may, in some cases, be considered technical revisions. But, the goal of the proposed revisions is to be consistent with what is understood to be the intent of the code.

Cost Impact: Will not increase the cost of construction
There should be no cost increase, if the proposed revisions are consistent with the intent of the code.

FS 74-15 : 705.8.2-WOESTMAN5793

FS 75-15

716.1, 716.5

Proponent: Adolf Zubia, representing Fire Code Action Committee (fcac@iccsafe.org)

2015 International Building Code

Revise as follows:

716.1 General. Opening protectives required by other sections of this code shall comply with the provisions of this section and shall be installed in accordance with NFPA 80.

716.5 Fire door and shutter assemblies. Approved *fire door* and fire shutter assemblies shall be constructed of any material or assembly of component materials that conforms to the test requirements of Section 716.5.1, 716.5.2 or 716.5.3 and the *fire protection rating* indicated in Table 716.5. *Fire door* frames with transom lights, sidelights or both shall be permitted in accordance with Section 716.5.6. ~~*Fire door* assemblies and shutters shall be installed in accordance with the provisions of this section and NFPA 80.~~

Exceptions:

1. Labeled protective assemblies that conform to the requirements of this section or UL 10A, UL 14B and UL 14C for tin-clad *fire door* assemblies.
2. Floor *fire door* assemblies in accordance with Section 712.1.13.1.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. The Fire-CAC has held 10 open meetings and numerous Regional Work Group and Task Group meetings and conference calls for the current code development cycle which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx?usertoken={token}&Site=icc
This proposal relocates the requirement for installation in accordance with NFPA 80 to Section 716.1 because this is applicable to all opening protectives covered in Section 716, including fire door assemblies, fire shutter assemblies, fire window assemblies and glass unit masonry.

The FCAC opening protective work group included interested industry and testing lab representatives working together to make this section more user friendly. The work group unanimously agreed on a number of proposed changes to IBC Section 716, including this one.

Cost Impact: Will not increase the cost of construction
This code change is primarily editorial but clarifies that all opening protectives shall be installed to NFPA 80.

FS 75-15 : 716.1-ZUBIA4214

FS 76-15

Table 716.3, 2409.1

Proponent: Adolf Zubia, ICC Staff, representing Fire Code Action Committee (fcac@iccsafe.org)

2015 International Building Code

Revise as follows:

TABLE 716.3
MARKING FIRE-RATED GLAZING ASSEMBLIES

FIRE TEST STANDARD	MARKING	DEFINITION OF MARKING
ASTM E 119 or UL 263	W	Meets wall assembly criteria.
ASTM E 119 or UL 263	FC	Meets floor/ceiling criteria[a]
NFA 257 or UL 9	OH	Meets fire window assembly criteria including the hose stream test.
NFPA 252 or UL 10B or UL 10C	D H T	Meets fire door assembly criteria. Meets fire door assembly hose stream test. Meets 450ºF temperature rise criteria for 30 minutes
	XXX	The time in minutes of the fire resistance or fire protection rating of the glazing assembly.

For SI: ºC = [(ºF) - 32]/1.8.

a. See Section 2409.1

2409.1 Glass walkways. Glass installed as a part of a floor/ceiling assembly as a walking surface and constructed with laminated glass shall comply with ASTM E 2751 or with the load requirements specified in Chapter 16. Such assemblies shall comply with the *fire-resistance rating and marking* requirements of this code where applicable.

Reason: In July/2014 the ICC Board decided to sunset the activities of the Code Technology Committee (CTC). This is being accomplished by re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). This proposal falls under the CTC Area of Study entitled Unenclosed stairways and ADA/IBC coordination. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website.
This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 10 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx?usertoken={token}&Site=icc

To assist designers, builders and code officials in determining the correct product has been supplied/installed when fire protection or fire-resistance-rated glazing is called for in a construction project, the code requires markings linked to the rating/appropriate use of the product. As new products and uses are introduced to the market, the marking requirements require updating. This proposal recognizes the use of ASTM E 119 or UL 263 tested and listed products for rated floor/ceiling assemblies by designating the marking as FC. The proposal adds the criteria and the marking letters to Table 716.3 and it modifies Section 2409.1 to include the requirement for the marking. This proposal maintains consistency in the code when dealing with fire-rated glazing products.

Cost Impact: Will not increase the cost of construction
The changes to the Table better reflect existing code requirements.

FS 77-15

716.3.1

Proponent: Jonathan Roberts, representing UL LLC (jonathan.roberts@ul.com)

2015 International Building Code

Revise as follows:

716.3.1 Fire-rated glazing identification. For fire-rated glazing, the *label* shall bear the identification required in Tables 716.3 and 716.5. "D" indicates that the glazing is permitted to be used in *fire door* assemblies and that the glazing meets the fire protection requirements of NFPA 252, UL 10B or UL 10C. "H" shall indicate that the glazing meets the hose stream requirements of NFPA 252, UL 10B or UL 10C. "T" shall indicate that the glazing meets the temperature requirements of Section 716.5.5.1. The placeholder "XXX" represents the fire-rating period, in minutes.

Reason: UL 10B and 10C have been included as comparable standards to NFPA 252 since the 2009 edition of the International Building Code. All other sections of the Section 716 which reference NFPA 252 also include UL 10B and 10C. This proposal revises Section 716.4 to also reference UL 10B and 10C in conjunction with NFPA 252 for consistency.

Cost Impact: Will not increase the cost of construction
This simply provides code users more flexibility by allowing the use of the comparable UL standard.

FS 78-15

716.4

Proponent: Adolf Zubia, representing Fire Code Action Committee (fcac@iccsafe.org)

2015 International Building Code

Revise as follows:

716.4 Alternative methods for determining fire protection ratings. The application of any of the alternative methods *listed* in this section shall be based on the fire exposure and acceptance criteria specified in NFPA 252, UL 10B, UL 10C, NFPA 257 or UL 9. The required *fire resistance* of an opening protective shall be permitted to be established by any of the following methods or procedures:

1. Designs documented in *approved* sources.
2. Calculations performed in an *approved* manner.
3. Engineering analysis based on a comparison of opening protective designs having *fire protection ratings* as determined by the test procedures set forth in NFPA 252, UL 10B, UL 10C, NFPA 257 or UL 9.
4. Alternative protection methods as allowed by Section 104.11.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. The Fire-CAC has held 10 open meetings and numerous Regional Work Group and Task Group meetings and conference calls for the current code development cycle which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx?usertoken={token}&Site=icc
UL 10B and 10C have been included as comparable standards to NFPA 252 since the 2009 edition of the International Building Code. All other sections of the Section 716 which reference NFPA 252 also include UL 10B and 10C. This proposal revises Section 716.4 to also reference UL 10B and 10C in conjunction with NFPA 252 for consistency.

The FCAC opening protective work group included interested industry and testing lab representatives working together to make this section more user friendly. The work group unanimously agreed on a number of proposed changes to IBC Section 716, including this one

Cost Impact: Will not increase the cost of construction
This code change proposal allows options for engineering analysis based on two UL standards.

FS 79-15

Table 716.5

Proponent: Adolf Zubia, representing Fire Code Action Committee (fcac@iccsafe.org)

2015 International Building Code

Revise as follows:

TABLE 716.5
OPENING FIRE PROTECTION ASSEMBLIES, RATINGS AND MARKINGS

TYPE OF ASSEMBLY	REQUIRED WALL ASSEMBLY RATING (hours)	MINIMUM FIRE DOOR AND FIRE SHUTTER ASSEMBLY RATING (hours)	DOOR VISION PANEL SIZE[b]	FIRE-RATED GLAZING MARKING DOOR VISION PANEL[d,f]	MINIMUM SIDELIGHT/ TRANSOM ASSEMBLY RATING (hours)		FIRE-RATED GLAZING MARKING SIDELIGHT/TRANSOM PANEL	
					Fire protection	Fire resistance	Fire protection	Fire resistance
Fire walls and fire barriers having a required fire-resistance rating greater than 1 hour	4	3	See Note b	D-H-W-240	Not Permitted	4	Not Permitted	W-240
	3	3[a]	See Note b	D-H-W-180	Not Permitted	3	Not Permitted	W-180
	2	1 1/2	100 sq. in.	≤100 sq. in. = D-H-90 >100 sq. in.= D-H-W-90	Not Permitted	2	Not Permitted	W-120
	1 1/2	1 1/2	100 sq. in.	≤100 sq. in. = D-H-90 >100 sq. in.=D-H-W-90	Not Permitted	1 1/2	Not Permitted	W-90
Enclosures for shafts, interior exit stairways and interior exit ramps.	2	1 1/2	100 sq. in.	≤100 sq. in. = D-H-90 > 100 sq. in.=D-H-T-W-90	Not Permitted	2	Not Permitted	W-120
Horizontal exits in fire walls[e]	4	3	100 sq. in.	≤100 sq. in. = D-H-180 > 100 sq. in.=D-H-W-240	Not Permitted	4	Not Permitted	W-240

	3	3[a]	100 sq. in.	≤100 sq. in. = D-H-180 > 100 sq. in.=D-H-W-180	Not Permitted	3	Not Permitted	W-180
Fire barriers having a required fire-resistance rating of 1 hour: Enclosures forshafts,exit access stairways, exit access ramps, interior exit stairways and interior exit ramps; and exit passageway walls	1	1	100 sq. in.[c]	≤100 sq. in. = D-H-60 >100 sq. in.= D-H-T-W-60	Not Permitted	1	Not Permitted	W-60
					Fire protection			
Other fire barriers	1	$^3/_4$	Maximum size tested	D-H	$^3/_4$		D-H	
Fire partitions: Corridor walls	1	$^1/_3$[b]	Maximum size tested	D-20	$^3/_4$[b]		D-H-OH-45	
	0.5	$^1/_3$[b]	Maximum size tested	D-20	$^1/_3$		D-H-OH-20	
Other fire partitions	1	$^3/_4$	Maximum size tested	D-H-45	$^3/_4$		D-H-45	
	0.5	$^1/_3$	Maximum size tested	D-H-20	$^1/_3$		D-H-20	

TYPE OF ASSEMBLY	**REQUIRED WALL ASSEMBLY RATING (hours)**	**MINIMUM FIRE DOOR AND FIRE SHUTTER ASSEMBLY RATING (hours)**	**DOOR VISION PANEL SIZE[b]**	**FIRE-RATED GLAZING MARKING DOOR VISION PANEL[d]**	**MINIMUM SIDELIGHT/ TRANSOM ASSEMBLY RATING (hours)**		**FIRE-RATED GLAZING MARKING SIDELIGHT/TRANSOM PANEL**	
					Fire protection	**Fire resistance**	**Fire protection**	**Fire resistance**

Exterior walls	3	$1^1/_2$	100 sq. in.[b]	≤100 sq. in. = D-H-90 >100 sq. in = D-H-W-90	Not Permitted	3	Not Permitted	W-180
	2	$1^1/_2$	100 sq. in.[b]	≤100 sq. in. = D-H-90 >100 sq. in.= D-H-W-90	Not Permitted	2	Not Permitted	W-120
					Fire protection			
	1	$^3/_4$	Maximum size tested	D-H-45	$^3/_4$		D-H-45	
Smoke barriers					**Fire protection**			
	1	$^1/_3$	Maximum size tested	D-20	$^3/_4$		D-H-OH-45	

For SI: 1 square inch = 645.2 mm.

a. Two doors, each with a fire protection rating of $1^1/_2$ hours, installed on opposite sides of the same opening in a fire wall, shall be deemed equivalent in fire protection rating to one 3-hour fire door.

b. Fire-resistance-rated glazing tested to ASTM E 119 in accordance with Section 716.2 shall be permitted, in the maximum size tested.

c. Except where the building is equipped throughout with an automatic sprinkler and the fire-rated glazing meets the criteria established in Section 716.5.5.

d. Under the column heading "Fire-rated glazing marking door vision panel," W refers to the fire-resistance rating of the glazing, not the frame.

e. See Section 716.5.8.1.2.1.

f. See also Section 716.3.1 and Table 716.3 for additional permitted markings.

Reason: In July/2014 the ICC Board decided to sunset the activities of the Code Technology Committee (CTC). This is being accomplished by re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). This proposal falls under the CTC Area of Study entitled labeling of fire-rated glazing Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website.
This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. The Fire-CAC has held 10 open meetings and numerous Regional Work Group and Task Group meetings and conference calls for the current code development cycle which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx?usertoken={token}&Site=icc

Section 716.3 and 716.3.1 allow for fire rated glazing products to have product performance markings greater than the minimum requirement of the code. The language was added to the 2012 code. Table 716.5 is a graphic representation of the codes requirements for the rating opening assemblies, the allowable use of fire rated glazing and the minimum marking criteria when fire rated glazing is permitted. The table is not the actual technical requirements, those technical requirements exist within the written sections of Chapter 7. The table serves as an application aid for quick reference on what is required depending on the assembly an opening is in. Sections 716.3 and 716.3.1 are intended to be enhancements to the required markings of glazing products and the footnote proposed to be added is to enhance the application of Table 716.5 and clarify the table as a quick reference guide.

Cost Impact: Will not increase the cost of construction
This change merely clarifies the marking requirements for a specific type of glazing.

FS 79-15 : T716.5-ZUBIA4199

FS 80-15

Table 716.5

Proponent: Robert Davidson, Davidson Code Concepts, LLC, representing SAFTI FIRST (rjd@davidsoncodeconcepts.com)

2015 International Building Code

Revise as follows:

TABLE 716.5
OPENING FIRE PROTECTION ASSEMBLIES, RATINGS AND MARKINGS

TYPE OF ASSEMBLY	REQUIRED WALL ASSEMBLY RATING (hours)	MINIMUM FIRE DOOR AND FIRE SHUTTER ASSEMBLY RATING (hours)	DOOR VISION PANEL SIZE[b]	FIRE-RATED GLAZING MARKING DOOR VISION PANEL[d]	MINIMUM SIDELIGHT/ TRANSOM ASSEMBLY RATING (hours)		FIRE-RATED GLAZING MARKING SIDELIGHT/TRANSOM PANEL	
					Fire protection	Fire resistance	Fire protection	Fire resistance
Fire walls and fire barriers having a required fire-resistance rating greater than 1 hour	4	3	See Note b	D-H-W-240	Not Permitted	4	Not Permitted	W-240
	3	3[a]	See Note b	D-H-W-180	Not Permitted	3	Not Permitted	W-180
	2	$1^1/_2$	100 sq. in.	≤100 sq. in. = D-H-90 >100 sq. in.= D-H-W-90	Not Permitted	2	Not Permitted	W-120
	$1^1/_2$	$1^1/_2$	100 sq. in.	≤100 sq. in. = D-H-90 >100 sq. in.=D-H-W-90	Not Permitted	$1^1/_2$	Not Permitted	W-90
Enclosures for shafts, interior exit stairways and interior exit ramps.	2	$1^1/_2$	100 sq. in.	≤100 sq. in. = D-H-90 > 100 sq. in.=D-H-T-W-90	Not Permitted	2	Not Permitted	W-120
Horizontal exits in fire walls[e]	4	3	100 sq. in.	≤100 sq. in. = D-H-180 > 100 sq. in.=D-H-W-240	Not Permitted	4	Not Permitted	W-240

	3	3[a]	100 sq. in.	≤100 sq. in. = D-H-180 > 100 sq. in.=D-H-W-180	Not Permitted	3	Not Permitted	W-180
Fire barriers having a required fire-resistance rating of 1 hour: Enclosures forshafts,exit access stairways, exit access ramps, interior exit stairways and interior exit ramps; and exit passageway walls	1	1	100 sq. in.[e]	≤100 sq. in. = D-H-60 >100 sq. in.= D-H-T-W-60	Not Permitted	1	Not Permitted	W-60
					Fire protection			
Other fire barriers	1	$^{3}/_{4}$	Maximum size tested	D-H	$^{3}/_{4}$		D-H	
Fire partitions: Corridor walls	1	$^{1}/_{3}$[b]	Maximum size tested	D-20	$^{3}/_{4}$[b]		D-H-OH-45	
	0.5	$^{1}/_{3}$[b]	Maximum size tested	D-20	$^{1}/_{3}$		D-H-OH-20	
Other fire partitions	1	$^{3}/_{4}$	Maximum size tested	D-H-45	$^{3}/_{4}$		D-H-45	
	0.5	$^{1}/_{3}$	Maximum size tested	D-H-20	$^{1}/_{3}$		D-H-20	

TYPE OF ASSEMBLY	**REQUIRED WALL ASSEMBLY RATING (hours)**	**MINIMUM FIRE DOOR AND FIRE SHUTTER ASSEMBLY RATING (hours)**	**DOOR VISION PANEL SIZE[b]**	**FIRE-RATED GLAZING MARKING DOOR VISION PANEL[d]**	**MINIMUM SIDELIGHT/ TRANSOM ASSEMBLY RATING (hours)**		**FIRE-RATED GLAZING MARKING SIDELIGHT/TRANSOM PANEL**	
					Fire protection	**Fire resistance**	**Fire protection**	**Fire resistance**

Exterior walls	3	$1^1/_2$	100 sq. in.[b]	≤100 sq. in. = D-H-90 >100 sq. in = D-H-W-90	Not Permitted	3	Not Permitted	W-180
	2	$1^1/_2$	100 sq. in.[b]	≤100 sq. in. = D-H-90 >100 sq. in.= D-H-W-90	Not Permitted	2	Not Permitted	W-120
					Fire protection			
	1	$^3/_4$	Maximum size tested	D-H-45	$^3/_4$		D-H-45	
Smoke barriers					**Fire protection**			
	1	$^1/_3$	Maximum size tested	D-20	$^3/_4$		D-H-OH-45	

For SI: 1 square inch = 645.2 mm.

a. Two doors, each with a fire protection rating of $1^1/_2$ hours, installed on opposite sides of the same opening in a fire wall, shall be deemed equivalent in fire protection rating to one 3-hour fire door.

b. Fire-resistance-rated glazing tested to ASTM E 119 in accordance with Section 716.2 shall be permitted, in the maximum size tested.

~~c. Except where the building is equipped throughout with an automatic sprinkler and the fire-rated glazing meets the criteria established in Section 716.5.5.~~

d. Under the column heading "Fire-rated glazing marking door vision panel," W refers to the fire-resistance rating of the glazing, not the frame.

e. See Section 716.5.8.1.2.1.

Reason: This proposal is to delete "note c" from Table 716.5 since the note does not make any changes to the current code requirements indicated in the Table. Note c is attached to the "100 sq. in." limitation in the "Door Vision Panel Size" column at the "Fire barriers having a required fire resistance rating of 1 hour: Enclosures for shafts, exit access stairways, exit access ramps, interior exit stairways and interior exit ramps; and exit passageway walls" line.

It directs the user to Section 716.5.5 of the code. However, current Section 716.5.5 does not provide for any modification of the 100 sq. in. limitation for fire protection rated glazing. (Note B at the top of the column provides for increased fire-resistance rated glazing size).

716.5.5 Doors in interior exit stairways and ramps and exit passageways. Fire door assemblies in interior exit stairways and ramps and exit passageways shall have a maximum transmitted temperature rise of not more than 450°F (250°C) above ambient at the end of 30 minutes of standard fire test exposure.

Exception: The maximum transmitted temperature rise is not required in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.

716.5.5.1 Glazing in doors. Fire-protection-rated glazing in excess of 100 square inches (0.065 m2) is not permitted. Fire-resistance-rated glazing in excess of 100 square inches (0.065 m2) shall be permitted in door fire doors. Listed fire-resistance-rated glazing in a fire door shall have a maximum transmitted temperature rise in accordance with Section 716.5.5 when the fire door is tested in accordance with NFPA 252, UL 10B or UL 10C.

The note traces back to a previous edition of the IBC where the maximum transmitted temperature rise exception was repeated under Section 716.5.5.1 in error. That was corrected with the exception being deleted in the 2012 edition of the IBC and as a result Note c needs to be deleted as it currently creates misdirection to a user of the table.

Cost Impact: Will not increase the cost of construction

The cost of construction would be reduced by clarification of the code language through deletion of the misleading note.

FS 81-15

Table 716.5, 716.5.5, 716.5.5.1, 716.5.8.1.2

Proponent: Tom Zaremba, representing Alliance of Fire Rated Glazing Manufacturers (tzaremba@ralaw.com)

2015 International Building Code

Revise as follows:

TABLE 716.5
OPENING FIRE PROTECTION ASSEMBLIES, RATINGS AND MARKINGS

TYPE OF ASSEMBLY	REQUIRED WALL ASSEMBLY RATING (hours)	MINIMUM FIRE DOOR AND FIRE SHUTTER ASSEMBLY RATING (hours)	DOOR VISION PANEL SIZE[b]	FIRE-RATED GLAZING MARKING DOOR VISION PANEL[d]	MINIMUM SIDELIGHT/ TRANSOM ASSEMBLY RATING (hours)		FIRE-RATED GLAZING MARKING SIDELIGHT/TRANSOM PANEL	
					Fire protection	Fire resistance	Fire protection	Fire resistance
Fire walls and fire barriers having a required fire-resistance rating greater than 1 hour	4	3	See Note b	D-H-W-240	Not Permitted	4	Not Permitted	W-240
	3	3[a]	See Note b	D-H-W-180	Not Permitted	3	Not Permitted	W-180
	2	$1^1/_2$	100 sq. in.	≤100 sq. in. = D-H-90 >100 sq. in.= <u>D-H-T-90 or</u> D-H-W-90	Not Permitted	2	Not Permitted	W-120
	$1^1/_2$	$1^1/_2$	100 sq. in.	≤100 sq. in. = D-H-90 >100 sq. in.= <u>D-H-T-90 or</u> D-H-W-90	Not Permitted	$1^1/_2$	Not Permitted	W-90
Enclosures for shafts, interior exit stairways and interior exit ramps.	2	$1^1/_2$	100 sq. in.	≤100 sq. in. = D-H-90 > 100 sq. in.= <u>D-H-T-90 or</u> D-H-T-W-90	Not Permitted	2	Not Permitted	W-120

Horizontal exits in fire walls[e]	4	3	100 sq. in.	≤100 sq. in. = D-H-180 > 100 sq. in.=D-H-W-240	Not Permitted	4	Not Permitted	W-240
	3	3[a]	100 sq. in.	≤100 sq. in. = D-H-180 > 100 sq. in.=D-H-W-180	Not Permitted	3	Not Permitted	W-180
Fire barriers having a required fire-resistance rating of 1 hour: Enclosures forshafts,exit access stairways, exit access ramps, interior exit stairways and interior exit ramps; and exit passageway walls	1	1	100 sq. in.[c]	≤100 sq. in. = D-H-60 >100 sq. in.= D-H-T-60or D-H-T-W-60	Not Permitted	1	Not Permitted	W-60
					Fire protection			
Other fire barriers	1	$^3/_4$	Maximum size tested	D-H	$^3/_4$		D-H	
Fire partitions: Corridor walls	1	$^1/_{3^b}$	Maximum size tested	D-20	$^3/_{4^b}$		D-H-OH-45	
	0.5	$^1/_{3^b}$	Maximum size tested	D-20	$^1/_3$		D-H-OH-20	
Other fire partitions	1	$^3/_4$	Maximum size tested	D-H-45	$^3/_4$		D-H-45	
	0.5	$^1/_3$	Maximum size tested	D-H-20	$^1/_3$		D-H-20	

TYPE OF ASSEMBLY	REQUIRED WALL ASSEMBLY RATING (hours)	MINIMUM FIRE DOOR AND FIRE SHUTTER ASSEMBLY RATING (hours)	DOOR VISION PANEL SIZE[b]	FIRE-RATED GLAZING MARKING DOOR VISION PANEL[d]	MINIMUM SIDELIGHT/ TRANSOM ASSEMBLY RATING (hours)		FIRE-RATED GLAZING MARKING SIDELIGHT/TRANSOM PANEL	
					Fire protection	Fire resistance	Fire protection	Fire resistance
Exterior walls	3	$1^1/_2$	100 sq. in.[b]	≤100 sq. in. = D-H-90 >100 sq. in = D-H-W-90	Not Permitted	3	Not Permitted	W-180
	2	$1^1/_2$	100 sq. in.[b]	≤100 sq. in. = D-H-90 >100 sq. in.= D-H-W-90	Not Permitted	2	Not Permitted	W-120
					Fire protection			
	1	$^3/_4$	Maximum size tested	D-H-45	$^3/_4$		D-H-45	
Smoke barriers					**Fire protection**			
	1	$^1/_3$	Maximum size tested	D-20	$^3/_4$		D-H-OH-45	

For SI: 1 square inch = 645.2 mm.

a. Two doors, each with a fire protection rating of $1^1/_2$ hours, installed on opposite sides of the same opening in a fire wall, shall be deemed equivalent in fire protection rating to one 3-hour fire door.

b. Fire-resistance-rated glazing tested to ASTM E 119 in accordance with Section 716.2 shall be permitted, in the maximum size tested.

c. Except where the building is equipped throughout with an automatic sprinkler and the fire-rated glazing meets the criteria established in Section 716.5.5.

d. Under the column heading "Fire-rated glazing marking door vision panel," W refers to the fire-resistance rating of the glazing, not the frame.

e. See Section 716.5.8.1.2.1.

716.5.5 Doors in interior exit stairways and ramps and exit passageways. *Fire door* assemblies in interior exit stairways and ramps and exit passageways shall have a maximum transmitted temperature rise of not more than 450°F (250°C) above ambient at the end of 30 minutes of standard fire test exposure.

~~**Exception:** The maximum transmitted temperature rise is not required in buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2.~~

716.5.5.1 Glazing in doors. ~~Fire-protection-rated~~

Fire rated glazing ~~in excess of 100 square inches (0.065 m^2) is not permitted. Fire-resistance-rated glazing in excess of 100 square inches (0.065 m^2)~~ shall be permitted in ~~door~~ *fire doors in accordance with Table 716.5*. Listed ~~fire-resistance-rated~~fire rated glazing in a fire door shall have a maximum transmitted temperature rise in accordance with Section 716.5.5 when the fire door is tested in accordance with NFPA 252, UL 10B or UL 10C.

Exception: The maximum transmitted temperature rise is not required in buildings equipped throughout with an automatic

sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.

716.5.8.1.2 Fire-protection-rated glazing in door assemblies in fire walls and fire barriers rated greater than 1 hour. Fire-protection-rated glazing shall be prohibited in *fire walls* and *fire barriers* except in temperature rise doors in fire walls and fire barriers rated 2 hours or less that comply with Section 716.5.5.1, or as provided in Sections 716.5.8.1.2.1 and 716.5.8.1.2.2.

Reason: The code currently imposes unwarranted barriers to the use of fire-protection rated glazings in sizes greater than 100 sq.in. that, while not fire-resistance rated, are capable of blocking the passage of heat to enable a fire door tested to NFPA 252 (or UL 10B or UL 10C) to meet the 450º F temperature rise limitation found in Section 716.5.5 ("temperature rise doors").
The modifications proposed here are intended to permit the use of fire-protection rated glazing in sizes larger than 100 sq.in. if, and only if, the fire doors in which it is installed meets the 450º F temperature rise limitation found in Section 716.5.5.

The term "fire-rated glazing" is defined in Ch. 2 of the IBC to include both fire-protection rated and fire-resistance rated glazing. The proposed modification to Section 716.5.5.1, takes advantage of that definition to, simply, allow any "fire-rated glazing," whether fire-protection rated or fire-resistance rated, in temperature rise doors so long as it complies with the temperature rise restrictions of Section 716.5.5.

Consistent with this proposed change to Section 716.5.5.1, Table 716.5 is modified to permit complying fire-protection rated glazings found in temperature rise doors to be marked "D-H-T-xxx" (along with fire-resistance rated glazings found in temperature rise doors that are already being marked "D-H-W-xxx"). Likewise, Section 716.5.8.1.2 is also modified to accomodate the use of fire-protection rated glazings in temperature rise doors found in fire walls and fire barriers rated 2 hours or less.

Finally, the sprinklered building "exception" to Section 716.5.5 is moved to the end of the section, simply, to clarify that it applies to all of Section 716.5.5, including Section 716.5.5.1.

Cost Impact: Will not increase the cost of construction
Currently, only fire-resistance rated glazings are permitted in sizes greater than 100 sq.in. in temperature rise doors. Fire-resistance rated glazing is heavier and more expensive than fire-protection rated glazing. Allowing properly tested, listed and labeled fire-protection rated glazings in temperature rise doors will reduce the weight and the cost of such doors. Allowing fire-protection rated glazings in these applications will reduce, rather than increase, the cost of construction.

FS 81-15 : T716.5.5-ZAREMBA4757

FS 82-15

Table 716.5, 716.5.6

Proponent: Tom Zaremba, Roetzel & Andress, representing Alliance of Fire Rated Glazing Manufacturers (tzaremba@ralaw.com)

2015 International Building Code

Revise as follows:

TABLE 716.5
OPENING FIRE PROTECTION ASSEMBLIES, RATINGS AND MARKINGS

TYPE OF ASSEMBLY	REQUIRED WALL ASSEMBLY RATING (hours)	MINIMUM FIRE DOOR AND FIRE SHUTTER ASSEMBLY RATING (hours)	DOOR VISION PANEL SIZE[b]	FIRE-RATED GLAZING MARKING DOOR VISION PANEL[d]	MINIMUM SIDELIGHT/ TRANSOM ASSEMBLY RATING (hours)		FIRE-RATED GLAZING MARKING SIDELIGHT/TRANSOM PANEL	
					Fire protection	Fire resistance	Fire protection	Fire resistance
Fire walls and fire barriers having a required fire-resistance rating greater than 1 hour	4	3	See Note b	D-H-W-240	Not Permitted	4	Not Permitted	W-240
	3	3[a]	See Note b	D-H-W-180	Not Permitted	3	Not Permitted	W-180
	2	$1^1/_2$	100 sq. in.	≤100 sq. in. = D-H-90 >100 sq. in.= D-H-W-90	Not Permitted	2	Not Permitted	W-120
	$1^1/_2$	$1^1/_2$	100 sq. in.	≤100 sq. in. = D-H-90 >100 sq. in.=D-H-W-90	Not Permitted	$1^1/_2$	Not Permitted	W-90
Enclosures for shafts, interior exit stairways and interior exit ramps.	2	$1^1/_2$	100 sq. in.	≤100 sq. in. = D-H-90 > 100 sq. in.=D-H-T-W-90	Not Permitted	2	Not Permitted	W-120
Horizontal exits in fire walls[e]	4	3	100 sq. in.	≤100 sq. in. = D-H-180 > 100 sq. in.=D-H-W-240	Not Permitted	4	Not Permitted	W-240

	3	3[a]	100 sq. in.	≤100 sq. in. = D-H-180 > 100 sq. in.=D-H-W-180	Not Permitted	3	Not Permitted	W-180
Fire barriers having a required fire-resistance rating of 1 hour: Enclosures forshafts,exit access stairways, exit access ramps, interior exit stairways and interior exit ramps; and exit passageway walls	1	1	100 sq. in.[c]	≤100 sq. in. = D-H-60 >100 sq. in.= D-H-T-W-60	Not Permitted	1	Not Permitted	W-60
					Fire protection			
Other fire barriers	1	$^{3}/_{4}$	Maximum size tested	D-H	$^{3}/_{4}$		D-H	
Fire partitions: Corridor walls	1	$^{1}/_{3}$[b]	Maximum size tested	D-20	$^{3}/_{4}$[b]		D-H-OH-45	
	0.5	$^{1}/_{3}$[b]	Maximum size tested	D-20	$^{1}/_{3}$		D-H-OH-20	
Other fire partitions	1	$^{3}/_{4}$	Maximum size tested	D-H-45	$^{3}/_{4}$		D-H-45	
	0.5	$^{1}/_{3}$	Maximum size tested	D-H-20	$^{1}/_{3}$		D-H-20	

TYPE OF ASSEMBLY	**REQUIRED WALL ASSEMBLY RATING (hours)**	**MINIMUM FIRE DOOR AND FIRE SHUTTER ASSEMBLY RATING (hours)**	**DOOR VISION PANEL SIZE[b]**	**FIRE-RATED GLAZING MARKING DOOR VISION PANEL[d]**	**MINIMUM SIDELIGHT/ TRANSOM ASSEMBLY RATING (hours)**		**FIRE-RATED GLAZING MARKING SIDELIGHT/TRANSOM PANEL**	
					Fire protection	**Fire resistance**	**Fire protection**	**Fire resistance**

Exterior walls	3	$1^1/_2$	100 sq. in.[b]	≤100 sq. in. = D-H-90 >100 sq. in = D-H-W-90	Not Permitted	3	Not Permitted	W-180
	2	$1^1/_2$	~~100 sq. in.[b]~~ Maximum size tested	~~≤100 sq. in. = D-H-90 >100 sq. in.= D-H-W-90~~ D-H-90 or D-H-W-90	~~Not Permitted~~ 1 1/2	2	~~Not Permitted~~ D-H-OH-90	W-120
					Fire protection			
	1	$^3/_4$	Maximum size tested	D-H-45	$^3/_4$		D-H-45	
Smoke barriers					**Fire protection**			
	1	$^1/_3$	Maximum size tested	D-20	$^3/_4$		D-H-OH-45	

For SI: 1 square inch = 645.2 mm.

a. Two doors, each with a fire protection rating of $1^1/_2$ hours, installed on opposite sides of the same opening in a fire wall, shall be deemed equivalent in fire protection rating to one 3-hour fire door.

b. Fire-resistance-rated glazing tested to ASTM E 119 in accordance with Section 716.2 shall be permitted, in the maximum size tested.

c. Except where the building is equipped throughout with an automatic sprinkler and the fire-rated glazing meets the criteria established in Section 716.5.5.

d. Under the column heading "Fire-rated glazing marking door vision panel," W refers to the fire-resistance rating of the glazing, not the frame.

e. See Section 716.5.8.1.2.1.

716.5.6 Fire door frames with transom lights and sidelights. ~~Door~~
Fire-protection rated glazing shall be permitted in door frames with transom lights, sidelights or both, ~~shall be permitted~~ where a $^3/_4$-hour *fire protection rating* or less is required and in 2-hour fire-resistance rated exterior walls in accordance with Table 716.5. *Fire door* frames with transom lights, sidelights, or both, installed with fire-resistance-rated glazing tested as an assembly in accordance with ASTM E 119 or UL 263 shall be permitted where a fire protection rating exceeding $^3/_4$ hour is required in accordance with Table 716.5.

Reason: This proposal is intended to correct an inconsistency in the way fire windows are treated in comparison to transoms and sidelights found in the same frame with a fire door. In that regard, Table 716.6 currently allows fire windows in 2-hour exterior walls to use either 90-minute fire-protection rated glass - or - fire-resistance rated glass with a fire rating equal to that of the exterior wall. However, if a fire window is in the same frame as a fire door, (and is, therefore, called a transom or sidelight), Section 716.5.6 prohibits the use of fire-protection rated glass and requires, instead, fire-resistance rated glass.

The only real difference between a "fire window" and a "transom" or a "sidelight" is whether it is, or is not, in the same frame as a fire door. This is evident in Section 716.5.3.2. It specifies that "[i]n a 20- minute fire door assembly, the glazing material in the door itself shall have a minimum fire-protection-rated glazing of 20 minutes and shall be exempt from the hose stream test." However, it goes on to provide that glazing in the transom and sidelights of the assembly are to be tested as a fire window, "including the hose stream test, in accordance with Section 716.6."

It should be noted, that, according to Table 716.5, doors with sidelights and transoms in the same frame are required to be tested to both the fire door test standard, NFPA 252, and the fire window test stardard, NFPA 257. And, that is exactly what is being proposed here.

The adoption of this proposal will, simply, allow the same type of glazing that is currently allowed in fire windows to be used in transoms and sidelights in 2-hour exterior walls.

Cost Impact: Will not increase the cost of construction

Currently, only fire-resistant glazing is permitted in transoms and sidelights in 2-hour rated exterior walls. This proposal would permit the use of 90-minute fire-protection rated glazing in those applications, the same type of glass currently allowed in fire windows in such exterior walls. Fire-resistance rated glazing is significantly heavier and more expensive than fire-protection rated glazing. Allowing both fire-resistance rated or fire-protection rated glazing in these applications, expands the choices of architect/specifiers and the number of products available for these types of applications. If adopted, this proposal will reduce, not increase, the cost of construction.

FS 82-15 : T716.5.6-ZAREMBA5234

FS 83-15

Table 716.5, 716.5.8.1.2, 716.5.8.1.2.1, 716.5.8.1.2.2

Proponent: Tom Zaremba, Roetzel & Andress, representing Alliance of Fire Rated Glazing Manufacturers (tzaremba@ralaw.com)

2015 International Building Code

Revise as follows:

TABLE 716.5
OPENING FIRE PROTECTION ASSEMBLIES, RATINGS AND MARKINGS

TYPE OF ASSEMBLY	REQUIRED WALL ASSEMBLY RATING (hours)	MINIMUM FIRE DOOR AND FIRE SHUTTER ASSEMBLY RATING (hours)	DOOR VISION PANEL SIZE[b]	FIRE-RATED GLAZING MARKING DOOR VISION PANEL[d]	MINIMUM SIDELIGHT/ TRANSOM ASSEMBLY RATING (hours)		FIRE-RATED GLAZING MARKING SIDELIGHT/TRANSOM PANEL	
					Fire protection	Fire resistance	Fire protection	Fire resistance
Fire walls and fire barriers having a required fire-resistance rating greater than 1 hour	4	3	100 sq. in. ~~See Note b~~	≤100 sq. in. = D-H-180 >100 sq. in.= D-H-W-240	Not Permitted	4	Not Permitted	W-240
	3	3[a]	100sq. in. ~~See Note b~~	≤100 sq. in. = D-H-180 >100 sq. in.= D-H-W-180	Not Permitted	3	Not Permitted	W-180
	2	$1^1/_2$	100 sq. in.	≤100 sq. in. = D-H-90 >100 sq. in.= D-H-W-90	Not Permitted	2	Not Permitted	W-120
	$1^1/_2$	$1^1/_2$	100 sq. in.	≤100 sq. in. = D-H-90 >100 sq. in.=D-H-W-90	Not Permitted	$1^1/_2$	Not Permitted	W-90
Enclosures for shafts, interior exit stairways and interior exit ramps.	2	$1^1/_2$	100 sq. in.	≤100 sq. in. = D-H-90 > 100 sq. in.=D-H-T-W-90	Not Permitted	2	Not Permitted	W-120

Horizontal exits in fire walls[e]	4	3	100 sq. in.	≤100 sq. in. = D-H-180 > 100 sq. in.=D-H-W-240	Not Permitted	4	Not Permitted	W-240
	3	3[a]	100 sq. in.	≤100 sq. in. = D-H-180 > 100 sq. in.=D-H-W-180	Not Permitted	3	Not Permitted	W-180
Fire barriers having a required fire-resistance rating of 1 hour: Enclosures forshafts,exit access stairways, exit access ramps, interior exit stairways and interior exit ramps; and exit passageway walls	1	1	100 sq. in.[c]	≤100 sq. in. = D-H-60 >100 sq. in.= D-H-T-W-60	Not Permitted	1	Not Permitted	W-60
					Fire protection			
Other fire barriers	1	3/4	Maximum size tested	D-H	3/4		D-H	
Fire partitions: Corridor walls	1	1/3[b]	Maximum size tested	D-20	3/4[b]		D-H-OH-45	
	0.5	1/3[b]	Maximum size tested	D-20	1/3		D-H-OH-20	
Other fire partitions	1	3/4	Maximum size tested	D-H-45	3/4		D-H-45	
	0.5	1/3	Maximum size tested	D-H-20	1/3		D-H-20	

TYPE OF ASSEMBLY	REQUIRED WALL ASSEMBLY RATING (hours)	MINIMUM FIRE DOOR AND FIRE SHUTTER ASSEMBLY RATING (hours)	DOOR VISION PANEL SIZE[b]	FIRE-RATED GLAZING MARKING DOOR VISION PANEL[d]	MINIMUM SIDELIGHT/ TRANSOM ASSEMBLY RATING (hours)		FIRE-RATED GLAZING MARKING SIDELIGHT/TRANSOM PANEL	
					Fire protection	Fire resistance	Fire protection	Fire resistance
Exterior walls	3	$1^1/_2$	100 sq. in.[b]	≤100 sq. in. = D-H-90 >100 sq. in = D-H-W-90	Not Permitted	3	Not Permitted	W-180
	2	$1^1/_2$	100 sq. in.[b]	≤100 sq. in. = D-H-90 >100 sq. in.= D-H-W-90	Not Permitted	2	Not Permitted	W-120
					Fire protection			
	1	$^3/_4$	Maximum size tested	D-H-45	$^3/_4$		D-H-45	
Smoke barriers					**Fire protection**			
	1	$^1/_3$	Maximum size tested	D-20	$^3/_4$		D-H-OH-45	

For SI: 1 square inch = 645.2 mm.

a. Two doors, each with a fire protection rating of $1^1/_2$ hours, installed on opposite sides of the same opening in a fire wall, shall be deemed equivalent in fire protection rating to one 3-hour fire door.

b. Fire-resistance-rated glazing tested to ASTM E 119 in accordance with Section 716.2 shall be permitted, in the maximum size tested.

c. Except where the building is equipped throughout with an automatic sprinkler and the fire-rated glazing meets the criteria established in Section 716.5.5.

d. Under the column heading "Fire-rated glazing marking door vision panel," W refers to the fire-resistance rating of the glazing, not the frame.

e. See Section 716.5.8.1.2.1.

716.5.8.1.2 Fire-protection-rated glazing in door assemblies in fire walls and fire barriers rated greater than 1 hour. Fire-protection-rated glazing shall be ~~prohibited~~ permitted in *fire walls* and *fire barriers* ~~except~~ as provided in Sections 716.5.8.1.2.1 and 716.5.8.1.2.2.

716.5.8.1.2.1 ~~Horizontal exits.~~Fire walls Fire-protection-rated glazing shall be permitted ~~as vision panels~~ in *~~self-closing~~ ~~swinging~~fire ~~door~~doors* ~~assemblies serving as horizontal exits~~ in *fire walls* where limited to 100 square inches (0.065 m^2) ~~with no dimension exceeding 10 inches (0.3 mm).~~

716.5.8.1.2.2 Fire barriers. Fire-protection-rated glazing shall be permitted in *fire doors* ~~having a $1^1/_2$ hour *fire protection rating*~~ intended for installation in *fire barriers*, where limited to 100 square inches (0.065 m^2).

Reason: The code currently prohibits the use of fire-protection rated glazing as vision panels in 3-hour fire doors permitted in 3 and 4-hour fire walls and fire barriers. There are numerous fire-protection rated glazing products listed as 100 sq. in. vision panels for use in 3-hour fire doors. The code currently allows fire-resistance rated glazing in these doors in unlimited size. Nothing in this proposal would change that. Instead, adopting this proposal would also permit the use of fire-protection rated glazing, but limited in size to 100 sq. in. While fire-resistance rated glazing offers

protection against thermal transfer, it will do so be becoming opaque. Fire-protection rated glazing, on the other hand, will remain transparent, enabling fire fighters and first responders to see what is on the other side of the fire door, while at the same time limiting thermal transfer by reason of the 100 sq. in. size limitation associated with its use.

Adopting this proposal will provide architect/specifiers with significantly greater flexibility with no loss of safety. Currently, if the architect/specifier determines, for whatever reason, that the use of fire-resistance rated glazing in these applications is inappropriate, the only other choice would be to use a fire door with no view panel. If this proposal is adopted, a 100 sq. in. view panel would be an available option using listed and labeled fire-protection rated glass.

Consitent with changes to Section 716.5.8.1.2, Table 716.5 would also be changed to limit "door and vision panel size" to 100 sq. in. where fire-protection rated glazing is used in fire walls and fire barriers where 3-hour fie door and fire shutter assemblies are allowed. This would allow glazings in these applications to be marked either "D-H-180" when fire-protection rated glazing is used in 3 or 4 hour fire-resistance rated walls - or - "D-H-W-240" when fire-resistance rated glazing is used in 4-hour fire-resistance walls and "D-H-W-180" when used in 3-hour fire-resistance rated walls.

Cost Impact: Will not increase the cost of construction
Permitting the use of fire-protection glazing will reduce, not increase, the cost of construction. Fire-protection rated glazing is lighter and less expensive than fire-resistance rated glazing.

FS 83-15 : T716.5.8.1.2-ZAREMBA5366

FS 84-15

Table 716.5

Proponent: Amber Armstrong, City of Edmond (Oklahoma), representing self (amber.armstrong@edmondok.com)

2015 International Building Code

Revise as follows:

TABLE 716.5
OPENING FIRE PROTECTION ASSEMBLIES, RATINGS AND MARKINGS

TYPE OF ASSEMBLY	REQUIRED WALL ASSEMBLY RATING (hours)	MINIMUM FIRE DOOR AND FIRE SHUTTER ASSEMBLY RATING (hours)	DOOR VISION PANEL SIZE[b]	FIRE-RATED GLAZING MARKING DOOR VISION PANEL[d]	MINIMUM SIDELIGHT/ TRANSOM ASSEMBLY RATING (hours)		FIRE-RATED GLAZING MARKING SIDELIGHT/TRANSOM PANEL	
					Fire protection	Fire resistance	Fire protection	Fire resistance
Exterior walls	3	$1^1/_2$	100 sq. in.[b]	≤100 sq. in. = D-H-90 >100 sq. in = D-H-W-90	Not Permitted	3	Not Permitted	W-180
	2	$1^1/_2$	100 sq. in.[b]	≤100 sq. in. = D-H-90 >100 sq. in.= D-H-W-90	Not Permitted	2	Not Permitted	W-120
					Fire protection			
	1	$^3/_4$	Maximum size tested	D-H-45	$^3/_4$		D-H-45	
Smoke barriers					**Fire protection**			
	1	$^1/_3$	Maximum size tested	D-20	$^3/_4$		D-H-OH-45	

TYPE OF ASSEMBLY	REQUIRED WALL ASSEMBLY RATING (hours)	MINIMUM FIRE DOOR AND FIRE SHUTTER ASSEMBLY RATING (hours)	DOOR VISION PANEL SIZE[b]	FIRE-RATED GLAZING MARKING DOOR VISION PANEL[d]	MINIMUM SIDELIGHT/ TRANSOM ASSEMBLY RATING (hours)		FIRE-RATED GLAZING MARKING SIDELIGHT/TRANSOM PANEL	
					Fire protection	Fire resistance	Fire protection	Fire resistance

Fire walls and fire barriers having a required fire-resistance rating greater than 1 hour	4	3	See Note b	D-H-W-240	Not Permitted	4	Not Permitted	W-240
	3	3[a]	See Note b	D-H-W-180	Not Permitted	3	Not Permitted	W-180
	2	$1^1/_2$	100 sq. in.	≤100 sq. in. = D-H-90 >100 sq. in.= D-H-W-90	Not Permitted	2	Not Permitted	W-120
	$1^1/_2$	$1^1/_2$	100 sq. in.	≤100 sq. in. = D-H-90 >100 sq. in.=D-H-W-90	Not Permitted	$1^1/_2$	Not Permitted	W-90
Fire walls having a required fire-resistance rating of 1 hour	1	1	100 sq. in.	≤100 sq. in. = D-H-60 >100 sq. in.= D-H-W-60	Not Permitted	1	Not Permitted	W-60
Enclosures for shafts, interior exit stairways and interior exit ramps.	2	$1^1/_2$	100 sq. in.	≤100 sq. in. = D-H-90 > 100 sq. in.=D-H-T-W-90	Not Permitted	2	Not Permitted	W-120
Horizontal exits in fire walls[e]	4	3	100 sq. in.	≤100 sq. in. = D-H-180 > 100 sq. in.=D-H-W-240	Not Permitted	4	Not Permitted	W-240
	3	3[a]	100 sq. in.	≤100 sq. in. = D-H-180 > 100 sq. in.=D-H-W-180	Not Permitted	3	Not Permitted	W-180

Fire barriers having a required fire-resistance rating of 1 hour: Enclosures forshafts,exit access stairways, exit access ramps, interior exit stairways and interior exit ramps; and exit passageway walls	1	1	100 sq. in.[c]	≤100 sq. in. = D-H-60 >100 sq. in.= D-H-T-W-60	Not Permitted	1	Not Permitted	W-60
					Fire protection			
Other fire barriers	1	$^3/_4$	Maximum size tested	D-H	$^3/_4$		D-H	
Fire partitions: Corridor walls	1	$^1/_{3}$[b]	Maximum size tested	D-20	$^3/_{4}$[b]		D-H-OH-45	
	0.5	$^1/_{3}$[b]	Maximum size tested	D-20	$^1/_3$		D-H-OH-20	
Other fire partitions	1	$^3/_4$	Maximum size tested	D-H-45	$^3/_4$		D-H-45	
	0.5	$^1/_3$	Maximum size tested	D-H-20	$^1/_3$		D-H-20	

For SI: 1 square inch = 645.2 mm.

a. Two doors, each with a fire protection rating of $1^1/_2$ hours, installed on opposite sides of the same opening in a fire wall, shall be deemed equivalent in fire protection rating to one 3-hour fire door.

b. Fire-resistance-rated glazing tested to ASTM E 119 in accordance with Section 716.2 shall be permitted, in the maximum size tested.

c. Except where the building is equipped throughout with an automatic sprinkler and the fire-rated glazing meets the criteria established in Section 716.5.5.

d. Under the column heading "Fire-rated glazing marking door vision panel," W refers to the fire-resistance rating of the glazing, not the frame.

e. See Section 716.5.8.1.2.1.

Reason: This code change is intended to provide requirements for opening protection assemblies in 1-hour fire walls.
According to IBC Section 706.2, "fire walls designed and constructed in accordance with NFPA 221 shall be deemed to comply with this section." In NFPA 221 2015 edition, requirements for a specific type of fire wall called a Double Fire Wall are detailed. A Double Fire Wall consists of two walls, parallel to each other which have no connections between them and are independently supported by structural elements on either side. According to Section 4.5 and Table 4.5, when each wall of a double fire wall assembly is supported by structural elements which have a fire-resistance rating less than that required for the wall, the fire-resistance rating of each wall may be reduced by one hour.

For example, a building is required to be divided by a 2-hour fire wall. The designer chooses to construct two walls, back-to-back as opposed to a single fire wall. Each wall is supported by a structural frame which does not have a fire-resistance rating. Per NFPA 221, Table 4.5, each wall of the

double fire wall assembly is permitted to have a fire-resistance rating of 1-hour. NFPA 221 Section 6.10.3 requires that openings in each wall which comprises the double fire wall be protected separately. Neither NFPA 221~~, Table 4.8.2~~nor IBC Table 716.5 list the opening requirements for a 1-hour fire wall.

There are many conditions when construction of two independent walls is a more desirable option than a single fire wall. Openings between the "separate" buildings are common. With no direction on a fire-resistance rating for that opening protection, the designer does not know what to provide, and the code official must determine the appropriate rating. This decision is subjective based on each code official and will not be consistent from jurisdiction to jurisdiction.

Cost Impact: Will not increase the cost of construction
This change will not increase the cost of construction because the fire-resistance rating of 60-minutes is less than the minimum stated for any fire wall.

FS 84-15 : T716.5-ARMSTRONG5679

FS 85-15

716.5.1

Proponent: Adolf Zubia, representing Fire Code Action Committee (fcac@iccsafe.org)

2015 International Building Code

Revise as follows:

716.5.1 Side-hinged or pivoted swinging doors. *Fire door* assemblies with side-hinged and pivoted swinging doors shall be tested in accordance with NFPA 252 or UL 10C. ~~After 5 minutes into~~ For tests conducted in accordance with NFPA 252, the fire test shall be conducted using the ~~NFPA 252 test, the neutral~~positive pressure ~~level~~method specified in the ~~furnace shall be established at 40 inches (1016 mm) or less above the sill~~standard.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. The Fire-CAC has held 10 open meetings and numerous Regional Work Group and Task Group meetings and conference calls for the current code development cycle which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx?usertoken={token}&Site=icc
NFPA 252 describes two fire test procedures, a positive pressure test and a "test conducted at other than positive pressure" (a neutral pressure test). The current description in Section 716.5.1 does not accurately reflect the required positive pressure conditions described in the current edition of NFPA 252. As such, this proposal is intended to correct that situation by simply requiring the test to be conducted in accordance with the positive pressure method specified in the standard. UL 10C only includes a positive pressure test, so there is no need to mention pressure conditions for it.

The FCAC opening protective work group included interested industry and testing lab representatives working together to make this section more user friendly. The work group unanimously agreed on a number of proposed changes to IBC Section 716, including this one.

Cost Impact: Will not increase the cost of construction
This code change proposal only clarifies references to testing criteria.

FS 85-15 : 716.5.1-ZUBIA4204

FS 86-15

716.5.1.1 (New), 716.5.3.1

Proponent: John Woestman, Kellen Company, representing Builders Hardware Manufacturers Association (BHMA) (jwoestman@kellencompany.com)

2015 International Building Code

Add new text as follows:

716.5.1.1 Smoke and draft control. Fire door assemblies shall meet the requirements for a smoke and draft control door assembly tested in accordance with UL 1784. The air leakage rate of the door assembly shall not exceed 3.0 cubic feet per minute per square foot (0.01524 m3/s • m2) of door opening at 0.10 inch (24.9 Pa) of water for both the ambient temperature and elevated temperature tests. Louvers shall be prohibited. Installation of smoke doors shall be in accordance with NFPA 105.

Revise as follows:

716.5.3.1 Smoke and draft control. ~~*Fire door*~~
Door assemblies in corridors and smoke barriers shall ~~meet~~comply with the~~ requirements for a~~ smoke and draft control door assembly ~~tested~~requirements in ~~accordance with UL 1784. The air leakage rate of the door assembly shall not exceed 3.0 cubic feet per minute per square foot (0.01524 $m^3/s \cdot m^2$) of door opening at 0.10 inch (24.9 Pa) of water for both the ambient temperature and elevated temperature tests. Louvers shall be prohibited. Installation of smoke doors shall be in accordance with NFPA 105.~~Section 716.5.1.1.

Reason: The IBC currently does not require fire-rated doors to also control smoke as required for smoke and draft control door assemblies. This could be the intent of the code. Or, this could be a technical oversight of the code. This proposal attempts to address this question. It seems logical that fire rated doors should also perform as smoke and draft control doors as smoke is the most common cause of fatalities from a fire.
BHMA recommends the IBC should require all side-hinged doors required to be fire-rated doors to also perform to the requirements of a smoke and draft control door. This proposal moves the text of Section 716.5.3.1 to apply to side-hinged or pivoted swinging doors.

The new text proposed for Section 716.5.3.1 maintains the current requirements of 716.5.3 for door assemblies in corridors and smoke barriers. This sentence is needed as the charging language of 716.5 requires compliance to Sections 716.5.1, 716.5.2 **or** 716.5.3 (emphasis added).

Cost Impact: Will increase the cost of construction
May increase the cost of construction. It seems logical that fire rated doors should also perform as smoke and draft control doors as smoke is the most common cause of fatalities from a fire.

FS 86-15 : 716.5.1.1 (New)-WOESTMAN5515

FS 87-15

716.5.2

Proponent: Adolf Zubia, representing Fire Code Action Committee (fcac@iccsafe.org)

2015 International Building Code

Revise as follows:

716.5.2 Other types of assemblies. *Fire door* assemblies with other types of doors, including swinging elevator doors, horizontal sliding fire door assemblies, and fire shutter assemblies, bottom and side-hinged chute intake doors, and top-hinged chute discharge doors, shall be tested in accordance with NFPA 252 or UL 10B. ~~The pressure~~ For tests conducted in accordance with NFPA 252, the neutral pressure plane in the furnace shall be maintained as nearly equal to the atmospheric pressure as possible~~. Once established,~~ at the ~~pressure shall be maintained during~~top of the ~~entire test period.~~door, as specified in the standard.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. The Fire-CAC has held 10 open meetings and numerous Regional Work Group and Task Group meetings and conference calls for the current code development cycle which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx?usertoken={token}&Site=icc
NFPA 252 describes two fire test procedures, a positive pressure test and a "test conducted at other than positive pressure" (i.e. a neutral pressure test). Currently Section 716.5.1 defines the positive pressure conditions for NFPA 252 tests for the side-hinged and pivoted swinging doors. But Section 716.5.2 does not define this for the other types of assemblies. This proposal provides that clarification. UL 10B only includes a neutral pressure test, so there is no need to mention pressure conditions for it.

The FCAC opening protective work group included interested industry and testing lab representatives working together to make this section more user friendly. The work group unanimously agreed on a number of proposed changes to IBC Section 716, including this one.

Cost Impact: Will not increase the cost of construction
This code change proposal only clarifies references to testing criteria.

FS 88-15

716.5.2

Proponent: Joseph Hetzel, representing Door & Access Systems Manufacturers Association (Jhetzel@thomasamc.com)

2015 International Building Code

Revise as follows:

716.5.2 Other types of assemblies. *Fire door* assemblies with other types of doors, including swinging elevator doors, horizontal sliding fire ~~door assemblies~~doors, ~~and~~rolling steel fire ~~shutter assemblies~~doors, fire shutters, bottom and side-hinged chute intake doors, and top-hinged chute discharge doors, shall be tested in accordance with NFPA 252 or UL 10B. The pressure in the furnace shall be maintained as nearly equal to the atmospheric pressure as possible. Once established, the pressure shall be maintained during the entire test period.

Reason: Rolling steel fire doors should be included in the list since they have been successfully required to be tested and listed to either NFPA 252 or UL 10B for many years. The other changes are typographical for consistency within the list of door types.

Cost Impact: Will not increase the cost of construction
None.The language change has no effect on the product and thus no effect on construction cost, thus no study is needed.

FS 89-15

716.5.3.1.1 (New)

Proponent: John Woestman, representing Builders Hardware Manufacturers Association (BHMA) (jwoestman@kellencompany.com)

2015 International Building Code

Add new text as follows:

716.5.3.1.1 Terminated stops. On doors required by this code to be smoke and draft control doors, stops on door frames shall be permitted to terminate not more than 6" above the floor.

Exception: Section 716.5.3.1.1 shall not apply to smoke and draft control doors required by Sections 3006.3, 3007.6.3, and 3008.6.3.

Reason: Many doors installed in hollow metal frames in health care facilities have terminated stops. These terminated stops are also known as "hospital stops" or "sanitary stops." A terminated stop is a factory modification to a door frame, where the stop is terminated above the floor. The bottom of the stop is closed at a 45-degree or 90-degree angle. The purpose of a terminated stop is to make it easier to clean that area of the floor without the extra corners to catch debris or pathogens, and to avoid getting cart or bed wheels caught on the stop.
The code is silent regarding terminated stops. This proposal provides guidance where terminated stops would be allowed, and not allowed, by the code. This proposal is consistent with the testing requirements of UL 1784.

Cost Impact: Will not increase the cost of construction
No mandatory costs. Door frames with terminated stops may have a slight increase in cost compared to door frames with full length stops. However, installation of door frames with terminated stops is optional.

FS 90-15

716.5.3.1

Proponent: Adolf Zubia, representing Fire Code Action Committee (fcac@iccsafe.org)

2015 International Building Code

Revise as follows:

716.5.3.1 Smoke and draft control. *Fire door* assemblies ~~shall meet the requirements for a~~ that also serve as smoke and draft control ~~door assembly~~ assemblies shall be tested in accordance with UL 1784. The air leakage rate of the door assembly shall not exceed 3.0 cubic feet per minute per square foot (0.01524 $m^3/s \cdot m^2$) of door opening at 0.10 inch (24.9 Pa) of water for both the ambient temperature and elevated temperature tests. Louvers shall be prohibited. Installation of smoke doors shall be in accordance with NFPA 105.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. The Fire-CAC has held 10 open meetings and numerous Regional Work Group and Task Group meetings and conference calls for the current code development cycle which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at:http://www.iccsafe.org/cs/CAC/Pages/default.aspx?usertoken={token}&Site=icc
Editorial change only. The FCAC opening protective work group included interested industry and testing lab representatives working together to make this section more user friendly. The work group unanimously agreed on a number of proposed changes to IBC Section 716, including this one.

Cost Impact: Will not increase the cost of construction
This code change proposal will not increase the cost of construction because they are Editorial changes only.

FS 91-15

716.5.8

Proponent: Adolf Zubia, representing Fire Code Action Committee (fcac@iccsafe.org)

2015 International Building Code

Revise as follows:

716.5.8 Glazing material. Fire-rated glazing ~~and fire-resistance-rated glazing~~ conforming to the opening protection requirements in Section 716.5 shall be permitted in *fire door* assemblies.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. The Fire-CAC has held 10 open meetings and numerous Regional Work Group and Task Group meetings and conference calls for the current code development cycle which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at:http://www.iccsafe.org/cs/CAC/Pages/default.aspx?usertoken={token}&Site=icc
The definition of the phrase *fire-rated glazing* is "Glazing with either a *fire protection rating* or a *fire-resistance rating*." As such, the reference to *fire-resistance-rated* glazing in Section 716.5.8 is redundant.

The FCAC opening protective work group included interested industry and testing lab representatives working together to make this section more user friendly. The work group unanimously agreed on a number of proposed changes to IBC Section 716, including this one.

Cost Impact: Will not increase the cost of construction
This code change proposal will not increase the cost of constructio because they are editorial changes only.

FS 92-15

716.5.8.1.2.1

Proponent: Adolf Zubia, representing Fire Code Action Committee (fcac@iccsafe.org)

2015 International Building Code

Revise as follows:

716.5.8.1.2.1 Horizontal exits. Fire-protection-rated glazing shall be permitted as vision panels in *self-closing* swinging *fire door* assemblies serving as horizontal exits in *fire walls* where limited to 100 square inches (0.065 m^2) ~~with no dimension exceeding 10 inches (0.3 mm)~~.

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

This code change deletes the 10 inch maximum dimension applied to 100 square inch vision panels limits for swinging doors in horizontal exits. The 10 inch dimension limit is not applied to any other 100 square inch maximum glazing size references in Section 716, including Sections 716.5.5.1, 716.5.8.1.2.2 and Table 716.5. The 10 inch dimension limit may also result in a conflict with ADA Standards for Accessible Design, which specifies glazing height requirements for doors and sidelights adjacent to doors.

Deleting the 10 inch maximum dimension limit for horizontal exits will allow for a fire door vision panel that meets ADA 43 inch height limits and the goal of accessible design.

The FCAC opening protective work group included interested industry and testing lab representatives working together to make this section more user friendly. The work group unanimously agreed on a number of proposed changes to IBC Section 716, including this one.

Cost Impact: Will not increase the cost of construction
If anything this proposal allows greater construction options.

FS 93-15

716.5.9.1

Proponent: Joseph Hetzel, Thomas Associates, Inc. representing DASMA, representing Door & Access Systems Manufacturers Association (Jhetzel@thomasamc.com)

2015 International Building Code

Revise as follows:

716.5.9.1 Latch required. Unless otherwise specifically permitted, single *side-hinged swinging fire doors* and both leaves of pairs of side-hinged swinging *fire doors* shall be provided with an active latch bolt that will secure the door when it is closed.

Reason: Clarification is needed to show that side-hinged swinging fire doors, and no other types of fire doors, are being addressed in these provisions.

Cost Impact: Will not increase the cost of construction
None.The language change has no effect on the product and thus no effect on construction cost, thus no study is needed.

FS 94-15

202 (New), 716.5.9.2, 716.5.9.3 (New)

Proponent: John Woestman, Kellen Company, representing Builders Hardware Manufacturers Association (BHMA) (jwoestman@kellencompany.com)

2015 International Building Code

Add new definition as follows:

SECTION 202 DEFINITIONS

DELAYED ACTION CLOSER. Self-closing device that incorporates a delay prior to the intiation of closing. Delayed action closers are mechanical devices with an adjustable delay.

716.5.9.2 Automatic-closing fire door assemblies. Automatic-closing *fire door* assemblies shall be *self-closing* in accordance with NFPA 80.

Add new text as follows:

716.5.9.3 Delayed action closers Doors required to be self-closing and not requried to be automatic closing shall be permitted to be equipped with delayed action closers with not more than 60 seconds delay before the door is closed.

Reason: The IBC is silent regarding allowing delayed action closers, and applicable requirements.
Delayed action closer functionality is commonly required and / or desired for closers installed on doors. Example: delayed action closers are frequently used in schools to allow a teacher to lead a group of students from one area of the building to another. A door with a delayed action closer allows the teacher with a group of students to pass through the door before it closes, helping to keep the group intact.

Unlike automatic-closing doors which are commonly held in an open position, self-closing doors which are not automatic-closing doors are normally in a closed position unless being used. Thus, in a fire situation, the doors within the scope of this proposal would be closed except when being used and during the relatively brief delay caused by the delayed action closer.

The delay of delayed action closers is usually adjustable. A maximum 60 seconds delay seems reasonable for a common application in schools.

For reference; IBC definition: SELF-CLOSING. As applied to a fire door or other opening protective, means equipped with a device that will ensure closing after having been opened.

Cost Impact: Will not increase the cost of construction
None. Delayed action closers are not currently required or prohibited by the code. This proposal provides appropriate guidance where delayed action closers are installed.

FS 94-15 : 716.5.9.2-WOESTMAN5525

FS 95-15

716.5.9.3

Proponent: John Williams, CBO, Chair, representing Adhoc Health Care Committee (AHC@iccsafe.org); Adolf Zubia, Chair, reprsenting Fire Code Action Committee (fcac@iccsafe.org)

2015 International Building Code

Revise as follows:

716.5.9.3 Smoke-activated doors. Automatic-closing doors installed in the following locations shall be permitted to have hold-open devices. Doors shall automatically close~~automatic-closing~~ by the actuation of smoke detectors installed in accordance with Section 907.3 or by loss of power to the smoke detector or hold-open device. Doors that are automatic-closing by smoke detection shall not have more than a 10-second delay before the door starts to close after the smoke detector is actuated.~~:~~ Automatic-closing doors that protect openings installed in the following locations shall comply with this section:

~~1. Doors installed across a corridor.~~
~~2. Doors installed in the enclosures of exit access stairways and ramps in accordance with Sections 1019 and 1023, respectively.~~
~~3. Doors that protect openings in exits or corridors required to be of fire-resistance-rated construction.~~
1.~~4. Doors that protect openings~~ in walls ~~that are capable of resisting the passage of smoke~~ that seperate incidental uses in accordance with Section 509.4.
2.~~7. Doors installed~~ In *fire ~~wall~~ walls* in accordance with Section 706.8.
3. In *fire barriers* in accordance with Section 707.6
4.~~6. Doors installed~~ In *fire partitions* in accordance with Section 708.6.
5.~~Doors installed~~ In *smoke barriers* in accordance with Section 709.5.
6.~~12. Doors installed~~ In smoke partitions in accordance with Section 710.5.2.3.
7.~~8. Doors installed~~ In shaft enclosures in accordance with Section 713.7.
8.~~9. Doors installed~~ In waste and linen chutes, discharge openings and access and discharge rooms in accordance with Section 713.13. Loading doors installed in waste and linen chutes shall meet the requirements of Sections 716.5.9 and 716.5.9.1.1.
~~10 Doors installed in the walls for compartmentation of underground buildings in accordance with Section 405.4.2.~~
~~11. Doors installed in the elevator lobby walls of underground buildings in accordance with Section 405.4.3.~~

Reason: The intent of this proposal is clarification. Current items 1, 2, 3, 10 and 11 are addressed in the items specific to smoke barriers, shaft enclosures, fire barriers and smoke barriers respectively. They should be deleted as redundant. Current items 4 through 9 and 12 are reworded to be consistent and to be technically correct. Fire barriers were added to the list to address doors that protect openings in exit enclosures, vertical shafts, incidental uses, etc. Items are proposed to be renumbered to be in the same order as they are found in the code.

The ICC Ad Hoc Committee on Healthcare (AHC) has just completed its 4th year. The AHC was established by the ICC Board to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. This is a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Information on the AHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the AHC effort can be downloaded from the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx.

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

Cost Impact: Will not increase the cost of construction
This proposal is a clarification of requirements; therefore, there is no increase in cost.

FS 96-15

716.5.9.4

Proponent: Joseph Hetzel, representing Door & Access Systems Manufacturers Association (Jhetzel@thomasamc.com)

2015 International Building Code

Revise as follows:

716.5.9.4 Doors in pedestrian ways. ~~Vertical sliding~~
Sliding or ~~vertical~~ rolling steel *fire doors* in openings through which pedestrians travel shall be heat activated or activated by smoke detectors with alarm verification.

Reason: Sliding fire doors can operate horizontally, thus the "vertical" descriptor is not needed because it is too limiting. Rolling steel fire doors always operate vertically by definition, so the "vertical" descriptor is redundant and unnecessary.

Cost Impact: Will not increase the cost of construction
None.The language change has no effect on the product and thus no effect on construction cost, thus no study is needed.

FS 97-15

Table 716.6, 716.6.7.1

Proponent: Robert Davidson, Davidson Code Concepts, LLC, representing SAFTI FIRST (rjd@davidsoncodeconcepts.com)

2015 International Building Code

TABLE 716.6
FIRE WINDOW ASSEMBLY FIRE PROTECTION RATINGS

TYPE OF WALL ASSEMBLY	REQUIRED WALL ASSEMBLY RATING (hours)	MINIMUM FIRE WINDOW ASSEMBLY RATING (hours)	FIRE-RATED GLAZING MARKING
Interior walls			
Fire walls	All	NP[a]	W-XXX[b]
Fire barriers	>1 1	NP[a] NP[a]	W-XXX[b] W-XXX[b]
Incidental use areas (Section 707.3.7), Mixed occupancy separations (Section 707.3.9), Atrium separations (Section 707.3.6)	1	3/4	OH-45 or W-60
Fire partitions	1 0.5	3/4 1/3	OH-45 or W-60 OH-20 or W-30
Smoke barriers	1	3/4	OH-45 or W-60
Exterior walls	>1 1 0.5	1 1/2 3/4 1/3	OH-90 or W-XXX[b] OH-45 or W-60 OH-20 or W-30
Party wall	All	NP	Not Applicable

NP = Not Permitted.

a. Not permitted except fire-resistance-rated glazing assemblies tested to ASTM E 119 or UL 263, as specified in Section 716.2.

b. XXX = The fire rating duration period in minutes, which shall be equal to the fire-resistance rating required for the wall assembly.

Revise as follows:

716.6.7.1 Where 3/4-hour fire protection window assemblies permitted. Fire-protection-rated glazing requiring 45-minute opening protection in accordance with Table 716.6 shall be limited to *fire partitions* designed in accordance with Section 708 and *fire barriers* utilized in the applications set forth in Sections 707.3.6, 707.3.7 and 707.3.9 where the *fire-resistance rating* does not exceed 1 hour. Fire-resistance-rated glazing assemblies tested in accordance with ASTM E 119 or UL 263 shall not be subject to the limitations of this section.

Reason: The purpose of this proposal is to clarify application of the code. Sections 404.6 Enclosure of atriums, 707.3.6 Atriums, and 707.6 Openings Exception 4 all provide for the use of a 1 hour fire-resistance rated fire barrier for enclosing an atrium and provide for the use of fire windows.

However, if the designer decides to provide for a fire window in the fire barrier, Section 716.6.7.1 does not include the atrium section reference, (Section 707.3.6), and Table 716.6 does not have provisions for the Minimum Window Assmbly Rating or Fire-Rated Glazing Marking for the Atrium separation assembly and has led some designers and code officials to question whether fire windows could be utilized because of the general limitation against fire windows in fire barriers.
By including the added language in the table clarification and guidance will be provided to the code user.

Cost Impact: Will not increase the cost of construction
The clarifying labguage will provide for a reduced cost of construction.

FS 97-15 : T716.6-DAVIDSON5287

FS 98-15

716.6.2

Proponent: Adolf Zubia, representing Fire Code Action Committee (fcac@iccsafe.org)

2015 International Building Code

Revise as follows:

716.6.2 Nonsymmetrical glazing systems. Nonsymmetrical fire-protection-rated glazing systems in *fire partitions*, *fire barriers* or in *exterior walls* with a *fire separation distance* of ~~5~~ 10 feet (~~1524~~3048 mm) or less pursuant to Section 705 shall be tested with both faces exposed to the furnace, and the assigned *fire protection rating* shall be the shortest duration obtained from the two tests conducted in compliance with NFPA 257 or UL 9.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. The Fire-CAC has held 10 open meetings and numerous Regional Work Group and Task Group meetings and conference calls for the current code development cycle which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx?usertoken={token}&Site=icc
Section 705.5 of the 2015 International Building Code (IBC) states the required *fire-resistance rating* of *exterior walls* with a *fire separation distance* of greater than 10 feet shall be rated for exposure to fire from the inside only. This distance was increased from 5 feet to 10 feet with the 2009 edition of the IBC. This proposed change to the Section 716.6.2 brings consistency between the requirements for exterior walls and glazing systems installed within exterior walls.

The FCAC opening protective work group included interested industry and testing lab representatives working together to make this section more user friendly. The work group unanimously agreed on a number of proposed changes to IBC Section 716, including this one.

Cost Impact: Will not increase the cost of construction
This code change proposal provides better correlation to existing code requirements.

FS 98-15 : 716.6.2-ZUBIA4210

FS 99-15

716.6.5

Proponent: Adolf Zubia, representing Fire Code Action Committee (fcac@iccsafe.org)

2015 International Building Code

Revise as follows:

716.6.5 Installation. Fire-protection-rated glazing shall be in the fixed position or be automatic-closing and shall be installed in *~~approved~~labeled* frames.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. The Fire-CAC has held 10 open meetings and numerous Regional Work Group and Task Group meetings and conference calls for the current code development cycle which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx?usertoken={token}&Site=icc
Fire door and fire window frames are commonly listed and labeled, and code authorities typically look for labels during installation. This proposal reflects common installation practice and is consistent with NFPA 80, Section 17.1.3 which requires these frames to be labeled.

The FCAC opening protective work group included interested industry and testing lab representatives working together to make this section more user friendly. The work group unanimously agreed on a number of proposed changes to IBC Section 716, including this one.

Cost Impact: Will not increase the cost of construction
This code change proposal merely clarifies a current NFPA 80 requirement.

FS 100-15

716.6.7.3

Proponent: Amber Armstrong, City of Edmond (Oklahoma), representing self (amber.armstrong@edmondok.com)

2015 International Building Code

Revise as follows:

716.6.7.3 Where $^{1}/_{3}$-hour fire-protection window assemblies permitted. Fire-protection-rated glazing shall be permitted in window assemblies tested to NFPA 257 or UL 9 in ~~*smoke barriers* and~~*fire partitions* requiring $^{1}/_{3}$-hour opening protection in accordance with Table 716.6.

Reason: This code change is intended to remove the term "smoke barrier" from this section on the grounds that:

A) The charging section for this sub section does not include smoke barriers. Section 716.6.7 addresses the use of fire window assemblies in fire partitions and fire barriers only.

B) This section states the fire-protection rating for window assemblies in smoke barriers is 1/3-hour in accordance with Table 716.6, however Table 716.6 states the minimum fire window assembly rating in a smoke barrier is 3/4-hour.

Cost Impact: Will not increase the cost of construction

There is no impact to the cost of construction because this change corrects a mistake and the language should not appear where it is stated.

FS 100-15 : 716.6.7.3-ARMSTRONG5060

FS 101-15

716 (New)

Proponent: Adolf Zubia, representing Fire Code Action Committee (fcac@iccsafe.org)

2015 International Building Code

Delete Section 716 in its entirety and replace as follows:

716.1 General Opening protectives required by other sections of this code shall comply with the provisions of this section.

716.1.1 Alternative methods for determining fire protection ratings The application of any of the alternative methods listed in this section shall be based on the fire exposure and acceptance criteria specified in NFPA 252, NFPA 257 or UL 9. The required *fire resistance* of an opening protective shall be permitted to be established by any of the following methods or procedures:

1. Designs documented in *approved* sources.
2. Calculations performed in an a*pproved* manner.
3. Engineering analysis based on a comparison of opening protective designs having *fire protection ratings* as determined by the test procedures set forth in NFPA 252, NFPA 257 or UL 9.
4. Alternative protection methods as allowed by Section 104.11.

716.1.2 Glazing Glazing used in *fire door assemblies* and *fire window assemblies* shall comply with this section in addition to the requirements of Sections 716.2 and 716.3, respectively.

716.1.2.1 Safety glazing *Fire-protection-rated* glazing and *fire-resistance-rated* glazing installed in *fire doorassemblies* and *fire window assemblies* shall comply with the safety glazing requirements of Chapter 24 where applicable.

716.1.2.2 Marking fire-rated glazing assemblies. *Fire-rated glazing* assemblies shall be marked in accordance with Tables 716.1.A, 716.1.B and 716.1.C.

716.1.2.2.1 Fire-rated glazing identification For *fire-rated glazing*, the label shall bear the identification required in Tables 716.1.A and 716.1.B. "D" indicates that the glazing is permitted to be used in fire door assemblies and that the glazing meets the fire protection requirements of NFPA 252. "H" shall indicate that the glazing meets the hose stream requirements of NFPA 252. "T" shall indicate that the glazing meets the temperature requirements of Section 716.2.2.3.1. The placeholder "XXX" represents the fire-rating period, in minutes.

716.1.2.2.2 Fire-protection-rated glazing identification For *fire-protection-rated* glazing, the label shall bear the following identification required in Tables 716.1.A and 716.1.C: "OH – XXX." "OH" indicates that the glazing meets both the fire protection and the hose-stream requirements of NFPA 257 or UL 9 and is permitted to be used in fire window openings. The placeholder "XXX" represents the fire-rating period, in minutes.

716.1.2.2.3 Fire-resistance-rated glazing identification For *fire-resistance-r*ated glazing, the label shall bear the identification required in Section 703.6 and Table 716.1.A.

716.1.2.2.4 Fire-rated glazing that exceeds the code requirements *Fire-rated glazing* assemblies marked as complying with hose stream requirements (H) shall be permitted in applications that do not require compliance with hose stream requirements. *Fire-rated glazing* assemblies marked as complying with temperature rise requirements (T) shall be permitted in applications that do not require compliance with temperature rise requirements. *Fire-rated glazing* assemblies marked with ratings (XXX) that exceed the ratings required by this code shall be permitted.

716.1.2.3 Fire-resistance-rated glazing *Fire-resistance-rated* glazing tested as part of a *fire-resistance-rated* wall or floor/ceiling assembly in accordance with ASTM E 119 or UL 263 and labeled in accordance with Section 703.6 shall not otherwise be required to comply with this section where used as part of a wall or floor/ceiling assembly.

716.1.2.3.1 Glazing in fire door and fire window assemblies *Fire-resistance-rated* glazing shall be permitted in *fire door assemblies* and *fire window assemblies* where tested and installed in accordance with their listings and where in compliance with the requirements of Sections 716.2 and 716.3, respectively.

TABLE 716.1.A
MARKING FIRE-RATED GLAZING ASSEMBLIES

FIRE TEST STANDARD	MARKING	DEFINITION OF MARKING
ASTM E 119 or UL 263	W	Meets wall assembly criteria.

NFPA 257 or UL 9	OH	Meets fire window assembly criteria including the hose stream test.
NFPA 252 or UL 10B or UL 10C	D H T	Meets fire door assembly criteria. Meets fire door assembly hose stream test. Meets 450ºF temperature rise criteria for 30 minutes
-	XXX	The time in minutes of the fire resistance or fire protection rating of the glazing assembly.

For SI: ºC = [(ºF) - 32]/1.8.

TABLE 716.1.B
OPENING FIRE PROTECTION ASSEMBLIES, RATINGS AND MARKINGS

TYPE OF ASSEMBLY	REQUIRED WALL ASSEMBLY RATING (hours)	MINIMUM FIRE DOOR AND FIRE SHUTTER ASSEMBLY RATING (hours)	DOOR VISION PANEL SIZE[b]	FIRE-RATED GLAZING MARKING DOOR VISION PANEL[d]	MINIMUM SIDELIGHT/ TRANSOM ASSEMBLY RATING (hours)		FIRE-RATED GLAZING MARKING SIDELIGHT/TRANSOM PANEL	
					Fire protection	Fire resistance	Fire protection	Fire resistance
Fire walls and fire barriers having a required fire-resistance rating greater than 1 hour	4	3	See Note b	D-H-W-240	Not Permitted	4	Not Permitted	W-240
	3	3[a]	See Note b	D-H-W-180	Not Permitted	3	Not Permitted	W-180
	2	1 1/2	100 sq. in.	≤100 sq. in. = D-H-90 >100 sq. in.= D-H-W-90	Not Permitted	2	Not Permitted	W-120
	1 1/2	1 1/2	100 sq. in.	≤100 sq. in. = D-H-90 >100 sq. in.=D-H-W-90	Not Permitted	1 1/2	Not Permitted	W-90
Enclosures for shafts, interior exit stairways and interior exit ramps.	2	1 1/2	100 sq. in.	≤100 sq. in. = D-H-90 > 100 sq. in.=D-H-T-W-90	Not Permitted	2	Not Permitted	W-120
Horizontal exits in fire walls[e]	4	3	100 sq. in.	≤100 sq. in. = D-H-180 > 100 sq. in.=D-H-W-240	Not Permitted	4	Not Permitted	W-240

walls	3	3[a]	100 sq. in.	≤100 sq. in. = D-H-180 > 100 sq. in.=D-H-W-180	Not Permitted	3	Not Permitted	W-180
Fire barriers having a required fire-resistance rating of 1 hour: Enclosures forshafts,exit access stairways, exit access ramps, interior exit stairways and interior exit ramps; and exit passageway walls	1	1	100 sq. in.[c]	≤100 sq. in. = D-H-60 >100 sq. in.= D-H-T-W-60	Not Permitted	1	Not Permitted	W-60
-					**Fire protection**		-	
Other fire barriers	1	3/4	Maximum size tested	D-H	3/4		D-H	
Fire partitions: Corridor walls	1	1/3[b]	Maximum size tested	D-20	3/4[b]		D-H-OH-45	
	0.5	1/3[b]	Maximum size tested	D-20	1/3		D-H-OH-20	
Other fire partitions	1	3/4	Maximum size tested	D-H-45	3/4		D-H-45	
	0.5	1/3	Maximum size tested	D-H-20	1/3		D-H-20	

TYPE OF ASSEMBLY	**REQUIRED WALL ASSEMBLY RATING (hours)**	**MINIMUM FIRE DOOR AND FIRE SHUTTER ASSEMBLY RATING (hours)**	**DOOR VISION PANEL SIZE[b]**	**FIRE-RATED GLAZING MARKING DOOR VISION PANEL[d]**	**MINIMUM SIDELIGHT/ TRANSOM ASSEMBLY RATING (hours)**		**FIRE-RATED GLAZING MARKING SIDELIGHT/TRANSOM PANEL**	
					Fire protection	**Fire resistance**	**Fire protection**	**Fire resistance**

Exterior walls	3	$1\frac{1}{2}$	100 sq. in.[b]	≤100 sq. in. = D-H-90 >100 sq. in = D-H-W-90	Not Permitted	3	Not Permitted	W-180
	2	$1\frac{1}{2}$	100 sq. in.[b]	≤100 sq. in. = D-H-90 >100 sq. in.= D-H-W-90	Not Permitted	2	Not Permitted	W-120
	-				**Fire protection**		-	
	1	$\frac{3}{4}$	Maximum size tested	D-H-45	$\frac{3}{4}$		D-H-45	
Smoke barriers	-				**Fire protection**		-	
	1	$\frac{1}{3}$	Maximum size tested	D-20	$\frac{3}{4}$		D-H-OH-45	

For SI: 1 square inch = 645.2 mm.

a. Two doors, each with a fire protection rating of $1\frac{1}{2}$ hours, installed on opposite sides of the same opening in a fire wall, shall be deemed equivalent in fire protection rating to one 3-hour fire door.

b. Fire-resistance-rated glazing tested to ASTM E 119 in accordance with Section 716.2 shall be permitted, in the maximum size tested.

c. Except where the building is equipped throughout with an automatic sprinkler and the fire-rated glazing meets the criteria established in Section 716.5.5.

d. Under the column heading "Fire-rated glazing marking door vision panel," W refers to the fire-resistance rating of the glazing, not the frame.

e. See Section 716.5.8.1.2.1.

TABLE 716.1.C
FIRE WINDOW ASSEMBLY FIRE PROTECTION RATINGS

TYPE OF WALL ASSEMBLY	**REQUIRED WALL ASSEMBLY RATING (hours)**	**MINIMUM FIRE WINDOW ASSEMBLY RATING (hours)**	**FIRE-RATED GLAZING MARKING**
Interior walls	-	-	-
Fire walls	All	NP[a]	W-XXX[b]
Fire barriers	>1 1	NP[a] NP[a]	W-XXX[b] W-XXX[b]
Incidental use areas (Section 707.3.7), Mixed occupancy separations (Section 707.3.9)	1	$\frac{3}{4}$	OH-45 or W-60

Fire partitions	1 0.5	3/4 1/3	OH-45 or W-60 OH-20 or W-30
Smoke barriers	1	3/4	OH-45 or W-60
Exterior walls	>1 1 0.5	1 1/2 3/4 1/3	OH-90 or W-XXX[b] OH-45 or W-60 OH-20 or W-30
Party wall	All	NP	Not Applicable

NP = Not Permitted.

a. Not permitted except fire-resistance-rated glazing assemblies tested to ASTM E 119 or UL 263, as specified in Section 716.2.

b. XXX = The fire rating duration period in minutes, which shall be equal to the fire-resistance rating required for the wall assembly.

716.2 Fire door assemblies *Fire door assemblies* required by other sections of this code shall comply with the provisions of this Section. *Fire door* frames with transom lights, sidelights or both shall be permitted in accordance with Section 716.2.5.4.

716.2.1 Testing requirements *Approved fire door* and fire shutter assemblies shall be constructed of any material or assembly of component materials that conforms to the test requirements of Sections 716.2.1.1, 716.2.1.2, 716.2.1.3 or 716.2.1.4 and the *fire protection r*ating indicated in Table 716.1.B.

Exceptions:

1. *Labeled* protective assemblies that conform to the requirements of this section or UL 10A, UL 14B, and UL 14C for tin-clad *fire door assemblies*.
2. Floor *fire door* assemblies in accordance with Section 712.1.13.1.

716.2.1.1 Side-hinged or pivoted swinging doors *Fire door assemblies* with side-hinged and pivoted swinging doors shall be tested in accordance with NFPA 252 or UL 10C. After 5 minutes into the NFPA 252 test, the neutral pressure level in the furnace shall be established at 40 inches (1016 mm) or less above the sill.

716.2.1.2 Other fire door assemblies. Fire door assemblies with other types of doors, including swinging elevator doors, horizontal sliding fire door assemblies, and fire shutter assemblies, bottom and side-hinged chute intake doors, and top-hinged chute discharge doors, shall be tested in accordance with NFPA 252 or UL 10B. The pressure in the furnace shall be maintained as nearly equal to the atmospheric pressure as possible. Once established, the pressure shall be maintained during the entire test period.

716.2.1.2 Other fire door assemblies *Fire door assemblies* with other types of doors, including swinging elevator doors, horizontal sliding fire door assemblies, and fire shutter assemblies, bottom and side-hinged chute intake doors, and top-hinged chute discharge doors, shall be tested in accordance with NFPA 252 or UL 10B. The pressure in the furnace shall be maintained as nearly equal to the atmospheric pressure as possible. Once established, the pressure shall be maintained during the entire test period.

716.2.1.3 Glazing in transoms lights and sidelights in corridors and smoke barriers Glazing material in transom lights and sidelights of *fire door assemblies* shall be tested in accordance with NFPA 257 or UL 9, including the hose stream test, in accordance with Section 716.3.1.1.

716.2.1.4 Smoke and draft control Smoke and draft control door assemblies shall be tested in accordance with UL 1784.

716.2.2 Performance requirements *Fire door assemblies* shall be installed in the assemblies specified in Table 716.1.B and shall comply with the *fire-protection rating* specified.

716.2.2.1 Door assemblies in corridors and smoke barriers *Fire door assemblies* required to have a minimum *fire protection rating* of 20 minutes where located in *corridor* walls or *smoke barrier* walls having a *fire-resistance rating* in accordance with Table 716.1.B shall be tested in accordance with NFPA 252 or UL 10C without the hose stream test.

Exceptions:

1. Viewports that require a hole not larger than 1 inch (25 mm) in diameter through the door, have not less than a 0.25-inch-thick (6.4 mm) glass disc and the holder is of metal that will not melt out where subject to temperatures of 1,700°F (927°C).
2. *Corridor* door assemblies in occupancies of Group I-2 shall be in accordance with Section 407.3.1.

3. Unprotected openings shall be permitted for *corridors* in multitheater complexes where each motion picture auditorium has not fewer than one-half of its required *exit* or *exit access doorways* opening directly to the exterior or into an *exit* passageway.
4. Horizontal sliding doors in *smoke barriers* that comply with Sections 408.6 and 408.8.4 in occupancies in Group I-3.

716.2.2.1.1 Smoke and draft control The air leakage rate of the door assembly shall not exceed 3.0 cubic feet per minute per square foot (0.01524 m3/s m2) of door opening at 0.10 inch (24.9 Pa) of water for both the ambient temperature and elevated temperature tests. Louvers shall be prohibited.

716.2.2.2 Door assemblies in other fire partitions *Fire door assemblies* required to have a minimum *fire protection rating* of 20 minutes where located in other *fire partitions* having a fire-resistance rating of 0.5 hour in accordance with Table 716.1.B shall be tested in accordance with NFPA 252, UL 10B or UL 10C with the hose stream test.

716.2.2.3 Doors in interior exit stairways and ramps and exit passageways *Fire door assemblies* in interior *exit* stairways and ramps and *exit* passageways shall have a maximum transmitted temperature rise of not more than 450°F (250°C) above ambient at the end of 30 minutes of standard fire test exposure.
Exception: The maximum transmitted temperature rise is not required in buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2.

716.2.2.3.1 Glazing in doors *Fire-protection-rated* glazing in excess of 100 square inches (0.065 m2) is not permitted. *Fire-resistance-rated* glazing in excess of 100 square inches (0.065 m2) shall be permitted in *fire doors. Listed fire-resistance-rated* glazing in a *fire door* shall have a maximum transmitted temperature rise in accordance with Section 716.2.2.3 when the *fire door* is tested in accordance with NFPA 252, UL 10B or UL 10C.

716.2.3 Fire doors *Fire doors* installed within a *fire door assembly* shall meet the fire rating indicated in Table 716.1.B.

716.2.4 Fire door frames *Fire door* frames installed as part of a *fire door assembly* shall meet the fire rating indicated in Table 716.1.B.

716.2.5 Glazing in fire door assemblies *Fire-rated glazing* and *fire resistance-rated* glazing conforming to the opening protection requirements in Section 716.2.2 shall be permitted in *fire door assemblies*.

716.2.5.1 Size limitations *Fire-resistance-rated* glazing shall comply with the size limitations in Section 716.2.5.1.1. *Fire-protection-rated* glazing shall comply with the size limitations of NFPA 80, and as provided in Section 716.2.5.1.2.

716.2.5.1.1 Fire-resistance-rated glazing in door assemblies in fire walls and fire barriers rated greater than 1 hour. *Fire-resistance-rated* glazing tested to ASTM E 119 or UL 263 and NFPA 252, UL 10B or UL 10C shall be permitted in *fire door assemblies* located in *fire walls* and in *fire bar*riers in accordance with Table 716.1.B to the maximum size tested and in accordance with their listings.

716.2.5.1.2 Fire-protection-rated glazing in door assemblies in fire walls and fire barriers rated greater than 1 hour. *Fire-protection-rated* glazing shall be prohibited in *fire walls* and *fire barriers* except as provided in Sections 716.2.5.1.2.1 and 716.2.5.1.2.2.

716.2.5.1.2.1 Horizontal exits *Fire-protection-rated* glazing shall be permitted as vision panels in self-closing swinging *fire door assemblies* serving as *horizontal exits* in *fire walls* where limited to 100 square inches (0.065 m2) with no dimension exceeding 10 inches (0.3 mm).

716.2.5.1.2.2 Fire barriers *Fire-protection-rated* glazing shall be permitted in *fire doors* having a 1-1/2-hour *fire protection rating* intended for installation in *fire barriers*, where limited to 100 square inches (0.065 m2).

716.2.5.2 Elevator, stairway and ramp protectives *Approved fire-protection-rated* glazing used in *fire door assemblies* in elevator, stairway and ramp enclosures shall be so located as to furnish clear vision of the passageway or approach to the elevator, stairway or ramp.

716.2.5.3 Glazing in door assemblies in corridors and smoke barriers In a 20-minute *fire door assembly*, the glazing material in the door itself shall have a minimum *fire-protection-rated* glazing of 20 minutes and shall be exempt from the hose stream test.

716.2.5.4] Glazing in fire door frames with transom lights and sidelights Door frames with transom lights, sidelights or both, shall be permitted where a 3/4-hour *fire protection rating* or less is required in accordance with Table 716.1.B. Fire door frames with transom lights, sidelights, or both, installed with *fire-resistance-rated* glazing tested as an assembly in accordance with ASTM E 119 or UL 263 shall be permitted where a *fire protection rating* exceeding 3/4 hour is required in accordance with Table 716.1.B.

716.2.6 Fire door hardware and closures *Fire door* hardware and closures shall be installed on *fire door assemblies* in accordance with requirements of this section.

716.2.6.1 Door closing *Fire doors* shall be latching and self- or automatic-closing in accordance with this section.

Exceptions:

1. *Fire doors* located in common walls separating sleeping units in Group R-1 shall be permitted without automatic- or self-closing devices.
2. The elevator car doors and the associated hoistway enclosure doors at the floor level designated for recall in accordance with Section 3003.2 shall be permitted to remain open during Phase I emergency recall operation.

716.2.6.2 Latch required Unless otherwise specifically permitted, single *fire doors* and both leaves of pairs of side-hinged swinging *fire doors* shall be provided with an active latch bolt that will secure the door when it is closed.

716.2.6.3 Chute intake door latching Chute intake doors shall be positive latching, remaining latched and closed in the event of latch spring failure during a fire emergency.

716.2.6.4 Auomatic-closing fire door assemblies Automatic-closing *fire door assemblies* shall be self-closing in accordance with NFPA 80.

716.2.6.5 Smoke-activated doors Automatic-closing doors installed in the following locations shall be automatic-closing by the actuation of smoke detectors installedin accordance with Section 907.3 or by loss of power to the smoke detector or hold-open device. Doors that are automatic-closing by smoke detection shall not have more than a 10-second delay before the door starts to close after the smoke detector is actuated:

1. Doors installed across a *corridor*.
2. Doors installed in the enclosures of *exit access stairways* and *ramps* in accordance with Sections 1019 and 1023, respectively.
3. Doors that protect openings in *exits* or *corridors* required to be of *fire-resistance-rated* construction.
4. Doors that protect openings in walls that are capable of resisting the passage of smoke in accordance with Section 509.4.
5. Doors installed in *smoke barriers* in accordance with Section 709.5.
6. Doors installed in *fire partitions* in accordance with Section 708.6.
7. Doors installed in a *fire wall* in accordance with Section 706.8.
8. Doors installed in shaft enclosures in accordance with Section 713.7.
9. Doors installed in waste and linen chutes, discharge openings and access and discharge rooms in accordance with Section 713.13. Loading doors installed in waste and linen chutes shall meet the requirements of Sections 716.2.6.1 and 716.2.6.3.
10. Doors installed in the walls for compartmentation of underground buildings in accordance with Section 405.4.2.
11. Doors installed in the elevator lobby walls of underground buildings in accordance with Section 405.4.3.
12. Doors installed in *smoke partitions* in accordance with Section 710.5.2.3.

716.2.6.6 Doors in pedestrian ways Vertical sliding or vertical rolling steel fire doors in openings through which pedestrians travel shall be heat activated or activated by smoke detectors with alarm verification.

716.2.7 Swinging fire shutters Where fire shutters of the swinging type are installed in exterior openings, not less than one row in every three vertical rows shall be arranged to be readily opened from the outside, and shall be identified by distinguishing marks or letters not less than 6 inches (152 mm) high.

716.2.8 Rolling fire shutters Were fire shutters of the rolling type are installed, such shutters shall include *approved* automatic-closing devices.

716.2.9 Labeled protective assemblies. *Fire door assemblies* shall be *labeled* by an *approved* agency. The labels shall comply with NFPA 80, and shall be permanently affixed to the door or frame.

716.2.9.1 Fire door labeling requirements *Fire doors* shall be *labeled* showing the name of the manufacturer or other identification readily traceable back to the manufacturer, the name or trademark of the third party inspection agency, the *fire protection rating* and, where required for *fire doors* in interior *exit stairways* and *ramps* and *exit passageways* by Section 716.2.2.3, the maximum transmitted temperature end point. Smoke and draft control doors complying with UL 1784 shall be *labeled* as such and shall comply with Section 716.2.9.3. Labels shall be *approved* and permanently affixed. The label shall be applied at the factory or location where fabrication and assembly are performed.

716.2.9.1.1 Light kits, louvers and components *Listed* light kits and louvers and their required preparations shall be considered as part of the *labeled* door where such installations are done under the listing program of the third-party agency. *Fire doors* and *fire door assemblies* shall be permitted to consist of components, including glazing, vision light kits and hardware that are *listed* or classified and labeled for such use by different third-party agencies.

716.2.9.2 Oversized doors Oversized *fire doors* shall bear an oversized *fire door* label by an *approved* agency or shall be provided with a certificate of inspection furnished by an *approved* testing agency. Where a certificate of inspection is furnished by an *approved* testing agency, the certificate shall state that the door conforms to the requirements of design, materials and construction, but has not been subjected to the fire test.

716.2.9.3 Smoke and draft control door labeling requirements Smoke and draft control doors complying with UL 1784 shall be labeled in accordance with Section 716.2.9.1 and shall show the letter "S" on the fire-rating *label* of the door. This marking shall indicate that the door and frame assembly are in compliance where listed or labeled gasketing is installed.

716.2.9.4 Fire door frame labeling requirements *Fire door* frames shall be *labeled* showing the names of the manufacturer and the third-party inspection agency.

716.2.9.5 Fire door glazing labeling requirements *Fire-rated glazing* shall bear a *label* or other identification showing the name of the manufacturer, the test standard and information required in Table 716.1.A that shall be issued by an *approved* agency and shall be permanently identified on the glazing.

716.2.9.6 Fire door operator labeling requirements *Fire door* operators for horizontal sliding doors shall be *labeled* and *liste*d for use with the assembly.

716.2.10 Installation of fire door assemblies and fire shutter assemblies *Fire door assemblies* and shutters shall be installed in accordance with the provisions of this section and NFPA 80.

716.2.10.1 Doors assemblies in corridors and smoke barriers Installation of smoke doors shall be in accordance with NFPA 105.

716.3 Fire window assemblies *Fire window assemblies* required by other sections of this code shall comply with the provisions of this Section.

716.3.1 Testing requirements *Fire window assemblies* shall be constructed of any material or assembly of component materials that conforms to the test requirements of Section 716.3.1.1 and 716.3.1.2 and the *fire protection rating* indicated in Table 716.1.C.

716.3.1.1 Testing under positive pressure NFPA 257 or UL 9 shall evaluate *fire-protection-rated* glazing under positive pressure. Within the first 10 minutes of a test, the pressure in the furnace shall be adjusted so not less than two-thirds of the test specimen is above the neutral pressure plane, and the neutral pressure plane shall be maintained at that height for the balance of the test.

716.3.1.2 Nonsymmetrical glazing systems Nonsymmetrical *fire-protection-rated* glazing systems in *fire partitions*, *fire barriers* or in exterior walls with a *fire separation distance* of 5 feet (1524 mm) or less pursuant to Section 705 shall be tested with both faces exposed to the furnace, and the assigned *fire protection rating* shall be the shortest duration obtained from the two tests conducted in compliance with NFPA 257 or UL 9.

716.3.2 Performance requirements *Fire window assemblies* shall be installed in the assemblies specified in Table 716.1.C and shall comply with the *fire-protection rating* specified.

716.3.2.1 Interior fire window assemblies *Fire-protection-rated* glazing used in *fire window assemblies* located in *fire partitions* and *fire barriers* shall be limited to use in assemblies with a maximum *fire-resistance rating* of 1 hour in accordance with this section.

716.3.2.1.1 Where 3/4-hour fire protection window assemblies permitted *Fire-protection-rated* glazing requiring 45-minute opening protection in accordance with Table 716.1.C shall be limited to *fire partition* designed in accordance with Section 708 and *fire barriers* utilized in the applications set forth in Sections 707.3.6 and 707.3.8 where the *fire-resistance rating* does not exceed 1 hour. *Fire-resistance-rated glazing* assemblies tested in accordance with ASTM E 119 or UL 263 shall not be subject to the limitations of this section.

716.3.2.1.2 Area limitations The total area of the glazing in *fire-protection-rated* window assemblies shall not exceed 25 percent of the area of a common wall with any room.

716.3.2.1.3 Where 1/3-hour fire-protection window assemblies permitted. *Fire-protection-rated* glazing shall be permitted in window assemblies tested to NFPA 257 or UL 9 in *smoke barriers* and *fire partitions* requiring 1/3-hour opening protection in accordance with Table 716.1.C.

716.3.3 Fire window frames Fire window frames installed with a *fire window assembly* shall meet the *fire-protection rating* indicated in Table 716.1.C.

716.3.3.1 Window mullions Metal mullions that exceed a nominal height of 12 feet (3658 mm) shall be protected with materials to afford the same *fire-resistance rating* as required for the wall construction in which the protective is located.

716.3.4 Glazing in fire window assemblies Glazing in *fire window assemblies* shall be *fire protection rated* in accordance with this section and Table 716.1.C. *Fire-protection-rated* glazing in *fire window assemblies* shall be tested in accordance with and shall meet the acceptance criteria of NFPA 257 or UL 9. *Fire-protection-rated* glazing shall comply with NFPA 80. Openings in nonfire-resistance-rated exterior wall assemblies that require protection in accordance with Section 705.3, 705.8, 705.8.5 or 705.8.6 shall have a *fire protection rating* of not less than 3/4 hour. *Fire-protection-rated* glazing in 0.5-hour fire-resistance-rated partitions is permitted to have an 0.33-hour *fire protection rating*.

716.3.4.1 Glass and glazing Glazing in *fire window assemblies* shall be *fire-protection-rated* glazing installed in accordance

with and complying with the size limitations set forth in NFPA 80.

716.3.5 Labeled protective assemblies Glazing in *fire window assemblies* shall be *labeled* by an *approved* agency. The labels shall comply with NFPA 80, and shall comply with Section 716.3.5.2.

716.3.5.1 Fire window frames Fire window frames shall be *approved* for the intended application.

716.3.5.2 Fire window glazing labeling requirements *Fire-protection-rated* glazing shall bear a label or other identification showing the name of the manufacturer, the test standard and information required in Section 716.1.2.2.2 and Table 716.1.C that shall be issued by an *approved* agency and permanently identified on the glazing.

716.3.6 Installation *Fire window assemblies* shall be installed in accordance with the provisions of this Section.

716.3.6.1 Closure *Fire-protection-rated* glazing shall be in the fixed position or be automatic-closing and shall be installed in *approved* frames.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. The Fire-CAC has held 2 open meetings and numerous Regional Work Group and Task Group meetings and conference calls for the current code development cycle which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at:
http://www.iccsafe.org/cs/CAC/Pages/default.aspx?usertoken={token}&Site=icc

The FCAC opening protective work group included interested industry and testing lab representatives working together to make this section more user friendly. The work group unanimously agreed on a wide range of proposed changes to IBC Section 716.
This proposal is essentially a reorganization of Section 716 with no substantive changes, except for the some new titles and new charging statements to make the section flow smoother. The reorganization was needed because the current requirements are not in a logical order, and skip around between testing requirements, rating requirements, installation and labeling. The new Section 716 is organized into General (716.1), Fire door assemblies (716.2), and Fire window assemblies (716.3) sections.
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For clarity, the above proposal shows how the new section is intended to appear. The following guide shows how the current 2015 IBC requirements were moved and modified to accomplish the above proposal.
Text Revision Key
1. Underlined – New or modified text added to enhance document flow
2. **Bold &** underline – Section or Table references which have been updated
3. Strikethrough – Text which has been relocated, or deleted as not appropriate in the reorganized Section
4. (Parenthesis) – 2015 IBC Section 716 source of text, or where deleted text has been relocated to in the reorganized Section
Revised Text
716.1 General. (From 716.1) Opening protectives required by other sections of this code shall comply with the provisions of this section.
716.1.1 Alternative methods for determining fire protection ratings. (From 716.4) The application of any of the alternative methods listed in this section shall be based on the fire exposure and acceptance criteria specified in NFPA 252, NFPA 257 or UL 9. The required fire resistance of an opening protective shall be permitted to be established by any of the following methods or procedures:
1. Designs documented in approved sources.
2. Calculations performed in an approved manner.
3. Engineering analysis based on a comparison of opening protective designs having fire protection ratings as determined by the test procedures set forth in NFPA 252, NFPA 257 or UL 9.
4. Alternative protection methods as allowed by Section 104.11.
716.1.2 Glazing. (New) Glazing used in fire door assemblies and fire window assemblies shall comply with this section in addition to the requirements of Sections 716.2 and 716.3, respectively.
716.1.2.1 Safety glazing. (From 716.5.8.4 and 716.6.3) Fire-protection-rated glazing and fire-resistance-rated glazing installed in fire door assemblies and fire window assemblies shall comply with the safety glazing requirements of Chapter 24 where applicable.
716.1.2.2 Marking fire-rated glazing assemblies. (From 716.3) Fire-rated glazing assemblies shall be marked in accordance with Tables ~~716.3~~**716.1.A**, ~~716.5~~ **716.1.B** and ~~716.6~~**716.1.C.**
716.1.2.2.1 Fire-rated glazing identification. (From 716.3.1) For fire-rated glazing, the label shall bear the identification required in Tables ~~716.3~~**716.1.A** and ~~716.5~~**716.1.B**. "D" indicates that the glazing is permitted to be used in fire door assemblies and that the glazing meets the fire protection requirements of NFPA 252. "H" shall indicate that the glazing meets the hose stream requirements of NFPA 252. "T" shall indicate that the glazing meets the temperature requirements of Section ~~716.5.5.1~~**716.2.2.3.1**. The placeholder "XXX" represents the fire-rating period, in minutes.
716.1.2.2.2 Fire-protection-rated glazing identification. (From 716.3.2) For fire-protection-rated glazing, the label shall bear the following identification required in Tables ~~716.3~~**716.1.A** and ~~716.6~~**716.1.C**: "OH – XXX." "OH" indicates that the glazing meets both the fire protection and the hose-stream requirements of NFPA 257 or UL 9 and is permitted to be used in fire window openings. The placeholder "XXX" represents the fire-rating period, in minutes.
716.1.2.2.3 Fire-resistance-rated glazing identification. (New) For fire-resistance-rated glazing, the label shall bear the identification required in Section 703.6 and Table 716.1.A.
716.1.2.2.4 Fire-rated glazing that exceeds the code requirements. (From 716.3.3) Fire-rated glazing assemblies marked as complying with hose stream requirements (H) shall be permitted in applications that do not require compliance with hose stream requirements. Fire-rated glazing assemblies marked as complying with temperature rise requirements (T) shall be permitted in applications that do not require compliance with temperature rise requirements. Fire-rated glazing assemblies marked with ratings (XXX) that exceed the ratings required by this code shall be permitted.
716.1.2.3 Fire-resistance-rated glazing. (From 716.2) Fire-resistance-rated glazing tested as part of a fire-resistance-rated wall or floor/ceiling assembly in accordance with ASTM E 119 or UL 263 and labeled in accordance with Section 703.6 shall not otherwise be required to comply with this section where used as part of a wall or floor/ceiling assembly. ~~Fire-resistance-rated glazing shall be permitted in fire door and fire window assemblies~~

~~where tested and installed in accordance with their listings and where in compliance with the requirements of this section.~~ (Relocated to new Section 716.1.2.3.1)

716.1.2.3.1 Glazing in fire door and fire window assemblies. (From 716.2) Fire-resistance-rated glazing shall be permitted in fire door and fire window assemblies where tested and installed in accordance with their listings and where in compliance with the requirements of Sections 716.2 and 716.3, respectively.

716.2 Fire door assemblies. (New) Fire door assemblies required by other sections of this code shall comply with the provisions of this Section. (From 716.5.6) Fire door frames with transom lights, sidelights or both shall be permitted in accordance with Section ~~716.5.6~~**716.2.5.4.**

716.2.1 Testing requirements. (From 716.5) Approved fire door and fire shutter assemblies shall be constructed of any material or assembly of component materials that conforms to the test requirements of Sections ~~716.5.1~~**716.2.1.1,**~~716.5.2~~**716.2.1.2,**~~716.5.3~~**716.2.1.3** or ~~716.4~~716.2.1.4 and the fire protection rating indicated in Table ~~716.5~~716.1.B. ~~Fire door frames with transom lights, sidelights or both shall be permitted in accordance with Section 716.5.6. (Relocated to new Section 716.2) Fire door assemblies and shutters shall be installed in accordance with the provisions of this section and NFPA 80. (~~Relocated to new Section 716.2.10)

Exceptions:

1. Labeled protective assemblies that conform to the requirements of this section or UL 10A, UL 14B, and UL 14C for tin-clad fire door assemblies.
2. Floor fire door assemblies in accordance with Section 712.1.13.1.

716.2.1.1 Side-hinged or pivoted swinging doors. (From 716.5.1) Fire door assemblies with side-hinged and pivoted swinging doors shall be tested in accordance with NFPA 252 or UL 10C. After 5 minutes into the NFPA 252 test, the neutral pressure level in the furnace shall be established at 40 inches (1016 mm) or less above the sill.

716.2.1.2 Other fire door assemblies. (From 716.5.2) Fire door assemblies with other types of doors, including swinging elevator doors, horizontal sliding fire door assemblies, and fire shutter assemblies, bottom and side-hinged chute intake doors, and top-hinged chute discharge doors, shall be tested in accordance with NFPA 252 or UL 10B. The pressure in the furnace shall be maintained as nearly equal to the atmospheric pressure as possible. Once established, the pressure shall be maintained during the entire test period.

716.2.1.3 Glazing in transoms lights and sidelights in corridors and smoke barriers. (From 716.5.3.2) ~~Glazing material in any other part of the door assembly, including~~ (Deleted as not relevant to reorganized document) transom lights and sidelights of fire door assemblies, shall be tested in accordance with NFPA 257 or UL 9, including the hose stream test, in accordance with Section ~~716.6~~**716.3.1.1.**

716.2.1.4 Smoke and draft control. (From 716.5.3.1) ~~Fire door assemblies shall meet the requirements for a s~~ Smoke and draft control door ~~assembly~~assemblies shall be tested in accordance with UL 1784. ~~The air leakage rate of the door assembly shall not exceed 3.0 cubic feet per minute per square foot (0.01524 m3/s m2) of door opening at 0.10 inch (24.9 Pa) of water for both the ambient temperature and elevated temperature tests. Louvers shall be prohibited~~. (Relocated to new Section 716.2.2.1.1) ~~Installation of smoke doors shall be in accordance with NFPA 105~~. (Relocated to new Section 716.2.10.1)

716.2.2 Performance requirements. (New) Fire door assemblies shall be installed in the assemblies specified in Table 716.1.B and shall comply with the fire-protection rating specified.

716.2.2.1 Door assemblies in corridors and smoke barriers. (From 716.5.3) Fire door assemblies required to have a minimum fire protection rating of 20 minutes where located in corridor walls or smoke barrier walls having a fire-resistance rating in accordance with Table ~~716.5~~**716.1.B**shall be tested in accordance with NFPA 252 or UL 10C without the hose stream test.

Exceptions:

1. Viewports that require a hole not larger than 1 inch (25 mm) in diameter through the door, have not less than a 0.25-inch-thick (6.4 mm) glass disc and the holder is of metal that will not melt out where subject to temperatures of 1,700°F (927°C).
2. Corridor door assemblies in occupancies of Group I-2 shall be in accordance with Section 407.3.1.
3. Unprotected openings shall be permitted for corridors in multitheater complexes where each motion picture auditorium has not fewer than one-half of its required exit or exit access doorways opening directly to the exterior or into an exit passageway.
4. Horizontal sliding doors in smoke barriers that comply with Sections 408.6 and 408.8.4 in occupancies in Group I-3.

716.2.2.1.1 Smoke and draft control. (From 716.5.3.1) The air leakage rate of the door assembly shall not exceed 3.0 cubic feet per minute per square foot (0.01524 m3/s m2) of door opening at 0.10 inch (24.9 Pa) of water for both the ambient temperature and elevated temperature tests. Louvers shall be prohibited.

716.2.2.2 Door assemblies in other fire partitions. (From 716.5.4) Fire door assemblies required to have a minimum fire protection rating of 20 minutes where located in other fire partitions having a fire-resistance rating of 0.5 hour in accordance with Table ~~716.5~~**716.1.**B shall be tested in accordance with NFPA 252, UL 10B or UL 10C with the hose stream test.

716.2.2.3 Doors in interior exit stairways and ramps and exit passageways. (From 716.5.5) Fire door assemblies in interior exit stairways and ramps and exit passageways shall have a maximum transmitted temperature rise of not more than 450°F (250°C) above ambient at the end of 30 minutes of standard fire test exposure.

Exception: The maximum transmitted temperature rise is not required in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.

716.2.2.3.1 Glazing in doors. (From 716.5.5.1) Fire-protection-rated glazing in excess of 100 square inches (0.065 m2) is not permitted. Fire-resistance-rated glazing in excess of 100 square inches (0.065 m2) shall be permitted in ~~door~~ fire doors. Listed fire-resistance-rated glazing in a fire door shall have a maximum transmitted temperature rise in accordance with Section ~~716.5.5~~ **716.2.2.3**when the fire door is tested in accordance with NFPA 252, UL 10B or UL 10C.

716.2.3 Fire doors. (New) Fire doors installed within a fire door assembly shall meet the fire rating indicated in Table 716.1.B.

716.2.4 Fire door frames. (New) Fire door frames installed as part of a fire door assembly shall meet the fire rating indicated in Table 716.1.B.

716.2.5 Glazing in fire doors assemblies. (From 716.5.8) Fire-rated glazing and fire resistance-rated glazing conforming to the opening protection requirements in Section ~~716.5~~**716.2.2** shall be permitted in fire door assemblies.

716.2.5.1 Size limitations. (From 716.5.8.1) Fire-resistance-rated glazing shall comply with the size limitations in Section ~~716.5.8.1.1~~**716.2.5.1.1**. Fire-protection-rated glazing shall comply with the size limitations of NFPA 80, and as provided in Section ~~716.5.8.1.2~~**716.2.5.1.2**.

716.2.5.1.1 Fire-resistance-rated glazing in door assemblies in fire walls and fire barriers rated greater than 1 hour. (From 716.5.8.1.1) Fire-resistance-rated glazing tested to ASTM E 119 or UL 263 and NFPA 252, UL 10B or UL 10C shall be permitted in fire door assemblies located in fire walls and in fire barriers in accordance with Table ~~716.5~~**716.1.B** to the maximum size tested and in accordance with their listings.

716.2.5.1.2 Fire-protection-rated glazing in door assemblies in fire walls and fire barriers rated greater than 1 hour. (From 716.5.8.1.2) Fire-protection-rated glazing shall be prohibited in fire walls and fire barriers except as provided in Sections ~~716.5.8.1.2.1~~ **716.2.5.1.2.1** and ~~716.5.8.1.2.2~~**716.2.5.1.2.2.**

716.2.5.1.2.1 Horizontal exits. (From 716.5.8.1.2.1) Fire-protection-rated glazing shall be permitted as vision panels in self-closing swinging fire door assemblies serving as horizontal exits in fire walls where limited to 100 square inches (0.065 m2) with no dimension exceeding 10 inches (0.3 mm).

716.2.5.1.2.2 Fire barriers. (From 716.5.8.1.2.2) Fire-protection-rated glazing shall be permitted in fire doors having a 1-1/2-hour fire protection rating intended for installation in fire barriers, where limited to 100 square inches (0.065 m2).

716.2.5.2 Elevator, stairway and ramp protectives. (From 716.5.8.2) Approved fire-protection-rated glazing used in fire door assemblies in elevator, stairway and ramp enclosures shall be so located as to furnish clear vision of the passageway or approach to the elevator, stairway or ramp.
716.2.5.3 Glazing in door assemblies in corridors and smoke barriers. (From 716.5.3.2) In a 20-minute fire door assembly, the glazing material in the door itself shall have a minimum fire-protection-rated glazing of 20 minutes and shall be exempt from the hose stream test. ~~Glazing material in any other part of the door assembly, including transom lights and sidelights, shall be tested in accordance with NFPA 257 or UL 9, including the hose stream test, in accordance with Section 716.6.~~ (Relocated to new Section 716.2.1.3)
716.2.5.4 Glazing in fire door frames with transom lights and sidelights. (From 716.5.6) Door frames with transom lights, sidelights or both, shall be permitted where a 3/4-hour fire protection rating or less is required in accordance with Table ~~716.5~~**716.1.B.** Fire door frames with transom lights, sidelights, or both, installed with fire-resistance-rated glazing tested as an assembly in accordance with ASTM E 119 or UL 263 shall be permitted where a fire protection rating exceeding 3/4 hour is required in accordance with Table ~~716.5~~**716.1.B.**
716.2.6 Fire door hardware and closures. (New) Fire door hardware and closures shall be installed on fire door assemblies in accordance with requirements of this section.
716.2.6.1 Door closing. (From 716.5.9) Fire doors shall be latching and self- or automatic-closing in accordance with this section.
Exceptions:
1. Fire doors located in common walls separating sleeping units in Group R-1 shall be permitted without automatic- or self-closing devices.
2. The elevator car doors and the associated hoistway enclosure doors at the floor level designated for recall in accordance with Section 3003.2 shall be permitted to remain open during Phase I emergency recall operation.
716.2.6.2 Latch required. (From 716.5.9.1) Unless otherwise specifically permitted, single fire doors and both leaves of pairs of side-hinged swinging fire doors shall be provided with an active latch bolt that will secure the door when it is closed.
716.2.6.3 Chute intake door latching. (From 716.5.9.1.1) Chute intake doors shall be positive latching, remaining latched and closed in the event of latch spring failure during a fire emergency.
716.2.6.4 Automatic-closing fire door assemblies. (From 716.5.9.2) Automatic-closing fire door assemblies shall be self-closing in accordance with NFPA 80.
716.2.6.5 Smoke-activated doors. (From 716.5.9.3) Automatic-closing doors installed in the following locations shall be automatic-closing by the actuation of smoke detectors installed in accordance with Section 907.3 or by loss of power to the smoke detector or hold-open device. Doors that are automatic-closing by smoke detection shall not have more than a 10-second delay before the door starts to close after the smoke detector is actuated:
1. Doors installed across a corridor.
2. Doors installed in the enclosures of exit access stairways and ramps in accordance with Sections 1019 and 1023, respectively.
3. Doors that protect openings in exits or corridors required to be of fire-resistance-rated construction.
4. Doors that protect openings in walls that are capable of resisting the passage of smoke in accordance with Section 509.4.
5. Doors installed in smoke barriers in accordance with Section 709.5.
6. Doors installed in fire partitions in accordance with Section 708.6.
7. Doors installed in a fire wall in accordance with Section 706.8.
8. Doors installed in shaft enclosures in accordance with Section 713.7.
9. Doors installed in waste and linen chutes, discharge openings and access and discharge rooms in accordance with Section 713.13. Loading doors installed in waste and linen chutes shall meet the requirements of Sections ~~716.5.9~~**716.2.6.1** and ~~716.5.9.1.1~~**716.2.6.3.**
10. Doors installed in the walls for compartmentation of underground buildings in accordance with Section 405.4.2.
11. Doors installed in the elevator lobby walls of underground buildings in accordance with Section 405.4.3.
12. Doors installed in smoke partitions in accordance with Section 710.5.2.3.
716.2.6.6 Doors in pedestrian ways. (From 716.5.9.4) Vertical sliding or vertical rolling steel fire doors in openings through which pedestrians travel shall be heat activated or activated by smoke detectors with alarm verification.
716.2.7 Swinging fire shutters. (From 716.5.10) Where fire shutters of the swinging type are installed in exterior openings, not less than one row in every three vertical rows shall be arranged to be readily opened from the outside, and shall be identified by distinguishing marks or letters not less than 6 inches (152 mm) high.
716.2.8 Rolling fire shutters. (From 716.5.11) Where fire shutters of the rolling type are installed, such shutters shall include approved automatic-closing devices.
716.2.9 Labeled protective assemblies. (From 716.5.7) Fire door assemblies shall be labeled by an approved agency. The labels shall comply with NFPA 80, and shall be permanently affixed to the door or frame.
716.2.9.1 Fire door labeling requirements. (From 716.5.7.1) Fire doors shall be labeled showing the name of the manufacturer or other identification readily traceable back to the manufacturer, the name or trademark of the third party inspection agency, the fire protection rating and, where required for fire doors in interior exit stairways and ramps and exit passageways by Section ~~716.5.5~~**716.2.2.3,** the maximum transmitted temperature end point. Smoke and draft control doors complying with UL 1784 shall be labeled as such and shall comply with Section ~~716.5.7.3~~**716.2.9.3.** Labels shall be approved and permanently affixed. The label shall be applied at the factory or location where fabrication and assembly are performed.
716.2.9.1.1 Light kits, louvers and components. (From 716.5.7.1.1) Listed light kits and louvers and their required preparations shall be considered as part of the labeled door where such installations are done under the listing program of the third-party agency. Fire doors and door assemblies shall be permitted to consist of components, including glazing, vision light kits and hardware that are listed or classified and labeled for such use by different third-party agencies.
716.2.9.2 Oversized doors. (From 716.5.7.2) Oversized fire doors shall bear an oversized fire door label by an approved agency or shall be provided with a certificate of inspection furnished by an approved testing agency. Where a certificate of inspection is furnished by an approved testing agency, the certificate shall state that the door conforms to the requirements of design, materials and construction, but has not been subjected to the fire test.
716.2.9.3 Smoke and draft control door labeling requirements. (From 716.5.7.3) Smoke and draft control doors complying with UL 1784 shall be labeled in accordance with Section ~~716.5.7.1~~**716.2.9.1** and shall show the letter "S" on the fire-rating label of the door. This marking shall indicate that the door and frame assembly are in compliance where listed or labeled gasketing is installed.
716.2.9.4 Fire door frame labeling requirements. (From 716.5.7.4) Fire door frames shall be labeled showing the names of the manufacturer and the third-party inspection agency.
716.2.9.5 Fire door glazing labeling requirements. (From 716.5.8.3) Fire-rated glazing shall bear a label or other identification showing the name of the manufacturer, the test standard and information required in Table ~~716.3~~**716.1.A** that shall be issued by an approved agency and shall be permanently identified on the glazing.
716.2.9.6 Fire door operator labeling requirements. (From 716.7.5) Fire door operators for horizontal sliding doors shall be labeled and listed for use with the assembly.
716.2.10 Installation of fire door assemblies and fire shutter assemblies. (From 716.5) Fire door assemblies and shutters shall be installed in accordance with the provisions of this section and NFPA 80.

716.2.10.1 Doors assemblies in corridors and smoke barriers. (From 716.5.3.1) Installation of smoke doors shall be in accordance with NFPA 105.
716.3 Fire window assemblies. (New) Fire window assemblies required by other sections of this code shall comply with the provisions of this Section.
716.3.1 Testing requirements. (New, but wording similar to 716.5) Fire window assemblies shall be constructed of any material or assembly of component materials that conforms to the test requirements of Section 716.3.1.1 and 716.3.1.2 and the fire protection rating indicated in Table 716.1.C.
716.3.1.1 Testing under positive pressure. (From 716.6.1) NFPA 257 or UL 9 shall evaluate fire-protection-rated glazing under positive pressure. Within the first 10 minutes of a test, the pressure in the furnace shall be adjusted so not less than two-thirds of the test specimen is above the neutral pressure plane, and the neutral pressure plane shall be maintained at that height for the balance of the test.
716.3.1.2 Nonsymmetrical glazing systems. (From 716.6.2) Nonsymmetrical fire-protection-rated glazing systems in fire partitions, fire barriers or in exterior walls with a fire separation distance of 5 feet (1524 mm) or less pursuant to Section 705 shall be tested with both faces exposed to the furnace, and the assigned fire protection rating shall be the shortest duration obtained from the two tests conducted in compliance with NFPA 257 or UL 9.
716.3.2 Performance requirements. (New) Fire window assemblies shall be installed in the assemblies specified in Table 716.1.C and shall comply with the fire-protection rating specified.
716.3.2.1 Interior fire window assemblies. (From 716.6.7) Fire-protection-rated glazing used in fire window assemblies located in fire partitions and fire barriers shall be limited to use in assemblies with a maximum fire-resistance rating of 1 hour in accordance with this section.
716.3.2.1.1 Where 3/4-hour fire protection window assemblies permitted. (From 716.6.7.1) Fire-protection-rated glazing requiring 45-minute opening protection in accordance with Table ~~716.6~~716.1.C shall be limited to fire partition designed in accordance with Section 708 and fire barriers utilized in the applications set forth in Sections 707.3.6 and 707.3.8 where the fire-resistance rating does not exceed 1 hour. Fire-resistance-rated glazing assemblies tested in accordance with ASTM E 119 or UL 263 shall not be subject to the limitations of this section.
716.3.2.1.2 Area limitations. (From 716.6.7.2) The total area of the glazing in fire-protection-rated window assemblies shall not exceed 25 percent of the area of a common wall with any room.
716.3.2.1.3 Where 1/3-hour fire-protection window assemblies permitted. (From 716.6.7.3) Fire-protection-rated glazing shall be permitted in window assemblies tested to NFPA 257 or UL 9 in smoke barriers and fire partitions requiring 1/3-hour opening protection in accordance with Table ~~716.6~~**716.1.C.**
716.3.3 Fire window frames. (New) Fire window frames installed with a fire window assembly shall meet the fire-protection rating indicated in Table 716.1.C.
716.3.3.1 Window mullions. (From 716.6.6) Metal mullions that exceed a nominal height of 12 feet (3658 mm) shall be protected with materials to afford the same fire-resistance rating as required for the wall construction in which the protective is located.
716.3.4 Glazing in fire window assemblies. (From 716.6) Glazing in fire window assemblies shall be fire protection rated in accordance with this section and Table ~~716.6~~**716.1.**C. ~~Glazing in fire door assemblies shall comply with Section 716.5.8.~~ (Deleted as not relevant to reorganized document) Fire-protection-rated glazing in fire window assemblies shall be tested in accordance with and shall meet the acceptance criteria of NFPA 257 or UL 9. Fire-protection-rated glazing shall comply with NFPA 80. Openings in nonfire-resistance-rated exterior wall assemblies that require protection in accordance with Section 705.3, 705.8, 705.8.5 or 705.8.6 shall have a fire protection rating of not less than 3/4 hour. Fire-protection-rated glazing in 0.5-hour fire-resistance-rated partitions is permitted to have an 0.33-hour fire protection rating.
716.3.4.1 Glass and glazing. (From 716.6.4) Glazing in fire window assemblies shall be fire-protection-rated glazing installed in accordance with and complying with the size limitations set forth in NFPA 80.
716.3.5 Labeled protective assemblies. (New, but wording similar to 716.5.7) Glazing in fire window assemblies shall be labeled by an approved agency. The labels shall comply with NFPA 80, and shall comply with Section 716.3.5.2.
716.3.5.1 Fire window frames. (New) Fire window frames shall be approved for the intended application.
716.3.5.2 Fire window glazing labeling requirements. (From 716.6.8) Fire-protection-rated glazing shall bear a label or other identification showing the name of the manufacturer, the test standard and information required in Section ~~716.3.2~~**716.1.2.2.2**and Table ~~716.6~~ **716.1.C** that shall be issued by an approved agency and permanently identified on the glazing.
716.3.6 Installation. (New) Fire window assemblies shall be installed in accordance with the provisions of this Section.
716.3.6.1 Closure. (From 716.6.5) Fire-protection-rated glazing shall be in the fixed position or be automatic-closing and shall be installed in approved frames.

Renumber Existing Tables as Follows
1. Table 716.3 becomes Table 716.1.A
2. Table 716.5 becomes Table 716.1.B
3. Table 716.6 becomes Table 716.1.C

Cost Impact: Will not increase the cost of construction
This code change is a reorganization of existing requirements. No new requirements for providing opening protectives have been added.

FS 101-15 : 716 (New)-ZUBIA4433

FS 102-15

Part I:
202 (New), 717 (New), 717.1 (New), 717.2 (New), 717.3 (New), 721.1.17 (New), Chapter 35
Part II:
404.6, 717 (New), 717.1 (New), 717.2 (New), 717.3 (New), 202 (New), Chapter 35
Part III:
202, 717 (New), 717.1 (New), 717.2 (New), 717.3 (New), 1019.3, Chapter 35

THIS IS A 3 PART CODE CHANGE. ALL PARTS WILL BE HEARD BY THE IBC-FIRE SAFETY COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THIS COMMITTEE.

Proponent: Stephen Thomas, Colorado Code Consulting, LLC, representing Smoke Guard (sthomas@coloradocode.net)

Part I

2015 International Building Code

Add new definition as follows:

SECTION 202 DEFINITIONS

Fire Curtain FIRE CURTAIN. A flexible membrane assembly constructed of materials designed to restrict the spread of fire when tested in accordance with UL 10D.

Add new text as follows:

SECTION717 Fire and Smoke Curtains

717.1 General Fire and smoke curtains permitted by other sections of this code shall comply with the provisions of this section.

717.2 Fire Test Criteria Fire and smoke curtains shall be tested in accordance with the requirements of UL 10D.

717.3 Activation Fire and smoke curtains shall comply with the following criteria:

1. Fire and smoke curtains shall be actuated by approved spot-type detectors listed for releasing service.
2. Fire detection systems providing control input or output signals to fire and smoke curtains or elements thereof shall comply with the requirements of Section 907. Such systems shall be equipped with a control unit complying with UL 864 and listed as smoke control equipment.

721.1.17 Fire curtains. Vertical floor openings shall be permitted where protected by a fire curtain in accordance with Section 717. Fire curtains shall achieve a minimum one-hour fire-protection rating, and not less than the assembly being penetrated, but need not exceed 2 hours.

Add new standard(s) as follows:
UL 10D-2014 Standard for Fire Tests of Fire Protective Curtain Assemblies

Part II

2015 International Building Code

Revise as follows:

404.6 Enclosure of atriums. *Atrium* spaces shall be separated from adjacent spaces by a 1-hour *fire barrier* constructed in accordance with Section 707 or a *horizontal assembly* constructed in accordance with Section 711, or both.

Exceptions:

1. A *fire barrier* is not required where a glass wall forming a smoke partition is provided. The glass wall shall comply with all of the following:
    1.1. Automatic sprinklers are provided along both sides of the separation wall and doors, or on the room side only if there is not a walkway on the *atrium* side. The sprinklers shall be located between 4 inches and 12 inches (102 mm and 305 mm) away from the glass and at intervals along the glass not greater than 6 feet (1829 mm). The sprinkler system shall be designed so that the entire surface of the glass is wet upon activation of the sprinkler system without obstruction;
    1.2. The glass wall shall be installed in a gasketed frame in a manner that the framing system deflects without breaking (loading) the glass before the sprinkler system operates; and
    1.3. Where glass doors are provided in the glass wall, they shall be either *self-closing* or automatic-closing.

2. A *fire barrier* is not required where a glass-block wall assembly complying with Section 2110 and having a $^{3}/_{4}$-hour *fire protection rating* is provided.
3. A *fire barrier* is not required between the *atrium* and the adjoining spaces of any three floors of the *atrium* provided such spaces are accounted for in the design of the smoke control system.
4. A fire barrier is not required between the atrium and the adjoining spaces when a fire curtain having a one-hour fire-protection rating in accordance with Section 717 is installed at the perimeter of the atrium opening. The curtain shall not be placed in such a location as to obstruct the means of egress.

Add new text as follows:

SECTION717 Fire and Smoke Curtains

717.1 General Fire and smoke curtains permitted by other sections of this code shall comply with the provisions of this section.

717.2 Fire Test Criteria Fire and smoke curtains shall be tested in accordance with the requirements of UL 10D.

717.3 Activation Fire and smoke curtains shall comply with the following criteria:

1. Fire and smoke curtains shall be actuated by approved spot-type detectors listed for releasing service.
2. Fire detection systems providing control input or output signals to fire and smoke curtains or elements thereof shall comply with the requirements of Section 907. Such systems shall be equipped with a control unit complying with UL 864 and listed as smoke control equipment.

Add new definition as follows:

SECTION 202 DEFINITIONS

FIRE CURTAIN A flexible membrane assembly constructed of materials designed to restrict the spread of fire when tested in accordance with UL 10D.

Add new standard(s) as follows:
UL 10D-2014 Standard for Fire Tests of Fire Protective Curtain Assemblies

Part III

2015 International Building Code

Add new definition as follows:

SECTION 202 DEFINITIONS

FIRE CURTAIN. A flexible membrane assembly constructed of materials designed to restrict the spread of fire when tested in accordance with UL 10D.

Add new text as follows:

SECTION717 Fire and Smoke Curtains

717.1 General Fire and smoke curtains permitted by other sections of this code shall comply with the provisions of this section.

717.2 Fire Test Criteria Fire and smoke curtains shall be tested in accordance with the requirements of UL 10D.

717.3 Activation Fire and smoke curtains shall comply with the following criteria:

1. Fire and smoke curtains shall be actuated by approved spot-type detectors listed for releasing service.
2. Fire detection systems providing control input or output signals to fire and smoke curtains or elements thereof shall comply with the requirements of Section 907. Such systems shall be equipped with a control unit complying with UL 864 and listed as smoke control equipment.

Revise as follows:

1019.3 Occupancies other than Groups I-2 and I-3. In other than Group I-2 and I-3 occupancies, floor openings containing *exit access stairways* or *ramps* that do not comply with one of the conditions listed in this section shall be enclosed with a shaft enclosure constructed in accordance with Section 713.

1. *Exit access stairways* and *ramps* that serve or atmospherically communicate between only two stories. Such interconnected stories shall not be open to other stories.
2. In Group R-1, R-2 or R-3 occupancies, *exit accessstairways* and *ramps* connecting four stories or less serving and contained within an individual *dwelling unit* or *sleeping unit* or *live/work unit.*
3. *Exit access stairways* serving and contained within a Group R-3 congregate residence or a Group R-4 facility are not required to be enclosed.
4. *Exit access stairways* and *ramps* in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, where the area of the vertical opening between stories does not exceed twice the horizontal projected area of the *stairway* or *ramp* and the opening is protected by a draft curtain and closely spaced sprinklers in accordance with NFPA 13. In other than Group B and M occupancies, this provision is limited to openings that do not connect more than four stories.
5. *Exit access stairways* and *ramps* within an *atrium* complying with the provisions of Section 404.
6. *Exit access stairways* and *ramps* in *open parking garages* that serve only the parking garage.
7. *Exit access stairways* and *ramps* serving open-air seating complying with the *exit access* travel distance requirements of Section 1029.7.
8. *Exit access stairways* and *ramps* serving the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, *places of religious worship*, auditoriums and sports facilities.
9. Stairways that serve, or atmospherically communicate between a maximum of four stories, and are not part of the required means of egress shall be permitted to be enclosed by a fire curtain installed in accordance with Section 717.

Add new standard(s) as follows:
UL 10D-2014 Standard for Fire Tests of Fire Protective Curtain Assemblies

Reason:

Part I: This proposal introduces fire curtains into the code to be used in protecting vertical openings. The current code has several different ways to protect these openings. These curtains have been tested in accordance with UL 10D which is similar to UL 263 without the hose stream test. Horizontal assemblies are not required to pass the hose stream test. Therefore, the standards are similar in how they evaluate the system. This proposal would permit a horizontally deployed curtain that would enclose the vertical floor opening and provide the same protection as the horizontal assembly.

Part II: Section 404.6 requires that an atrium be separated from other spaces of the building by a one-hour fire barrier. The exceptions to that requirement permit the installation of a non-fire rated assembly in exception 1. ThIS proposal will permit the installation of a fire curtain around the perimeter of the atrium as an additional option. It is our position that a fire curtain provides an equivalent level of protection to glass forming a smoke partition protected by automatic sprinklers outlined in exception 1. In fact, this installation has been approved by many jurisidictions as an equivalent design. The intent of the exception is to provide a smoke separation at the atrium. The proposal is also creating a new section and definition to address the testing and installation requirements for the curtain. UL 10D has been specified as the test standard for the fire curtains. It is similar to other fire-resistance tests with the exception of a hose stream test.

Part III: This proposal presents a new type of separation requirement for exit access stairways. It introduces the concept of fire curtains into the code and permits their use to enclose exit access stairs that serve a maximum of four stories. Fire curtains are tested to UL 10D which does not include the hose stream test. The intent is to allow an alternative to a full enclosure. The current code permits stairs to be open between adjacent stories without enclosure. This proposal is also consistent with the protection that Exception 4 of Section 1099.3 provides, with the draft curtain and closely spaced sprinklers. In fact, the fire curtain will provide a better level of protection than the 18 inch draft curtains.

Cost Impact:

Part I: Will not increase the cost of construction
By installing a horizontal curtain across a floor opening, the need for a smoke control system can be eliminated. Therefore, this proposal will reduce the cost of construction.

Part II: Will not increase the cost of construction
This change will reduce the cost of construction. It will decrease the volume of the atrium and reduce the cost of the smoke control system in a building.

Part III: Will not increase the cost of construction
This change provides an alternate to enclosing stairs. Therefore, the cost of construction will not be affected.

Analysis:

Part I: A review of the standard proposed for inclusion in the code, UL 10D, 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, 2015.

Part II: A review of the standard proposed for inclusion in the code, UL 10D, 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, 2015.

Part III: A review of the standard proposed for inclusion in the code, UL 10D, 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, 2015.

FS 102-15 : 717 (New)-THOMAS4504

FS 103-15

717.1.2 (IMC 607.1.2)

Proponent: Homer Maiel, PE, CBO, representing ICC Tri-Chapter (Peninsula, East Bay, Monterey Bay) (hmaiel@gmail.com)

2015 International Building Code

Revise as follows:

717.1.2 Ducts that penetrate fire-resistance-rated assemblies without dampers. Ducts that penetrate fire-resistance-rated ~~assemblies~~ walls and are not required by this section to have *dampers* shall comply with the requirements of Sections 714.2 through 714.3.3. Ducts that penetrate *horizontal assemblies* not required to be contained within a shaft and not required by this section to have *dampers* shall comply with the requirements of Sections 714.4 through 714.5.2.

Reason: The purpose of this proposal is to clarify that Section 714.3 is on rated walls and 714.3 is on horizontal assemblies. To say "fire-resistance-rated assemblies" may confuse some code users.

Cost Impact: Will not increase the cost of construction
This proposal will not increase cost of construction.Since this proposal is only clarification to the code language, it will not increase the cost of construction. Here, "assemblies" actually is eluding to "walls" all along. There are no newly added technical requirements that would trigger additional cost.

FS 104-15

714.1.1, 717.1.2

Proponent: Tony Crimi, representing International Firestop Council (tcrimi@sympatico.ca)

2015 International Building Code

714.1.1 Ducts and air transfer openings. Penetrations of fire-resistance-rated walls by ducts that are not protected with *dampers* shall comply with Sections 714.2 through 714.3.3. Penetrations of *horizontal assemblies* not protected with a shaft as permitted by Section 717.6, and not required to be protected with fire *dampers* by other sections of this code, shall comply with Sections 714.4 through 714.5.2. Ducts and air transfer openings that are protected with *dampers* shall comply with Section 717.

Revise as follows:

717.1.2 Ducts that penetrate fire-resistance-rated assemblies without dampers. Ducts that penetrate fire-resistance-rated assemblies and are not required by this section to have *fire dampers* shall comply with the requirements of Sections 714.2 through 714.3.3. Ducts that penetrate *horizontal assemblies* not required to be contained within a shaft and not required by this section to have *fire dampers* shall comply with the requirements of Sections 714.4 through 714.5.2.

Reason: This proposal is editorial in nature, but may have minor technical implications for some jurisdictions. The proposal clarifies that requirement to comply with 714.2 through 714.3.3, and 714.4 through 714.5.2 applies to all ducts that penetrate fire resistance-rated assemblies, not contained within a shaft, and not required by this section to have fire dampers. This change would then employ the defined terminology "*fire damper*" instead of the term "damper", which can include "Ceiling radiation dampers," "Combination fire/smoke dampers," "Corridor dampers," "Fire dampers" and "Smoke dampers.".

The exception to the provisions for firestopping should not be applied when only smoke dampers, ceiling radiation dampers, corridor dampers are required to be installed.

Cost Impact: Will not increase the cost of construction
The proposal switches between one of the two options already required. Either fire dampers or firestopping is currently required.

FS 104-15 : 717.1.2-CRIMI4311

FS 105-15

717.2.1 (IMC 607.2.1), Chapter 35

Proponent: Tony Crimi, representing International Firestop Council (tcrimi@sympatico.ca)

2015 International Building Code

Revise as follows:

717.2.1 Smoke control system. Where the installation of a *fire damper* will interfere with the operation of a required smoke control system in accordance with Section 909, ducts used to supply uncontaminated air shall be protected with a shaft enclosures in accordance with Section 713, or tested in accordance with ASTM E2816-11, with a minimum F and T rating of not less than 2 hours, continuously from the air handling appliance or equipment to the air outlet and inlet terminal, or *approved* alternative protection shall be utilized. Where mechanical systems including ducts and *dampers* utilized for normal building ventilation serve as part of the smoke control system, the expected performance of these systems in smoke control mode shall be addressed in the rational analysis required by Section 909.4.

Add new standard(s) as follows:
ASTM E2816-11, Standard Test Methods for Fire Resistive Metallic HVAC Duct Systems.

Reason: This proposal would require HVAC ducts installed for the purposes of stairwell pressurization to be enclosed within a shaft or protected by a tested and listed assembly conforming to the new ASTM E2816-11, Standard Test Methods for Fire Resistive Metallic HVAC Duct Systems evaluated for the specific purpose. The new ASTM Standard evaluates the HVAC duct systems for surface burning characteristics, non-combustibility, fire resistance, durability, and fire engulfment with horizontal and vertical through-penetration firestops. The Standard can evaluate the fire performance of HVAC ducts for both supply (pressurization) and return air, in the vertical and horizontal orientation, with or without openings. These test methods evaluate the ability of a HVAC duct system to resist the spread of fire from one compartment to another compartment separated by fire resistance rated construction when the HVAC duct system is exposed to fire from the outside of the horizontal or vertical HVAC duct system, or from the outside with hot gases entering the inside of the HVAC duct system from unprotected openings, when subjected to the standard time-temperature curve of ASTM E119. This test is now also referenced as part of ICC-ES AC179, Acceptance Criteria for Metallic HVAC Duct Enclosure Assemblies.

The purpose of these acceptance criteria is to establish requirements for fire protection enclosure systems applied to metallic HVAC ducts, which provides an alternate to required fire-resistance-rated shafts or an alternate to required fire dampers in specific locations. This criteria provides an alternate to shaft enclosures for vertical ducts, and an alternate to fire dampers in horizontal ducts (penetrating fire barriers, fire partitions, and or smoke barriers) and vertical ducts connecting multiple stories. The purpose of a closed pressurization system is to provide fresh air directly to stairwells or egress areas. This design air pressures need to be sufficient to maintain closed doors while preventing smoke from entering the egress path. Smoke control systems have been required in nearly two thirds of the United States for over a decade. High-rise buildings constructed to the requirements of International Building Code, but without any specific measures to control smoke migration, are all the more vulnerable to property damage and occupants' loss of life.

Pressurization results in airflows of high velocity in the gaps around closed doors and construction cracks, thereby preventing smoke from flowing back into the pressurized space through these openings. Pressurized stairwells are provided with the goal of maintaining a tenable environment within the escape routes in the event of a building fire. While the option to use stairwell pressurization exists, the IBC does not require stairwell pressurization in high-rise buildings, and only requires smoke control in underground buildings, atriums, and covered mall buildings. Section 403.5.4 of the 2012 IBC requires smokeproof exit enclosures for high-rise buildings in every required stairway serving floors more than 75 feet (22.86 m) above the ground. Section 909.20.5 merely permits sprinklered buildings to use stairwell pressurization as an alternate to the smokeproof enclosures. When employed, ducts used for Stair pressurization to provide uncontaminated air within required interior exit stairwells or areas of egress need to be protected from the effect of fire, or constructed as fire resistant systems.

This principle of protecting HVAC ducts used as part of a smoke control system from the effects of fire exposure is already contained in section 909.4 as part of a rational analysis supporting the design of smoke control systems to be employed. Section 909.4.4 requires that the design shall consider the effects of the heating, ventilating and air-conditioning (HVAC) systems on both smoke and fire transport. The analysis must include all permutations of systems status, and the design shall consider the effects of the fire on the HVAC systems.

Particularly in the case of tall buildings, the predominant factors that cause smoke movement are stack effects, the affect of external wind forces, and forced air movement within the building. Smoke removal and venting practices are complicated by stack effects, which will tend to favour natural air movement vertically through the building as a results of differences in temperature and densities between the inside and outside air. [1]

Options such as the use of natural ventilation are only available where openings in exterior stairwells can be accommodated. Even then, a number of problems have been identified with this approach. Firstly, the required volume of fresh air is high. Secondly, natural supply and exhaust through vents may be subject to adverse exterior wind conditions, and even when functioning satisfactorily, would generally require vents located on different exterior walls. Thirdly, the performance of natural vents is influenced by building stack effects, which may be particularly significant on the upper or lowermost stories for tall buildings. This effect can range from either strong inflow or strong outflow from all natural vents on a given storey.[2]

Bibliography: 1. Klote, J.H. and Milke, J.A. Fire Protection Handbook, NFPA 19th Edition, Volume II, Smoke Movement in Buildings, Chapter 6, Section 12-113 –12-126
2. Building Research Establishment, UK, Smoke Ventillation of Common Access Areas of Flats & Maisonettes (BD2410), Final Factual Report, Appendix A (Review), BRE Ltd, 2005

Cost Impact: Will increase the cost of construction
This proposal introduces a neccessary life safety feature that is often overlooked.

Analysis: A review of the standard proposed for inclusion in the code, ASTM E2816, 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, 2015.

FS 105-15 : 717.2.1-CRIMI4313

FS 106-15

717.2.3 (New) [IMC 607.2.3 (New)]

Proponent: Rebecca Baker, representing Colorado Association of Plumbing and Mechanical Officials (CAPMO) (bbaker@co.jefferson.co.us)

2015 International Building Code

Add new text as follows:

717.2.3 Smoke damper location. Smoke damper blades in the closed position shall be located at or adjacent to but not more than 24 inches away from the smoke barrier or partition penetration. There shall be no inlets or outlets between the damper and the smoke barrier.

Reason: This user friendly language is found in all smoke damper installation instructions that few in the industry are aware of. This language will aid in understanding the flexibility associated with property location requirements for installers, designers and inspectors. These requirements can be found in Greenheck, Ruskin, Pottorff and all the other manufactureres instructions. One of the problems is UL 555-S only requires that one set of instructions be furnished *per shipment* of dampers and are rarely available for those who may need them in the field. This is consistent with NFPA 90.A

Cost Impact: Will not increase the cost of construction
This new section calls out the existing requirement in the code rather than the manufacturers information, which is often not readily available. By having the requirement, which increases flexibility, easier to find the new code section may actually reduce costs.

FS 107-15

717.3.1 (IMC 607.3.1)

Proponent: Jonathan Roberts, UL LLC, representing UL LLC (jonathan.roberts@ul.com)

2015 International Building Code

Revise as follows:

717.3.1 Damper testing. Dampers shall be listed and labeled in accordance with the standards in this section.

1. Fire dampers shall comply with the requirements of UL 555. Only fire ~~dampers and ceiling radiation~~ dampers labeled for use in dynamic systems shall be installed in heating, ventilation and air-conditioning systems designed to operate with fans on during a fire.
2. Smoke dampers shall comply with the requirements of UL 555S.
3. Combination fire/smoke dampers shall comply with the requirements of both UL 555 and UL 555S.
4. Ceiling radiation dampers shall comply with the requirements of UL 555C or shall be tested as part of a fire-resistance-rated floor/ceiling or roof/ceiling assembly in accordance with ASTM E119 or UL 263. Only *ceiling radiation dampers* labeled for use in dynamic systems shall be installed in heating, ventilation and air-conditioning systems designed to operate with fans on during a fire.
5. Corridor dampers shall comply with requirements of both UL 555 and UL 555S. Corridor dampers shall demonstrate acceptable closure performance when subjected to 150 feet per minute (0.76 mps) velocity across the face of the damper during the UL 555 fire exposure test.

Reason: The phrase "and ceiling radiation dampers" was added to Section 717.3.1, Provision 1 during the previous code cycle to differentiate ceiling radiation dampers labeled for use in dynamic systems. However, Provision 1 deals with fire dampers so the reference to ceiling radiation dampers is inappropriate. This proposal relocates the reference to ceiling radiation dampers labeled for use in dynamic systems to Provision 4 addressing ceiling radiation dampers.

Cost Impact: Will not increase the cost of construction
This code change simply clarifies the current requirements.

FS 108-15

717.3.2.1 (IMC 607.3.2.1), 717.3.2.3 (IMC 607.3.2.3)

Proponent: Jonathan Roberts, UL LLC, representing UL LLC (jonathan.roberts@ul.com)

2015 International Building Code

Revise as follows:

717.3.2.1 Fire damper ratings. *Firedampers* shall have the minimum ~~*fire protection* rating~~ specified in Table 717.3.2.1 for the type of penetration.

717.3.2.3 Combination fire/smoke damper ratings. *Combination fire/smokedampers* shall have the minimum ~~*fire protection rating*~~ specified for *firedampers* in Table 717.3.2.1 ~~for the type of penetration~~ and shall have ~~a~~the minimum rating specified for *smoke* ~~*damper*~~*dampers* ~~rating as specified~~ in Section 717.3.2.2.

Reason: This proposal is intended to clarify the requirements in this section. The term "fire-protection rating" is being changed to "rating" because fire dampers carry an hourly rating, not a "fire-protection rating". The term "for the type of penetration" was deleted because it is not needed.

Cost Impact: Will not increase the cost of construction
This simply clarifies the existing requirements.

FS 108-15 : 717.3.2.1-ROBERTS4045

FS 109-15

717.5.2 (IMC 607.5.2), Chapter 35

Proponent: Tony Crimi, representing International Firestop Council (tcrimi@sympatico.ca)

2015 International Building Code

Revise as follows:

717.5.2 Fire barriers. Ducts and air transfer openings of *fire barriers* shall be protected with *approved fire dampers* installed in accordance with their listing. Ducts and air transfer openings shall not penetrate enclosures for *interior exit* stairways and ramps and exit passageways, except as permitted by Sections 1023.5 and 1024.6, respectively.

Exception: *Fire dampers* are not required at penetrations of *fire barriers* where any of the following apply:

1. Penetrations are tested in accordance with ASTM E 119 or UL 263 as part of the fire-resistance-rated assembly.
2. Ducts are used as part of an *approved* smoke control system in accordance with Section 909 and where the use of a *fire damper* would interfere with the operation of a smoke control system.
3. Such walls are penetrated by ducted HVAC systems, have a required *fire-resistance rating* of 1 hour or less, are in areas of other than Group H and are in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2. For the purposes of this exception, a ducted HVAC system shall be a duct system for conveying supply, return or exhaust air as part of the structure's HVAC system. Such a duct system shall be constructed of sheet steel not less than No. 26 gage thickness and shall be continuous from the air-handling appliance or equipment to the air outlet and inlet terminals.
4. <u>HVAC ducts are installed as tested in accordance with ASTM E2816-11, and achieve a minimum F and T rating of not less than 2 hours, continuously from the air handling appliance or equipment to the air outlet and inlet terminal.</u>

Add new standard(s) as follows:

<u>ASTM E2816-11, Standard Test Methods for Fire Resistive Metallic HVAC Duct Systems.</u>

Reason: This proposal permits an additional exception to the requirement to install fire dampers in duct and air transfer openings through fire barriers provided the HVAC ducts are protected by a tested and listed assembly conforming to the new ASTM E2816-11, Standard Test Methods for Fire Resistive Metallic HVAC Duct Systems evaluated for the specific purpose. The test method evaluates the ability of a HVAC duct system to resist the spread of fire from one compartment to another compartment separated by a fire resistance rated construction when the HVAC duct system is exposed to fire.

The level of fire protection offered by the proposal is typically greater than currently required by Table 717.3.2.1 for fire dampers. For example, a typical 2-hour fire-resistance rated construction only requires a fire damper having a 1-1/2-hour fire-resistance rating, whereas the duct will maintain the same fire-resistance rating of the building construction being penetrated by the duct. In addition to providing protection against flame passage, like a fire damper, these ducts provide a reduction in temperature transmission across the surface of the duct through the rated assembly.

This ASTM Standard is now referenced as part of ICC-ES AC179, Acceptance Criteria for Metallic HVAC Duct Enclosure Assemblies. The purpose of these acceptance criteria is to establish requirements for fire protection enclosure systems applied to metallic HVAC ducts, which provides an alternate to required fire-resistance-rated shafts or an alternate to required fire dampers in specific locations. This proposal is consistent with AC 179 criterion providing an alternate to shaft enclosures for vertical ducts, and an alternate to fire dampers in horizontal ducts (penetrating fire barriers, fire partitions, and or smoke barriers) and vertical ducts.

Cost Impact: Will not increase the cost of construction
This proposal adds another option for designers. The option would most commonly be used when it reduces the cost of construction.

Analysis: A review of the standard proposed for inclusion in the code, ASTM E2816, 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, 2015.

FS 110-15

717.5.2 (IMC 607.5.2), 717.5.3 (IMC 607.5.5)

Proponent: Homer Maiel, PE, CBO, representing ICC Tri-Chapter (Peninsula, East Bay, Monterey Bay) (hmaiel@gmail.com)

2015 International Building Code

Revise as follows:

717.5.2 Fire barriers. Ducts and air transfer openings of *fire barriers* shall be protected with ~~*approved*~~ *listed* *fire dampers* installed in accordance with their listing. Ducts and air transfer openings shall not penetrate enclosures for *interior exit* stairways and ramps and exit passageways, except as permitted by Sections 1023.5 and 1024.6, respectively.

Exception: In occupancies other than Group H,~~*Fire*~~*fire dampers* are not required at penetrations of *fire barriers* where any of the following apply:

1. Penetrations are tested in accordance with ASTM E 119 or UL 263 as part of the fire-resistance-rated assembly.
2. Ducts are used as part of an *approved* smoke control system in accordance with Section 909 and where the use of a *fire damper* would interfere with the operation of a smoke control system.
3. Such walls are penetrated by ducted HVAC systems, have a required *fire-resistance rating* of 1 hour or less, are in areas of other than Group H and are in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2. For the purposes of this exception, a ducted HVAC system shall be a duct system for conveying supply, return or exhaust air as part of the structure's HVAC system. Such a duct system shall be constructed of sheet steel not less than No. 26 gage thickness and shall be continuous from the air-handling appliance or equipment to the air outlet and inlet terminals.

717.5.3 Shaft enclosures. Shaft enclosures that are permitted to be penetrated by ducts and air transfer openings shall be protected with ~~*approved*~~ *listed* fire and smoke *dampers* installed in accordance with their listing.

Exceptions:

1. ~~*Fire*~~In occupancies other than Group H,*fire dampers* are not required at penetrations of shafts where any of the following criteria are met:
    1.1. Steel exhaust subducts are extended not less than 22 inches (559 mm) vertically in exhaust shafts, provided there is a continuous airflow upward to the outside.
    1.2. Penetrations are tested in accordance with ASTM E 119 or UL 263 as part of the fire-resistance-rated assembly.
    1.3. Ducts are used as part of an *approved* smoke control system designed and installed in accordance with Section 909 and where the *firedamper* will interfere with the operation of the smoke control system.
    1.4. The penetrations are in parking garage exhaust or supply shafts that are separated from other building shafts by not less than 2-hour fire-resistance-rated construction.
2. In Group B and R occupancies equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, *smokedampers* are not required at penetrations of shafts where all of the following criteria are met:
    2.1. Kitchen, clothes dryer, bathroom and toilet room exhaust openings are installed with steel exhaust subducts, having a minimum wall thickness of 0.0187-inch (0.4712 mm) (No. 26 gage).
    2.2. The subducts extend not less than 22 inches (559 mm) vertically.
    2.3. An exhaust fan is installed at the upper terminus of the shaft that is powered continuously in accordance with the provisions of Section 909.11, so as to maintain a continuous upward airflow to the outside.
3. *Smoke dampers* are not required at penetration of exhaust or supply shafts in parking garages that are separated from other building shafts by not less than 2-hour fire-resistance-rated construction.
4. *Smoke dampers* are not required at penetrations of shafts where ducts are used as part of an *approved* mechanical smoke control system designed in accordance with Section 909 and where the *smoke damper* will interfere with the operation of the smoke control system.
5. *Fire dampers* and *combination fire/smokedampers* are not required in kitchen and clothes dryer exhaust systems where installed in accordance with the *International Mechanical Code*.

Reason: Section 717.5.4 (fire partitions) already exclude H occupancies from these exceptions. Fire barriers which are more restrictive than fire partitions should have the same requirements. in entire Section 717.5, fire and smoke dampers or combination of F/S dampers are required to be "listed", except for these two locations that are calling for "approved" for no apparent reason.

Cost Impact: Will increase the cost of construction

This proposal could potentially increase the cost of construction. Switching from "approved" to "listed" could increase the cost of construction. The definition for "approved" is: "Acceptable to the code official or AHJ". This leaves it to the discretion of the AHJ on how to approve a damper. On the other hand, the definition of "listed" is more specific to evaluation of products by a recognized laboratory or a testing agency.

The other change, excluding H Occupancies from this exception, will increase the cost of construction since all ducts penetrating shaft enclosures in H Occupancies will, now, have to be equipped with fire dampers.

FS 110-15 : 717.5.2-MAIEL4399

FS 111-15

717.5.2 (IMC 607.5.2), 717.5.3 (IMC 607.5.5)

Proponent: Jonathan Roberts, UL LLC, representing UL LLC (jonathan.roberts@ul.com)

2015 International Building Code

Revise as follows:

717.5.2 Fire barriers. Ducts and air transfer openings of *fire barriers* shall be protected with listed~~approved~~ *fire dampers* installed in accordance with their listing. Ducts and air transfer openings shall not penetrate enclosures for *interior exit* stairways and ramps and exit passageways, except as permitted by Sections 1023.5 and 1024.6, respectively.

Exception: *Fire dampers* are not required at penetrations of *fire barriers* where any of the following apply:

1. Penetrations are tested in accordance with ASTM E 119 or UL 263 as part of the fire-resistance-rated assembly.
2. Ducts are used as part of an *approved* smoke control system in accordance with Section 909 and where the use of a *fire damper* would interfere with the operation of a smoke control system.
3. Such walls are penetrated by ducted HVAC systems, have a required *fire-resistance rating* of 1 hour or less, are in areas of other than Group H and are in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2. For the purposes of this exception, a ducted HVAC system shall be a duct system for conveying supply, return or exhaust air as part of the structure's HVAC system. Such a duct system shall be constructed of sheet steel not less than No. 26 gage thickness and shall be continuous from the air-handling appliance or equipment to the air outlet and inlet terminals.

717.5.3 Shaft enclosures. Shaft enclosures that are permitted to be penetrated by ducts and air transfer openings shall be protected with ~~*approved*~~listed fire and smoke *dampers* installed in accordance with their listing.

Exceptions:

1. *Firedampers* are not required at penetrations of shafts where any of the following criteria are met:
    1.1. Steel exhaust subducts are extended not less than 22 inches (559 mm) vertically in exhaust shafts, provided there is a continuous airflow upward to the outside.
    1.2. Penetrations are tested in accordance with ASTM E 119 or UL 263 as part of the fire-resistance-rated assembly.
    1.3. Ducts are used as part of an *approved* smoke control system designed and installed in accordance with Section 909 and where the *firedamper* will interfere with the operation of the smoke control system.
    1.4. The penetrations are in parking garage exhaust or supply shafts that are separated from other building shafts by not less than 2-hour fire-resistance-rated construction.
2. In Group B and R occupancies equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, *smokedampers* are not required at penetrations of shafts where all of the following criteria are met:
    2.1. Kitchen, clothes dryer, bathroom and toilet room exhaust openings are installed with steel exhaust subducts, having a minimum wall thickness of 0.0187-inch (0.4712 mm) (No. 26 gage).
    2.2. The subducts extend not less than 22 inches (559 mm) vertically.
    2.3. An exhaust fan is installed at the upper terminus of the shaft that is powered continuously in accordance with the provisions of Section 909.11, so as to maintain a continuous upward airflow to the outside.
3. *Smoke dampers* are not required at penetration of exhaust or supply shafts in parking garages that are separated from other building shafts by not less than 2-hour fire-resistance-rated construction.
4. *Smoke dampers* are not required at penetrations of shafts where ducts are used as part of an *approved* mechanical smoke control system designed in accordance with Section 909 and where the *smoke damper* will interfere with the operation of the smoke control system.
5. *Fire dampers* and *combination fire/smokedampers* are not required in kitchen and clothes dryer exhaust systems where installed in accordance with the *International Mechanical Code*.

Reason: Section 717.3.1 of the 2015 International Building Code is very clear that all five types of dampers shall be listed and labeled. However there are two provisions within Section 717 which reference "approved" dampers instead of "listed" dampers. This intent of this proposal is simply to bring consistency in terminology within Section 717. This does not represent a technical change, as Section 717.3.1 already requires dampers to be listed and labeled.

Cost Impact: Will not increase the cost of construction
This does not represent a technical change, as Section 717.3.1 already requires dampers to be listed and labeled.

FS 112-15

717.5.2 (IMC 607.5.2)

Proponent: James Peterkin, representing Self (jpeterki@heery.com)

2015 International Building Code

Revise as follows:

717.5.2 Fire barriers. Ducts and air transfer openings of *fire barriers* shall be protected with *approved fire dampers* installed in accordance with their listing. Ducts and air transfer openings shall not penetrate enclosures for *interior exit* stairways and ramps and exit passageways, except as permitted by Sections 1023.5 and 1024.6, respectively.

Exception: *Fire dampers* are not required at penetrations of *fire barriers* where any of the following apply:

1. Penetrations are tested in accordance with ASTM E 119 or UL 263 as part of the fire-resistance-rated assembly.
2. Ducts are used as part of an *approved* smoke control system in accordance with Section 909 and where the use of a *fire damper* would interfere with the operation of a smoke control system.
3. Such walls are penetrated by fully ducted HVAC systems, have a required *fire-resistance rating* of 1 hour or less, are in areas of other than Group H and are in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2. For the purposes of this exception, a fully ducted HVAC system shall be a duct system for conveying supply, return or exhaust air as part of the structure's HVAC system. Such a duct system shall be constructed of sheet steel not less than No. 26 gage thickness and shall be continuous from the air-handling appliance or equipment to the air outlet and inlet terminals. Flexible connections shall be permitted in the following locations:

   1. Non-metal flex connections shall be permitted at the duct connection to the Air Handling Unit or Equipment located within the mechanical room.
   2. Non-metal flex connections shall be permitted from an overhead metal duct to a ceiling diffuser within the same room.

Reason: The code currently implies that any flex duct (or equipment flex connections) negates the use of the exception for fire dampers in 1 hour walls in fully ducted, fully sprinklered buildings.

The code permits the omission of the fire damper for a metal duct system that terminates either at a wall (such as a sidewall grille) or continues on to a duct opening past the fire barrier and has openings in the duct ("continuous from the air-handling appliance or equipment to the air outlet and inlet terminals"). This section does not even prohibit openings to be on both sides of the duct as long as the openings are in metal duct. However, for some reason, if flex duct is used to connect a metal duct to a ceiling diffuser (standard practice) this triggers the requirement for a fire damper. See attached sketch.
The flex connection within the concealed space does not constitute a greater hazard then other conditions that would permit the omission of the fire dampers.

Likewise, an flex connection at the AHU within the mechanical space does not constitute a hazard that should trigger the fire damper within the system

As noted above, this exception only applies in fully sprinklered buildings.

Cost Impact: Will not increase the cost of construction
The proposed wording will clear up this interpretation and reduce the cost of fire damper installation and maintenance in locations that do not constitute a significant hazard.

FS 113-15

717.5.3 (IMC 607.5.5)

Proponent: Vickie Lovell, InterCode Incorporated, representing Air Movement and Control Association International (vickie@intercodeinc.com)

2015 International Building Code

Revise as follows:

717.5.3 Shaft enclosures. Shaft enclosures that are permitted to be penetrated by ducts and air transfer openings shall be protected with *approved* fire and smoke *dampers* installed in accordance with their listing.

Exceptions:

1. *Firedampers* are not required at penetrations of shafts where any of the following criteria are met:
    1.1. Steel exhaust subducts are extended not less than 22 inches (559 mm) vertically in exhaust shafts, provided there is a continuous airflow upward to the outside, provided by an exhaust fan installed at the upper terminus of the shaft that is powered continuously in accordance with the provisions 909.11.
    1.2. Penetrations are tested in accordance with ASTM E 119 or UL 263 as part of the fire-resistance-rated assembly.
    1.3. Ducts are used as part of an *approved* smoke control system designed and installed in accordance with Section 909 and where the *firedamper* will interfere with the operation of the smoke control system.
    1.4. The penetrations are in parking garage exhaust or supply shafts that are separated from other building shafts by not less than 2-hour fire-resistance-rated construction.
2. In Group B and R occupancies equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, *smokedampers* are not required at penetrations of shafts where all of the following criteria are met:
    2.1. Kitchen, clothes dryer, bathroom and toilet room exhaust openings are installed with steel exhaust subducts, having a minimum wall thickness of 0.0187-inch (0.4712 mm) (No. 26 gage).
    2.2. The subducts extend not less than 22 inches (559 mm) vertically.
    2.3. An exhaust fan is installed at the upper terminus of the shaft that is powered continuously in accordance with the provisions of Section 909.11, so as to maintain a continuous upward airflow to the outside.
3. *Smoke dampers* are not required at penetration of exhaust or supply shafts in parking garages that are separated from other building shafts by not less than 2-hour fire-resistance-rated construction.
4. *Smoke dampers* are not required at penetrations of shafts where ducts are used as part of an *approved* mechanical smoke control system designed in accordance with Section 909 and where the *smoke damper* will interfere with the operation of the smoke control system.
5. *Fire dampers* and *combination fire/smokedampers* are not required in kitchen and clothes dryer exhaust systems where installed in accordance with the *International Mechanical Code*.

Reason: The exceptions permit elimination of both fire dampers and smoke dampers in shafts under certain conditions.
In order to eliminate smoke dampers in a shaft, an exhaust fan must be installed at the upper terminus of the shaft that will operate on standby power so as to maintain a continuous upward airflow to the outside. (See Criteria 2.3 in Exception 2 of this section).

This proposal seeks to require the same conditions for an exhaust fan in order to be able to eliminate the fire damper in the shaft.

The system can be intentionally or unintentionally powered down if there is shorted/melted wiring or other ignited debris within the ventilation shaft. Without a fire damper and no upward airflow to the outside, fire (and smoke) could migrate via the shaft to a floor remote from the area of origin. At present a smoke damper is required in some cases while a fire damper is not required and vice versa. Both should be required under the same conditions, and exempted by the same conditions.

By adding the requirement for powered air movement in the shaft if fire damper is not required, safety is increased.

Cost Impact: Will increase the cost of construction
The cost of construction will increase due to the added cost for the fan and continuous power.

FS 114-15

717.5.3 (IMC 607.5.5)

Proponent: Douglas Evans, representing self (dhefpe@gmail.com)

2015 International Building Code

Revise as follows:

717.5.3 Shaft enclosures. Shaft enclosures that are permitted to be penetrated by ducts and air transfer openings shall be protected with *approved* fire and smoke *dampers* installed in accordance with their listing.

Exceptions:

1. *Firedampers* are not required at penetrations of shafts where any of the following criteria are met:
    1.1. Steel exhaust subducts are extended not less than 22 inches (559 mm) vertically in exhaust shafts, provided there is a continuous airflow upward to the outside.
    1.2. Penetrations are tested in accordance with ASTM E 119 or UL 263 as part of the fire-resistance-rated assembly.
    1.3. Ducts are used as part of an *approved* smoke control system designed and installed in accordance with Section 909 and where the *firedamper* will interfere with the operation of the smoke control system.
    1.4. The penetrations are in parking garage exhaust or supply shafts that are separated from other building shafts by not less than 2-hour fire-resistance-rated construction.
2. In ~~Group B and R occupancies~~buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, *smokedampers* are not required at penetrations of shafts where all of the following criteria are met:
    2.1. Kitchen, clothes dryer, bathroom and toilet room exhaust openings are installed with steel exhaust subducts, having a maximum diameter of 5" (127 mm) or maximum area of 19.7 in^2 (0.012 m^2) and a minimum wall thickness of 0.0187-inch (0.4712 mm) (No. 26 gage).
    2.2. The subducts extend not less than 22 inches (559 mm) vertically.
    2.3. An exhaust fan is installed at the upper terminus of the shaft that is powered continuously in accordance with the provisions of Section 909.11, so as to maintain a continuous upward airflow to the outside.
3. *Smoke dampers* are not required at penetration of exhaust or supply shafts in parking garages that are separated from other building shafts by not less than 2-hour fire-resistance-rated construction.
4. *Smoke dampers* are not required at penetrations of shafts where ducts are used as part of an *approved* mechanical smoke control system designed in accordance with Section 909 and where the *smoke damper* will interfere with the operation of the smoke control system.
5. *Fire dampers* and *combination fire/smokedampers* are not required in kitchen and clothes dryer exhaust systems where installed in accordance with the *International Mechanical Code*.

Reason: For all occupancy classifications, Exceptions 1 allows deletion of fire dampers when specific conditions are met. Exception 2 allows deletion of the smoke damper under the conditions specified, but is limited to B and R occupancies. The 22-inch subduct as described, mitigates the fire damper. For fully sprinklered buildings, the fan described in Exception 2 that is continuously operating and on standby power, mitigates the smoke damper. This combination creates an equivalent and safe condition that need not be limited to B and R occupancies.

Cost Impact: Will not increase the cost of construction
This proposal is expected to decrease the cost of construction.The allowance to eliminate smoke dampers not only saves the cost of the damper, also saved is the cost of the respective smoke detector and interconnected controls. The continued maintenance and testing of the damper(s) and smoke detector(s) are also eliminated.

Analysis: Code change proposals FS 114 and FS 115 propose revisions to Section 717.5.3. The committee needs to make its intent clear with respect to these revisions.

FS 115-15

717.5.3 (IMC 607.5.5)

Proponent: Raymond Grill, Arup, representing Arup (ray.grill@arup.com)

2015 International Building Code

Revise as follows:

717.5.3 Shaft enclosures. Shaft enclosures that are permitted to be penetrated by ducts and air transfer openings shall be protected with *approved* fire and smoke *dampers* installed in accordance with their listing.

Exceptions:

1. *Firedampers* are not required at penetrations of shafts where any of the following criteria are met:
    1.1. Steel exhaust subducts are extended not less than 22 inches (559 mm) vertically in exhaust shafts, provided there is a continuous airflow upward to the outside.
    1.2. Penetrations are tested in accordance with ASTM E 119 or UL 263 as part of the fire-resistance-rated assembly.
    1.3. Ducts are used as part of an *approved* smoke control system designed and installed in accordance with Section 909 and where the *firedamper* will interfere with the operation of the smoke control system.
    1.4. The penetrations are in parking garage exhaust or supply shafts that are separated from other building shafts by not less than 2-hour fire-resistance-rated construction.
2. ~~In Group B and R occupancies equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, *smokedampers*~~Smoke dampers are not required at penetrations of shafts ~~where all of the following criteria~~in buildings that are ~~met:~~
    2.1. ~~Kitchen, clothes dryer, bathroom and toilet room exhaust openings are installed~~equipped throughout with ~~steel exhaust subducts, having a minimum wall thickness of 0.0187-inch (0.4712 mm) (No. 26 gage).~~
    ~~2.2. The subducts extend not less than 22 inches (559 mm) vertically.~~
    2.2. ~~An exhaust fan is installed at the upper terminus of the shaft that is powered continuously~~an automatic sprinkler system in accordance with ~~the provisions of~~ Section ~~909.11, so as to maintain a continuous upward airflow to the outside~~903.3.1.1.
3. *Smoke dampers* are not required at penetration of exhaust or supply shafts in parking garages that are separated from other building shafts by not less than 2-hour fire-resistance-rated construction.
4. *Smoke dampers* are not required at penetrations of shafts where ducts are used as part of an *approved* mechanical smoke control system designed in accordance with Section 909 and where the *smoke damper* will interfere with the operation of the smoke control system.
5. *Fire dampers* and *combination fire/smokedampers* are not required in kitchen and clothes dryer exhaust systems where installed in accordance with the *International Mechanical Code*.

Reason: The requirement for smoke dampers at penetrations in shafts was first included in the IBC during the comment phase of the development of the first edition of the International Building Code. This requirement did not exist in any of the model building codes (BOCA, UBC & SBC). A requirement for smoke dampers at penetrations of shafts has never been incorporated in the NFPA system of codes.

The justification for smoke dampers in the original code change is that smoke can travel through a duct to locations in a building that are remote from the fire. While this statement is correct, smoke travel through ducted ventilation shafts has not been a contributing factor to fire spread or fire deaths in buildings. Smoke detectors at HVAC equipment have been required to accomplish automatic shut off of HVAC equipment to minimize the potential of smoke spread through ventilation ducts. For example, the majority of fire deaths in upper stories of the MGM grand fire of 1980 were due to smoke spread through stair shafts and seismic joints that were not protected. Fancoil units in guestrooms drew air from the corridors which also contributed to fatalities. While the HVAC system was cited as a potential source of smoke spread, smoke detectors were not present to provide automatic shutoff of equipment (NFPA Preliminary Report of the MGM Grand Hotel Fire). The MGM Grand was not sprinkler protected.

There was only one fatality in an upper story of the San Juan DuPont fire in 1986 which was not readily explained. The San Juan Dupont was not sprinker protected. Smoke travel through ventilation shafts was not a contributing factor in the First Interstate fire in Los Angeles or the Meridian fire in Philadelphia. Sprinklers were not active on fire floors in either of those buildings. Even in the World Trade Center bombing of 1993, 6 fatalities were attributed to the explosion, but there were no fatalities due to the effects of smoke (Isner, Michael S. and Klem, Thomas J., "World Trade Center Explosion and Fire," National Fire Protection Association). While these fires were thoroughly investigated, and code changes promulgated to address fire safety issues, smoke dampers in duct penetrations of shafts were never adopted as changes to any of the model codes as a result of these fires.

The original code change in the IBC did not present any technical substantiation for the additional requirement for smoke dampers and there has never been an instance that I am aware of where the provision of smoke dampers in shafts would have made a difference in the fire performance of a fully sprinklered building.

This requirement has been massaged based on negotiation with manufactures and building ownership groups over the past code cycles because it has always been difficult to implement. The requirement for smoke dampers at penetrations of shafts should be removed for fully sprinklered buildings.

There have been jurisdictions and federal agencies that have never adopted the smoke damper requirement for sprinklered buildings. There have not been any incidences reported to show a need for smoke dampers. Agencies include the General Services Administration, Department of Veteran Affairs, and Department of Defense. These agencies own and operate buildings that include all of the occupancy types addressed by the IBC. Smoke

dampers are not required in shaft penetrations in their buildings.

Performance of Fully Sprinklered Buildings

It is important to note that the IBC requires sprinkler protection for most buildings of any significant size or occupant load. Therefore, the performance of sprinklered buildings is relevant. There has never been a multiple life loss fire in a fully sprinklered building of any occupancy type where the occupants have not been intimate with the fire or where an explosive or terrorist event has occurred.

Fire incidents in fully sprinklered buildings have never been identified to demonstrate the need for smoke dampers at shaft penetrations..

Maintaining Operability

Smoke dampers are operated by either a pneumatic actuator or electric motor. Smoke dampers require regular testing and maintenance to keep them operating. Even the most diligent building owners have a difficult time maintaining operability of smoke dampers.

Sustainability

There is a significant amount of resources that go into the implementation of smoke dampers at shaft penetrations. There has not been a demonstrated value to property protection or life safety in fully sprinklered buildings to justify their need.

Cost Impact: Will not increase the cost of construction
This code change will significantly reduce the cost of construction. A rough installed cost estimate for the smoke dampers and associated required equipment can range from $2000-$3000 per damper or even more for large dampers. This does not include the ongoing cost of testing the dampers and detectors that are required to operate the dampers. Regular testing is also required at regular frequencies. Testing costs per damper can vary depending on the number of dampers being tested and the accessibility and complexity of the system.

Analysis: Code change proposals FS 114 and FS 115 propose revisions to Section 717.5.3. The committee needs to make its intent clear with respect to these revisions.

FS 115-15 : 717.5.3-GRILL5132

FS 116-15

717.5.3 (IMC 607.5.5)

Proponent: Douglas Evans, representing self (dhefpe@gmail.com)

2015 International Building Code

Revise as follows:

717.5.3 Shaft enclosures. Shaft enclosures that are permitted to be penetrated by ducts and air transfer openings shall be protected with *approved* fire and smoke *dampers* installed in accordance with their listing.

Exceptions:

1. *Firedampers* are not required at penetrations of shafts where any of the following criteria are met:
    1.1. Steel exhaust subducts are extended not less than 22 inches (559 mm) vertically in exhaust shafts, provided there is a continuous airflow upward to the outside.
    1.2. Penetrations are tested in accordance with ASTM E 119 or UL 263 as part of the fire-resistance-rated assembly.
    ~~1.3. Ducts are used as part of an *approved* smoke control system designed and installed in accordance with Section 909 and where the *firedamper* will interfere with the operation of the smoke control system.~~
    1.3. The penetrations are in parking garage exhaust or supply shafts that are separated from other building shafts by not less than 2-hour fire-resistance-rated construction.
2. In Group B and R occupancies equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, *smokedampers* are not required at penetrations of shafts where all of the following criteria are met:
    2.1. Kitchen, clothes dryer, bathroom and toilet room exhaust openings are installed with steel exhaust subducts, having a minimum wall thickness of 0.0187-inch (0.4712 mm) (No. 26 gage).
    2.2. The subducts extend not less than 22 inches (559 mm) vertically.
    2.3. An exhaust fan is installed at the upper terminus of the shaft that is powered continuously in accordance with the provisions of Section 909.11, so as to maintain a continuous upward airflow to the outside.
3. *Smoke dampers* are not required at penetration of exhaust or supply shafts in parking garages that are separated from other building shafts by not less than 2-hour fire-resistance-rated construction.
4. ~~*Smoke dampers* are not required at penetrations of shafts where ducts are used as part of an *approved* mechanical smoke control system designed in accordance with Section 909 and where the *smoke damper* will interfere with the operation of the smoke control system.~~
4. *Fire dampers* and *combination fire/smokedampers* are not required in kitchen and clothes dryer exhaust systems where installed in accordance with the *International Mechanical Code*.

Reason: These allowances can easily be misapplied. Just because dampers (fire or smoke) are part of a 909 smoke control system is not a reason to delete them. The following statements have been gleaned from various editions of the ICC Smoke Control book by Evans and Klote:

"One thing to consider is the effect of automatic sprinklers. If we accept **the concepts outlined in Section 909**, we must **assume that automatic sprinklers have activated and minimized the fire size, as well as the heat output, or that the fire is fuel-limited**. Section 909 is not intended to be used when uncontrolled fires can be expected."

"It may be argued that fire dampers can invariably interfere with proper operation of a smoke control system. Does this mean that all fire dampers in smoke control systems should be deleted? The code even allows increased activation temperatures for fire dampers installed within smoke control systems. If there is sufficient heat at a fire damper to cause the fusible link to melt, there may be the possibility of spreading fire from one side of the barrier to the other. In most cases, **it may be preferable to allow the fire damper to close and maintain the fire resistance of the passive barrier**, knowing full well that the mechanical smoke control system may no longer be able to perform its intended function. The impact of this subject can be minimized by careful layout of the smoke control system to reduce the number of fire dampers required."

"If the linkage temperature of a fire damper is hot enough for the damper to close, there is likely a greater concern of keeping the fire within the zone of origin than whether the smoke control system is functioning properly. In other words, **let the fire damper fulfill its intended function by maintaining the passive barrier**. "

"The Exception allows **smoke dampers**, which are part of an approved smoke control system, to be **omitted when they "are not necessary for the operation and control of the system**." This allowance should only be considered on a case-by-case basis. When the smoke control system is operating properly, smoke dampers can be programmed to remain in the open position and still allow the smoke control system to function within the intent of its design. When airflow sensors do not indicate adequate air movement, these dampers can be programmed to close and maintain the passive smoke barrier. **If smoke can migrate from one smoke zone to another** through a ducted or non-ducted damper **when fans are off, recognition of this allowance is not appropriate**. A fire damper must still be installed if required by this code."

One can virtually always argue that a fire or smoke damper will adversely affect the smoke control system. Although this may be correct, careful

routing of ducts can substantially reduce the need for dampers.

It is virtually impossible to design a smoke control system in accordance with Section 909 without taking into account a sprinkler limited fire. In a sprinkler controlled fire, its unlikely fire dampers will get hot enough to close.

The leakage rated portion of the damper (smoke damper) can be programmed to remain open when the smoke control system is functioning properly and close upon an appropriate fault condition. As such, it is unlikely a smoke damper will adversely affect a properly functioning smoke control system.

As such, these allowances are inappropriate and should only be considered when one of the other existing exceptions applies.

Cost Impact: Will increase the cost of construction
Careful layout of the smoke control system to limit penetration of rated assemblies can substantially reduce the number of fire dampers required. As such, this proposal will have little to no increase in the cost of construction for a properly designed smoke control system.

FS 116-15 : 717.5.3-EVANS5405

FS 117-15

717.5.3 (IMC 607.5.5)

Proponent: Maureen Traxler, Seattle Dept of Planning & Development, representing Seattle Dept of Planning & Development (maureen.traxler@seattle.gov)

2015 International Building Code

Revise as follows:

717.5.3 Shaft enclosures. Shaft enclosures that are permitted to be penetrated by ducts and air transfer openings shall be protected with *approved* fire and smoke *dampers* installed in accordance with their listing.

Exceptions:

1. *Firedampers* are not required at penetrations of shafts where any of the following criteria are met:
    1.1. Steel exhaust subducts are extended not less than 22 inches (559 mm) vertically in exhaust shafts, provided there is a continuous airflow upward to the outside.
    1.2. Penetrations are tested in accordance with ASTM E 119 or UL 263 as part of the fire-resistance-rated assembly.
    1.3. Ducts are used as part of an *approved* smoke control system designed and installed in accordance with Section 909 and where the *firedamper* will interfere with the operation of the smoke control system.
    1.4. The penetrations are in parking garage exhaust or supply shafts that are separated from other building shafts by not less than 2-hour fire-resistance-rated construction.
2. In Group B and R occupancies equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, *smokedampers* are not required at penetrations of shafts where all of the following criteria are met:
    2.1. Kitchen, clothes dryer, bathroom and toilet room exhaust openings are installed with steel exhaust subducts, having a minimum wall thickness of 0.0187-inch (0.4712 mm) (No. 26 gage).
    2.2. The subducts extend not less than 22 inches (559 mm) vertically.
    2.3. An exhaust fan is installed at the upper terminus of the shaft that is powered continuously in accordance with the provisions of Section 909.11, so as to maintain a continuous upward airflow to the outside.
3. *Smoke dampers* are not required at penetration of exhaust or supply shafts in parking garages that are separated from other building shafts by not less than 2-hour fire-resistance-rated construction.
4. *Smoke dampers* are not required at penetrations of shafts where ducts are used as part of an *approved* mechanical smoke control system designed in accordance with Section 909 and where the *smoke damper* will interfere with the operation of the smoke control system.
5. *Fire dampers* and *combination fire/smokedampers* are not required in kitchen and clothes dryer exhaust systems where ~~installed in accordance with~~ dampers are prohibited by the *International Mechanical Code*.

Reason: The purpose of exception 5 is to eliminate an inconsistency between the IBC & IMC. Without the exception, the IBC would require dampers while the IMC specifically prohibits them for clothes dryers (IMC Sec. 504.2), multistory domestic kitchen exhaust (IMC Sec. 505.3), and in grease ducts (IMC Sec. 505.3). However, the exception as written goes beyond that to allow undampered shaft penetrations in all kitchen exhausts that comply with the IMC.

Cost Impact: Will not increase the cost of construction
This proposal merely clarifies existing language and will not increase the cost of construction.

FS 118-15

717.5.5 (IMC 607.5.4)

Proponent: Vickie Lovell, InterCode Incorporated, representing Air Movement Control Association International (vickie@intercodeinc.com)

2015 International Building Code

Revise as follows:

717.5.5 Smoke barriers. A *listed smoke damper* designed to resist the passage of smoke shall be provided at each point a duct or air transfer opening penetrates a *smoke barrier*. *Smoke dampers* and *smoke damper* actuation methods shall comply with Section 717.3.3.2.

Exceptions:

1. *Smoke dampers* are not required where the openings in ducts are limited to a single *smoke compartment* and the ducts are constructed of steel.
2. Smoke dampers are not required in smoke barriers required by Section 407.5 for Group I-2, Condition 2— where the HVAC system is fully ducted in accordance with Section 603 of the *International Mechanical Code* and where buildings are equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 and equipped with quick-response sprinklers in accordance with Section 903.3.2. <u>For the purposes of this exception, a ducted HVAC system shall be a duct system for conveying supply, return or exhaust air as part of the structure's HVAC system. Such a duct system shall be constructed of sheet steel not less than No. 26 gage thickness and shall be continuous from the air-handling appliance or equipment to the air outlet and inlet terminals.</u>

Reason: Smoke barrier walls are used to divide areas of a building into separate smoke compartments so that occupants can be evacuated or relocated to adjacent smoke compartments or other areas of the building. They are also used to enclose areas of refuge and or elevator lobbies. Although not required by the IBC, smoke barriers can also be used as part of a smoke control system, accessible means of egress, and compartmentation of underground buildings. IBC Section 709.3 "Fire-resistance rating" states that a 1-hour fire-resistance rating is required for smoke barriers. In addition to a 1 hour fire resistance rating for the smoke barrier, the IBC also requires that all the elements such as doors, penetrations, joints and ducts of a smoke barrier have quantifiable resistance to smoke/air leakage. Smoke barriers are required to be permanently identified and marked with signs or stenciling with wording that requires that openings should be protected after construction and during ongoing maintenance and repairs.

Without any technical justification other than the cost of installation and maintenance of a smoke damper, smoke dampers were removed as duct opening protection in a smoke barrier in fully ducted HVAC systems. No meaningful supporting data was provided to show that eliminating a smoke damper in a smoke barrier duct opening, and replying solely on the sprinkler system and the duct itself is an equivalent alternative to a 1 hour of fire resistance rated assembly, or would satisfy the requirement to limit the migration of smoke and toxic gases if the duct breaks away from the smoke barrier wall. Therefore this proposed text has been added to better define when the exception for smoke dampers should apply based on the construction of the HVAC system. It has excerpted from the exception permitted in fire partitions (also fire rated for 1 hour) for fire dampers in fully ducted systems in sprinklered buildings as follows:

> 717.5.4 Fire partitions, Exception #4. Such walls are penetrated by ducted HVAC systems, have a required fire-resistance rating of 1 hour or less, and are in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2. For the purposes of this exception, a ducted HVAC system shall be a duct system for conveying supply, return or exhaust air as part of the structure's HVAC system. Such a duct system shall be constructed of sheet steel not less than No. 26 gage thickness and shall be continuous from the air-handling appliance or equipment to the air outlet and inlet terminals.

Cost Impact: Will not increase the cost of construction

The code change proposal will not increase the cost of construction because the code section already requires a fully ducted system in order to eliminate a smoke damper. This proposal brings into this section the description of what a fully ducted system is, which the code already defined in 717.5.4 Fire partitions.

FS 119-15

717.6.2 (IMC 607.6.2), 717.6.2.1 (IMC 607.6.2.1)

Proponent: Homer Maiel, PE, CBO, representing ICC Tri-Chapter (Peninsula, East Bay, Monterey Bay) (hmaiel@gmail.com)

2015 International Building Code

Revise as follows:

717.6.2 Membrane penetrations. Ducts and air transfer openings constructed of *approved* materials in accordance with the *International Mechanical Code* that penetrate the ceiling membrane of a fire-resistance-rated floor/ceiling or roof/ceiling assembly shall be protected with one of the following:

1. A shaft enclosure in accordance with Section 713.
2. A *listedceiling radiation damper* installed at the ceiling line where a duct penetrates the ceiling of a fire-resistance-rated floor/ceiling or roof/ceiling assembly.

Exceptions:

1. A fire resistance rated assembly tested in accordance with ASTM E 119 or UL 263 showing that ceiling radiation dampers are not required in order to maintain the fire resistance rating of the assembly.

2. Where exhaust duct penetrations are protected in accordance with Section 714.4.1.2 are located within the cavity of a wall and do not pass through another dwelling unit or tenant space.

3. Where duct and air transfer openings are protected with a duct outlet penetration system tested as part of a fire-resistance-rated assembly in accordance with ASTM E 119 or UL 263.

3. A *listedceiling radiation damper* installed at the ceiling line where a diffuser with no duct attached penetrates the ceiling of a fire-resistance-rated floor/ceiling or roof/ceiling assembly.

Exceptions:

1. A fire resistance rated assembly tested in accordance with ASTM E 119 or UL 263 showing that ceiling radiation dampers are not required in order to maintain the fire resistance rating of the assembly.

2. Where duct and air transfer openings are protected with a duct outlet penetration system tested as part of a fire-resistance-rated assembly in accordance with ASTM E 119 or UL 263.

717.6.2.1 Ceiling radiation dampers testing and installation. *Ceiling radiation dampers* shall be tested in accordance with Section 717.3.1. *Ceiling radiation dampers* shall be installed in accordance with the details *listed* in the fire-resistance-rated assembly and the manufacturer's instructions and the listing. ~~*Ceiling radiation dampers* are not required where one of the following applies:~~

~~1. Tests in accordance with ASTM E 119 or UL 263 have shown that *ceiling radiation dampers* are not necessary in order to maintain the *fire-resistance rating* of the assembly.~~

1. ~~Where exhaust duct penetrations are protected in accordance with Section 714.4.2, are located within the cavity of a wall and do not pass through another *dwellingunit* or tenant space.~~
2. ~~Where duct and air transfer openings are protected with a duct outlet protection system tested as part of a fire-resistance-rated assembly in accordance with ASTM E 119 or UL 263.~~

Reason: This proposal combines Section 717.6.2 and 717.6.2.1 in a way that the requirements could be understood better. The changes are merely editorial and not technical.

Cost Impact: Will not increase the cost of construction
The proposal will not increase the cost of construction since the code change, as mentioned under "reason", is merely editorial for the code user to understand it better.

FS 120-15

717.6.2.1 (IMC 607.6.2.1)

Proponent: Mike Moore, Newport Ventures, representing Broan-NuTone, representing Newport (mmoore@newportventures.net)

2015 International Building Code

Revise as follows:

717.6.2.1 Ceiling radiation dampers. *Ceiling radiation dampers* shall be tested in accordance with Section 717.3.1. *Ceiling radiation dampers* shall be installed in accordance with the details *listed* in the fire-resistance-rated assembly and the manufacturer's instructions and the listing. *Ceiling radiation dampers* are not required where one of the following applies:

1. Tests in accordance with ASTM E 119 or UL 263 have shown that *ceiling radiation dampers* are not necessary in order to maintain the *fire-resistance rating* of the assembly.
2. Where exhaust duct or outdoor air duct penetrations are protected in accordance with Section 714.4.2, are located within the cavity of a wall and do not pass through another *dwellingunit* or tenant space.
3. Where duct and air transfer openings are protected with a duct outlet protection system tested as part of a fire-resistance-rated assembly in accordance with ASTM E 119 or UL 263.

Reason:
This section provides multiple exemptions for ceiling radiation dampers. Exception 2 exempts exhaust air ducts that meet certain requirements. There is no apparent reason to not also exempt outdoor air ducts meeting the same requirements. This appears to simply be an oversight.

Cost Impact: Will not increase the cost of construction
This proposal will reduce costs by reducing the number of applications requiring a ceiling radiation damper. The cost reduction expected is $50-$130 per instance. Prices estimates are retail based on Google shopping search, key words "ceiling radiation damper", conducted December 19, 2014.

FS 121-15

Part I:
718.3.2
Part II:
718.4.2

THIS IS A 2 PART CODE CHANGE. BOTH PARTS WILL BE HEARD BY THE IBC-FIRE SAFETY COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THIS COMMITTEE.

Proponent: Stephen DiGiovanni, Clark County Building Department, representing Southern Nevada Chapter of ICC (sdigiovanni@clarkcountynv.gov)

Part I

2015 International Building Code

Revise as follows:

718.3.2 Groups R-1, R-2, R-3 and R-4. Draftstopping shall be provided in floor/ceiling spaces in Group R-1 buildings, in Group R-2 buildings with three or more *dwellingunits*, in Group R-3 buildings with two *dwellingunits* and in Group R-4 buildings. Draftstopping shall be located above and in line with the *dwellingunit* and *sleeping unit* separations.

Exceptions:

1. Draftstopping is not required in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
2. Draftstopping is not required in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.2, provided that automatic sprinklers in accordance with Section 903.3.1.1 are installed in the combustible concealed spaces where the draftstopping is being omitted.

Part II

2015 International Building Code

Revise as follows:

718.4.2 Groups R-1 and R-2. Draftstopping shall be provided in *attics*, mansards, overhangs or other concealed roof spaces of Group R-2 buildings with three or more *dwellingunits* and in all Group R-1 buildings. Draftstopping shall be installed above, and in line with, *sleeping unit* and *dwellingunit* separation walls that do not extend to the underside of the roof sheathing above.

Exceptions:

1. Where *corridor* walls provide a *sleeping unit* or *dwellingunit* separation, draftstopping shall only be required above one of the *corridor* walls.
2. Draftstopping is not required in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
3. In occupancies in Group R-2 that do not exceed four *storiesabovegrade plane*, the *attic* space shall be subdivided by *draftstops* into areas not exceeding 3,000 square feet (279 m^2) or above every two *dwellingunits*, whichever is smaller.
4. Draftstopping is not required in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.2, provided that automatic sprinklers in accordance with Section 903.3.1.1 are installed in the combustible concealed space where the draftstopping is being omitted.

Reason: The requirement to have an NFPA 13R sprinkler system protect combustible concealed spaces contradicts the intent of a 13R system. The NFPA 13R code specifically excludes the installation of sprinklers in combustible concealed spaces. Section 6.6.6 of NFPA 13R, 2010 edition (the edition referenced by the 2012 IBC), reads as follows:

"**6.6.6** Sprinklers shall not be required in attics, penthouse equipment rooms, elevator machine rooms, concealed spaces dedicated exclusively to and containing only dwelling unit ventilation equipment, crawl spaces, floor/ceiling spaces, noncombustible elevator shafts where the elevator cars comply with ANSI A17.1, *Safety Code for Elevators and Escalators*, and other concealed spaces that are not used or intended for living purposes or storage and do not contain fuel-fired equipment."

Because NFPA 13R specifically does not include within its scope the installation of sprinklers in concealed spaces, there are no criteria within NFPA 13R that are suitable for the protection of concealed spaces. NFPA 13, on the other hand, sets forth requirements for protecting concealed combustible spaces. As such, NFPA 13 has suitable design criteria for protection of concealed combustible spaces. Specifically, NFPA 13 provides "Section 8.16.1 Concealed Spaces" (too lengthy to retype). This section sets forth the concealed spaces where sprinklers are required, methods to

mitigate sprinklers in concealed spaces, the density criteria for the sprinklers, provisions for localized protection of combustibles, and sprinkler head listing requirements for protection of spaces that of shallower heights.

Because NFPA 13R does not have design criteria for the protection of combustible concealed spaces, it is not appropriate to refer to that standard for protection of concealed combustible spaces. This amendment seeks to require that protection of concealed combustible spaces be provided in an appropriate manner, using the only recognized reference sprinkler code that provides criteria for protection of concealed combustible spaces.

Cost Impact:

Part I: Will not increase the cost of construction
This proposal does not increase the cost of construction, as the requirements for sprinklers currently exist, and are being clarified only.

Part II: Will not increase the cost of construction
This proposal will not increase the cost of construction as the requirements currently exist, and are just being clarified by this proposal.

FS 121-15 : 718.3.2-DIGIOVANNI3829

FS 122-15

718.3.2

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

2015 International Building Code

Revise as follows:

718.3.2 Groups R-1, R-2, R-3 ~~and R-4~~. Draftstopping shall be provided in floor/ceiling spaces in Group R-1 buildings, in Group R-2 buildings with three or more *dwellingunits*, in Group R-3 buildings with two *dwellingunits* ~~and in Group R-4 buildings~~. Draftstopping shall be located above and in line with the *dwellingunit* and *sleeping unit* separations.

Exceptions:

1. Draftstopping is not required in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
2. Draftstopping is not required in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.2, provided that automatic sprinklers are installed in the combustible concealed spaces where the draftstopping is being omitted.

Reason: Group R-4 congregate residences are groups of sleeping units that operate as a single-family home. Requiring draftstopping between bedrooms is a significantly higher requirement than specified for any other occupancy. By letting the provisions for Group R-4 fall back to the Group R-3 requirements, there would be draftstopping between dwellings.

Sections 903.2.8.3 through 903.2.8.3.2 were added in 2015 IBC/IFC for attic protection in Group R-4 Condition 2 facilities to address the issue of the possibility of fires within an attic space.

[F] 903.2.8.3 Group R-4 Condition 2. An automatic sprinkler system installed in accordance with Section 903.3.1.2 shall be permitted in Group R-4 Condition 2 occupancies. Attics shall be protected in accordance with Section 903.2.8.3.1 or 903.2.8.3.2.

[F] 903.2.8.3.1 Attics used for living purposes, storage or fuel-fired equipment. Attics used for living purposes, storage or fuel-fired equipment shall be protected throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2.

[F] 903.2.8.3.2 Attics not used for living purposes, storage or fuel-fired equipment. Attics not used for living purposes, storage or fuel-fired equipment shall be protected in accordance with one of the following:
1. Attics protected throughout by a heat detector system arranged to activate the building fire alarm system in accordance with Section 907.2.10.
2. Attics constructed of noncombustible materials. .
3. Attics constructed of fire-retardant-treated wood framing complying with Section 2303.2.
4. The automatic sprinkler system shall be extended to provide protection throughout the attic space.

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

Cost Impact: Will not increase the cost of construction
Clarification of the intent of draft stopping could reduce the requirements for the number of draft stops.

FS 123-15

720.1

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

2015 International Building Code

Revise as follows:

720.1 General. Insulating materials~~, including facings such as vapor retarders and *vapor-permeable membranes*, similar coverings and all layers of single and multilayer reflective foil insulations,~~ shall comply with the requirements of this section. Where a flame spread index or a smoke-developed index is specified in this section, such index shall be determined in accordance with ASTM E 84 or UL 723. Any material that is subject to an increase in flame spread index or smoke-developed index beyond the limits herein established through the effects of age, moisture or other atmospheric conditions shall not be permitted. Insulating materials include but are not limited to facings such as vapor retarders, vapor permeable membranes and similar coverings, and all layers of single and multilayer reflective foil insulations.

Exceptions:

1. Fiberboard insulation shall comply with Chapter 23.
2. Foam plastic insulation shall comply with Chapter 26.
3. Duct and pipe insulation and duct and pipe coverings and linings in plenums shall comply with the *International Mechanical Code*.
4. All layers of single and multilayer reflective plastic core insulation shall comply with Section ~~2613~~2614.

Reason: This is simple clarification and language cleanup. Section 720.1 is intended to apply to all insulating materials but the sentence as is causes confusion because it refers to two types of insulation materials, namely (1) facings such as vapor retarders and vapor-permeable membranes and similar coverings and (2) all layers of single and multilayer reflective foil insulations. Therefore it is better if they are shown in a separate sentence at the end of the section that way the sentence is clearer.
The other change is that the correct section for reflective plastic core insulation materials (which are a subset of reflective insulation materials) is 2614 and not 2613.

Cost Impact: Will not increase the cost of construction
No change in requirements - simple clarification.

FS 124-15

720.1, 720.2.1

Proponent: Lamont Millspaugh, Reflectix, Inc., representing Reflective Insulation Manufacturers Association International (monty.millspaugh@reflectixinc.com)

2015 International Building Code

Revise as follows:

720.1 General. Insulating materials, including facings such as vapor retarders and *vapor-permeable membranes*, similar coverings and ~~all layers of~~ single and multilayer reflective ~~foil~~ insulations, shall comply with the requirements of this section. Where a flame spread index or a smoke-developed index is specified in this section, such index shall be determined in accordance with ASTM E 84 or UL 723. Any material that is subject to an increase in flame spread index or smoke-developed index beyond the limits herein established through the effects of age, moisture or other atmospheric conditions shall not be permitted.

Exceptions:

1. Fiberboard insulation shall comply with Chapter 23.
2. Foam plastic insulation shall comply with Chapter 26.
3. Duct and pipe insulation and duct and pipe coverings and linings in plenums shall comply with the *International Mechanical Code*.
4. All layers of single and multilayer reflective plastic core insulation shall comply with Section 2613.

720.2.1 Facings. Where such materials are installed in concealed spaces in buildings of Type III, IV or V construction, the flame spread and smoke-developed limitations do not apply to facings, coverings, and layers of reflective ~~foil~~ insulation that are installed behind and in substantial contact with the unexposed surface of the ceiling, wall or floor finish.

Exception: All layers of single and multilayer reflective plastic core insulation shall comply with Section 2613.

Reason: The stricken language "all layers" is redundant and could cause confusion. Furthermore, this is not the correct method for testing these types of products. ASTM E 84 procedures call for the entire product to be tested, not each component of the product.
The word "foil" is an outdated describer of reflective insulation products. Some do contain foil, but a majority of the industry has moved to metalized films. All reflective insulations require the same testing regiment independent of composition.

Cost Impact: Will not increase the cost of construction
This proposal will not increase the cost of construction. The proposal updates the material reference language within the code, in order to be current with standard industry practice.

FS 124-15 : 720.1-MILLSPAUGH4896

FS 125-15

720.1, 720.5.1 (New)

Proponent: Wesley Hall, Reflectix, Inc., representing Reflective Insulation Manufacturers Association International (wes.hall@reflectixinc.com)

2015 International Building Code

Revise as follows:

720.1 General. Insulating materials, including facings such as vapor retarders and *vapor-permeable membranes*, similar coverings and all layers of single and multilayer reflective foil insulations and radiant barriers fully laminated to the underside of a wood roof deck, shall comply with the requirements of this section. Where a flame spread index or a smoke-developed index is specified in this section, such index shall be determined in accordance with ASTM E 84 or UL 723. Any material that is subject to an increase in flame spread index or smoke-developed index beyond the limits herein established through the effects of age, moisture or other atmospheric conditions shall not be permitted.

Exceptions:

1. Fiberboard insulation shall comply with Chapter 23.
2. Foam plastic insulation shall comply with Chapter 26.
3. Duct and pipe insulation and duct and pipe coverings and linings in plenums shall comply with the *International Mechanical Code*.
4. All layers of single and multilayer reflective plastic core insulation shall comply with Section 2613.

Add new text as follows:

720.5.1 Radiant barrier fully laminated to the underside of a wood roof deck The use of radiant barrier fully laminated to the underside of a wood roof deck shall be permitted in any type of construction provided the low emittance side of the product is facing an air space below the roof deck with an *approved* roof covering. The fire classification of the wood roof deck including the radiant barrier shall not be lower than that of the wood roof deck in the absence of the radiant barrier.

Reason: The proposal adds necessary language to ensure that radiant barriers attached to wood roof decks are properly installed below an *approved* roof covering. The current language in the code does not include any reference to a very predominant product type in the market place for **almost 30 years**. This proposed language addresses this need.

- Product History Acceptance and Distribution
  - Of the top 100 U.S. builders, 87 utilize this product type
  - 650,000,000+ sq. ft. of this product is installed annually
- Current ASTM Standards include C 1313 and C 1744
- Codes that include Radiant Barrier:
  - HI-Chapter 181 of Title 3, Table 402.1.1.1, Section 402.1.1.6 and Section 402.1.1.8.1
  - TX-Austin, Chapter 25-12, Article 12. Energy Code, Section 402.6
  - FL-2010 Florida Building Code, Section 405.6.1, Figure 405.6.1 and Table 303.2 (ASTM Standards)
  - CA-Title 24, Part 6, Subsection 8, Section (f), Subsection 2, Table 151-B, Table 151-C, Table 151-D
- Additional supporting references:
  - ICC ES - AC220

Proper installation of radiant barrier systems are covered in "Radiant Barriers: A Question and Answer Primer", available from the Florida Solar Energy Center (http://www.fsec.ucf.edu/en/publications/html/fsec-en-15/), and the ORNL website offers a "Radiant Barrier Fact Sheet" (http://web.ornl.gov/sci/ees/etsd/btric/RadiantBarrier/RBFactSheet2010.pdf) and included in ASTM C 1744.

REFERENCES:

ASTM C 1313/C 1313M Standard Specification for Sheet Radiant Barriers for Building Construction Applications

ASTM C 1744 Practice for Installation and Use of Radiant Barrier Systems (RBS) in Commercial/Industrial Building Construction.

Cost Impact: Will not increase the cost of construction

The code change proposal will not increase the cost of construction. The proposal does not change requirements for existing materials but offers an additional option of alternate materials into the code.

FS 126-15

720.1, 720.1.1 (New), 2615 (New), 2615.1 (New), 2615.2 (New), 2615.3 (New), 2615.3.1 (New), 2615.3.2 (New)

Proponent: Amanda Hickman, InterCode Incorporated, representing Reflective Insulation Manufacturers Association International (amanda@intercodeinc.com)

2015 International Building Code

Delete and substitute as follows:

720.1 General. ~~Insulating materials, including facings such as vapor retarders and *vapor-permeable membranes*, similar coverings and all layers of single and multilayer reflective foil insulations, shall comply with the requirements of this section. Where a flame spread index or a smoke-developed index is specified in this section, such index shall be determined in accordance with ASTM E 84 or UL 723. Any material that is subject to an increase in flame spread index or smoke-developed index beyond the limits herein established through the effects of age, moisture or other atmospheric conditions shall not be permitted.~~

~~**Exceptions:**~~

1. ~~Fiberboard insulation shall comply with Chapter 23.~~
2. ~~Foam plastic insulation shall comply with Chapter 26.~~
3. ~~Duct and pipe insulation and duct and pipe coverings and linings in plenums shall comply with the *International Mechanical Code*.~~
4. ~~All layers of single and multilayer reflective plastic core insulation shall comply with Section 2613.~~

Insulating materials, including the following, shall comply with the requirments of this section.

1. Facings such as vapor retarders and vapor-permeable membranes and similar coverings.
2. All layers of single and multilayer reflective foil insulations, including reflective plastic core insulation, complying with Section 2614.
3. Radiant barriers with plastic core, complying with Section 2615, when installed below the roof deck with an air space between the roof deck and the radiant barrier.

Exceptions

1. Fiberboard insulation shall comply with Chapter 23.
2. Foam plastic insulation shall comply with Chapter 26.
3. Duct and pipe insulation and duct and pipe coverings and linings in plenums shall comply with the International Mechanical Code.

Add new text as follows:

720.1.1 Flame Spread and Smoke Indexes Where a flame spread index or a smoke-developed index is specified in this section, such index shall be determined in accordance with ASTM E 84 or UL 723. Any material that is subject to an increase in flame spread index or smoke-developed index beyond the limits herein established through the effects of age, moisture or other atmospheric conditions shall not be permitted.

SECTION2615 RADIANT BARRIER WITH PLASTIC CORE

2615.1 General The provisions of this section shall govern the requirements for radiant barrier with plastic core installed below the roof deck with an air space between the roof deck and the radiant barrier.

2615.2 Identification. Packages and containers of radiant barriers with plastic core delivered to the job site shall show the manufacturer's or supplier's name, product identification and manufacturer's installation instructions and information sufficient to determine that the end use will comply with the code requirements.

2615.3 Fire Testing These materials shall comply with either 2615.3.1 or 2615.3.2:

2615.3.1 Surface-burning characteristics Radiant barrier with plastic core installed below the roof deck with an air space between the roof deck and the radiant barrier shall have a flame spread index of not more than 25 and a smoke-developed index of not more than 450 when tested in accordance with ASTM E 84 or UL 723. The test specimen preparation and mounting requirements shall be in accordance with ASTM E 2599.

2615.3.2 Room corner test heat release Radiant barriers with plastic core installed below the roof deck with an air space between the roof deck and the radiant barrier shall comply with the acceptance criteria of Section 803.1.2.1 when tested in accordance with NFPA 286 in the configuration of final installation.

Reason: This proposal addresses three issues that currently exist in this code section.

1. It corrects an editorial mistake in section 720.1 exception 4. The exception should reference 2614 instead of 2613. This exception is being rewritten in affirmative language rather than as an exception. The change recognizes that the reflective insulations explicitly covered by the code (in section 2614) are reflective plastic core insulations.
2. NO technical changes have been made to this section, except for adding radiant barriers to the materials listed.
3. This proposal establishes a new section on radiant barriers with plastic core that are installed with an air space between the radiant barrier and the roof deck. A new section 2615 is proposed for these insulation materials. This is a different and distinct product category separate from the existing section 2614 Reflective Plastic Core Insulation. Radiant barriers with plastic core provide different types of performances, are installed in different locations and are labeled differently than reflective plastic core insulation.

This new language is needed in order to ensure that these radiant barrier materials comply with the appropriate fire tests and are properly marked or labeled and installed correctly. The sections in Chapter 26 address different types of plastic which is why this technology has been included in this section. These product types are a long-standing, energy-saving technology having first been evaluated in the late 1950s (Joy, 1958). As far back as the 1970s, sheets of highly reflective surfaces called Radiant Barrier Systems (RBS) have been installed.

Product design innovations have resulted in a radiant barrier product configuration that requires the same treatment as *reflective plastic core insulation* as it pertains to flame/smoke safety. This proposal will require the same flame/smoke requirements for radiant barriers as those determined by UL 723 or ASTM E 84 or NFPA 286.

Proper installation of radiant barrier systems are covered in "Radiant Barriers: A Question and Answer Primer", available from the Florida Solar Energy Center (http://www.fsec.ucf.edu/en/publications/html/fsec-en-15/), and the ORNL website offers a "Radiant Barrier Fact Sheet" (http://web.ornl.gov/sci/ees/etsd/btric/RadiantBarrier/RBFactSheet2010.pdf) and the products are specified in ASTM C 1744.

REFERENCES:

ASTM C 1313/C 1313M Standard Specification for Sheet Radiant Barriers for Building Construction Applications
ASTM C 1744 Practice for Installation and Use of Radiant Barrier Systems (RBS) in Commercial/Industrial Building Construction
Joy, F.S. (1958). Improving Attic Space Insulating Values. ASHRAE Transaction, 64 251-266

Cost Impact: Will not increase the cost of construction
This code change proposal will not increase the cost of construction. The proposal does not change the requirements for existing materials but offers an additional option of alternative materials to the code.

FS 126-15 : 720.1-HICKMAN4420

FS 127-15

720.1, 720.5.1 (New), 720.5.2 (New), 202 (New)

Proponent: Vickie Lovell, InterCode Incorporated, representing Reflective Insulation Manufacturers Association International (vickie@intercodeinc.com)

2015 International Building Code

Revise as follows:

720.1 General. Insulating materials, including facings such as vapor retarders and *vapor-permeable membranes*, similar coverings and all layers of single and multilayer reflective foil insulations and interior radiation control coatings, shall comply with the requirements of this section. Where a flame spread index or a smoke-developed index is specified in this section, such index shall be determined in accordance with ASTM E 84 or UL 723. Any material that is subject to an increase in flame spread index or smoke-developed index beyond the limits herein established through the effects of age, moisture or other atmospheric conditions shall not be permitted.

Exceptions:

1. Fiberboard insulation shall comply with Chapter 23.
2. Foam plastic insulation shall comply with Chapter 26.
3. Duct and pipe insulation and duct and pipe coverings and linings in plenums shall comply with the *International Mechanical Code*.
4. All layers of single and multilayer reflective plastic core insulation shall comply with Section 2613.

Add new text as follows:

720.5.1 Interior radiation control coatings (IRCC) applied to the underside of a non-combustible roof deck. Interior radiation control coatings applied to the underside of a non-combustible roof deck shall face an interior air space and have an *approved* roof covering. The IRCC shall have a flame spread index of not more than 25 and a smoke-developed index of not more than 450.

720.5.2 Interior radiation control coatings (IRCC) applied to the underside of a wood roof deck Interior radiation control coatings applied to the underside of a wood roof deck shall face an interior air space and have an *approved* roof covering. The Fire Classification of the wood roof deck including the IRCC shall not be lower than that of the wood roof deck in the absence of the IRCC.

Add new definition as follows:

SECTION 202 DEFINITIONS

INTERIOR RADIATION CONTROL COATING (IRRC). A coating, having an emittance of 0.25 or less, applied as a liquid to building assemblies by roller or spray.

Reason: This proposal addresses the following issues that currently exist in this code section.

1. The proposal adds necessary language to ensure that interior radiation control coatings in roof systems are properly installed below an approved roof covering. The current language in the code does not include any reference to a very predominant product type in the market place. This proposed language addresses this need.
2. This proposal adds a new definition and section for Interior Radiation Control Coatings (IRCC). It also adds the term to the changing language of this section to ensure that the IRCC **WHEN** installed complies with the fire safety requirements in this section.

As characterized by ASTM, an Interior Radiation Control Coating (IRCC) is a non-thickness dependent, low emittance coating. When applied to building materials such as plywood, OSB or metal roofing, according to the manufacturer's installation instruction, it lowers the normal surface emittance of these materials to 0.25 or lower.

An IRCC works by changing the emittance of the surface where it is applied. Building products, such as wood, brick, painted surfaces and plasterboard exhibit high emissivities (0.7 - 0.95). When heated above the temperature of adjacent surfaces, they radiate most of their heat energy to cooler surfaces. An IRCC works by lowering their surface emittance to 0.25 or lower, lessening their ability to radiate heat.

An IRCC is normally applied using airless spray equipment, resulting in very low labor costs and greatly reduced installation times. Also, a water based IRCC can be safely installed in existing structures where the costs of installing foil or film products may be prohibitive or impractical.

REFERENCED STANDARD:

ASTM C 1321 Standard Practice for Installation and Use of Interior Radiation Control Coating Systems (IRCCs) in Building Construction.

Cost Impact: Will not increase the cost of construction

The code change proposal will not increase the cost of construction. The proposal does not change requirements for existing materials, but offers an additional option of alternative materials into the code.

FS 128-15

Table 721.1(2)

Proponent: Mike Fischer, Kellen Company, representing The Gypsum Association (mfischer@kellencompany.com)

2015 International Building Code

Revise as follows:

TABLE 721.1(2)
RATED FIRE-RESISTANCE PERIODS FOR VARIOUS WALLS AND PARTITIONS [a, o, p]

MATERIAL	ITEM NUMBER	CONSTRUCTION	MINIMUM FINISHED THICKNESS FACE-TO- FACE[b](inches)			
			4 hours	3 hours	2 hours	1 hour
15. Exterior or interior walls	15-2.4[d]	$3\frac{5}{8}$" No. 16 gage steel studs at 16" on center or 2" × 4" wood studs at 16" on center. Where metal lath is used, attach to the exterior side of studs with minimum 1" long No. 6 drywall screws at 6" on center. Brick units of clay or shale not less than $2\frac{5}{8}$" thick complying with ASTM C 216 installed in accordance with Section 1405.6 with a minimum 1" airspace. Interior side covered with two layers of $\frac{5}{8}$" thick Type X gypsum wallboard. Bottom layer attached to studs with 1" long No. 6 drywall screws at 24" on center. Top layer attached to studs with $1\frac{5}{8}$" long No. 6 drywall screws at 12" on center.	---	---	$8\frac{1}{2}$	—
15. Exterior or interior walls (cont.)	15-3.1	One layer 1" thick liner panel, inserted between 2 ½" floor and ceiling runners with 2 ½" C-H, C-T or I-shape studs between panels. 2 layers of 5/8" Type X gypsum board or gypsum panel products applied parallel or at right angles to studs with 1" long drywall screws spaced 24" on center on base layer and 1-5/8" long drywall screws spaced 12" on center on face layer.	---	---	3-3/4	---
15. Exterior or interior walls (cont.)	15-3.2	One layer 1" thick liner panel, inserted between 2 ½" floor and ceiling runners with 2 ½" C-H, C-T or I-shape studs between panels. 1 layer of 5/8" Type X gypsum board or gypsum panel products applied parallel or at right angles to each side of studs with 1" long drywall screws spaced 12" on center.	---	---	3-3/4	---

(Portions of table and footnotes not shown remain unchanged)

Reason: This proposal adds in two new configurations for wall assemblies to Table 721.1(2).
These assemblies are found in the latest edition of the Gypsum Association Fire-Resistance Design Manual (the first one is based on GA File Nos. WP 7054, WP 7058, WP 7060, WP 7065.2, WP 7065.4, WP 7065.5, WP 7076, WP 7078, and WP 7265; the second one is based on WP 7059, WP 7061, WP 7077, and WP 7257) and are consistent with UL designs (U415, U417, U438, U497, U498, V455, V473, and V493).

Inclusion of these additional configurations provide appropriate guidance for designers to achieve a 2-hour rating with a minimum assembly thickness of 3-3/4"

Cost Impact: Will not increase the cost of construction
The proposal adds additional options for the user of the code to meet current testing provisions and adds no new additional requirements to the code.

FS 128-15 : T721.1-FISCHER5358

FS 129-15

Table 721.1 (3)

Proponent: David Tyree, representing American Wood Council (dtyree@awc.org)

2015 International Building Code

Revise as follows:

TABLE 721.1 (3)
MINIMUM PROTECTION FOR FLOOR AND ROOF SYSTEMS[a, q]

FLOOR OR ROOF CONSTRUCTION	ITEM NUMBER	CEILING CONSTRUCTION	THICKNESS OF FLOOR OR ROOF SLAB (inches)				MINIMUM THICKNESS OF CEILING (inches)			
			4 hours	3 hours	2 hours	1 hour	4 hours	3 hours	2 hours	1 hour

30. Wood I-joist (minimum I-joist depth $9^1/_2$" with a minimum flange depth of $1^1/_2$" and a minimum flange cross-sectional area of 2.25 square inches; minimum web thickness of $^3/_8$") @ 24" o.c. Fiberglass insulation placed between I-joists supported by the resilient channels.	30-1.1	Minimum 0.019" thick resilient channel 16" o.c. (channels doubled at wallboard end joints), placed perpendicular to the joists and attached to each joist by $1^1/_4$" Type S drywall screws. Two layers of $^1/_2$" Type X gypsum wallboard applied with the long dimension perpendicular to the ~~I joists~~<u>resilient channels</u> with end joints staggered. The base layer is fastened with $1^1/_4$" Type S drywall screws spaced 12" o.c. and the face layer is fastened with $1^5/_8$" Type S drywall screws spaced 12" o.c. Face layer end joints shall not occur on the same I-joist as base layer end joints and edge joints shall be offset 24" from base layer joints. Face layer to be attached to base layer with $1^1/_2$" Type G drywall screws spaced 8" o.c. placed 6" from face layer end joints. Face layer wallboard joints to be taped and covered with joint compound.	—	—	—	Varies	—	—	—	1

(Portions of table and footnotes not shown remain unchanged)

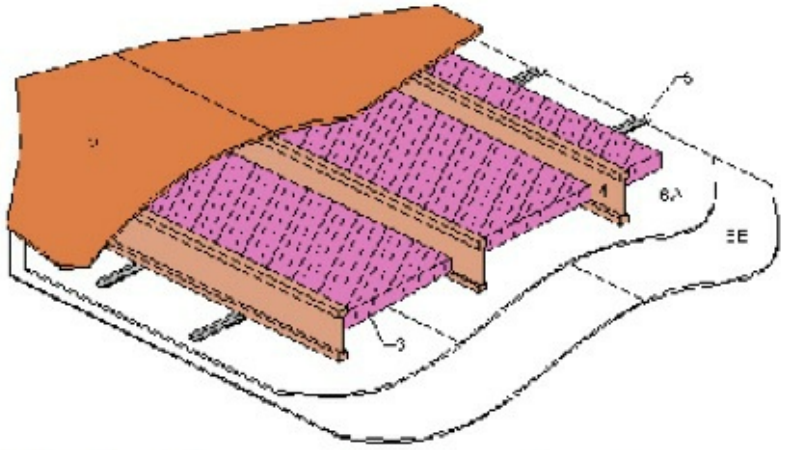
Reason: This proposal, in our opinion, is an editoral change as it simply is provided to correct what is currently specified in the 2015 IBC. The current text entry as published in the 2015 IBC is not correctly shown as the current code does not specify the resilient channel requirement as shown in the following link and the figure shown in the reason. This figure was referenced in the AWC code proposal submitted last code cycle and approved by the membership. (http://www.awc.org/publications/dca/dca3/WIJ-1.7.I-joist_2-layers_with_RCs.htm)
The reason statement for including this proposal previously in the 2015 IBC stated:

Many code officials have come to rely upon Table 720 as the preferred source of information regarding fire resistance rated assemblies. Because of its importance, we believe that the table should offer the most common generic assemblies. Floor systems utilizing I-joists have increased from less than 10 percent in 1990 to more than 50 percent. With the increased prevalence of I-joist floor/ceiling assemblies, including this assembly in the table will make the IBC more complete and it will be more useful to code officials. It is also expected that the document will be "user friendly", particularly for designers. In an effort to fulfill this expectation, we propose this common assembly for incorporation into Table 720.1(3). It is supported by ASTM E-119 test results as shown on the attached page. The following information and test results are provided with the understanding that their inclusion does not place them within the copyright release requirements of the signature statement.

For a complete list of AWC code change proposals and additional information please go to http://www.awc.org/Code-Officials/2015-IBC-Code-Changes.

WIJ-1.7 One-Hour Fire-Resistive Ceiling Assembly

Floor[a]/Ceiling - 100% Design Load - 1 Hour Rating - ASTM E 119 / NFPA 251



1. Floor Topping (optional, not shown): Gypsum concrete, lightweight or normal concrete topping.
2. Floor Sheathing: Minimum 23/32 inch thick tongue-and-groove wood sheathing (Exposure 1). Installed per code requirements with minimum 8d common nails.
3. Insulation: Fiberglass insulation placed between I-joists supported by the resilient channels.
4. Structural Members: Wood I-joists spaced a maximum of 24 inches on center.

Minimum I-joist flange depth: 1-1/2 inches — Minimum I-joist flange area: 2.25 inches^2
Minimum I-joist web thickness: 3/8 inch — Minimum I-joist depth: 9-1/2 inches

See ASTM D 5055-07 for qualification requirements.

5. Resilient Channels: Minimum 0.019 inch thick galvanized steel resilient channel attached perpendicular to the bottom flange of the I-joists with one 1-1/4 inch drywall screw. Channels spaced a maximum of 16 inches on center [24 inches on center when I-joists are spaced a maximum of 16 inches on center].
6. Gypsum Wallboard: Two layers of minimum 1/2 inch Type X gypsum wallboard attached with the long dimension perpendicular to the resilient channels as follows:

6a. Wallboard Base Layer: Base layer of wallboard attached to resilient channels using 1-1/4 inch Type S drywall screws at 12 inches on center.

6b. Wallboard Face Layer: Face layer of wallboard attached to resilient channels through base layer using 1-5/8 inch Type S drywall screws spaced 12 inches on center. Edge joints of wallboard face layer offset 24 inches from those of base layer. Additionally, wallboard face layer attached to base layer with 1-1/2 inch Type G drywall screws spaced 8 inches on center, placed 1-1/2 inches from face layer end joints.

7. Finish System (not shown): Face layer joints covered with tape and coated with joint compound. Screw heads covered with joint compound.

Fire Test conducted at National Research Council of Canada — Report No: A-4219.13.2 — March 23, 1998

STC and IIC Sound Ratings for Listed Assembly							
Without Gypsum Concrete				With Gypsum Concrete			
Cushioned Vinyl		Carpet & Pad		Cushioned Vinyl		Carpet & Pad	
STC	IIC	STC	IIC	STC	IIC	STC	IIC
59	50	55[b]	68[b]	65	51	63[b]	65[b]

[a] This assembly may also be used in a fire-rated roof/ceiling application, but only when constructed exactly as described.

[b] STC and IIC values estimated by David L. Adams Associates, Inc

Cost Impact: Will not increase the cost of construction
An editorial correction to the existing code.

FS 130-15

Table 721.1 (3)

Proponent: David Tyree, representing American Wood Council (dtyree@awc.org); Sam Francis (sfrancis@awc.org)

2015 International Building Code

Revise as follows:

TABLE 721.1 (3)
MINIMUM PROTECTION FOR FLOOR AND ROOF SYSTEMS[a, q]

FLOOR OR ROOF CONSTRUCTION	ITEM NUMBER	CEILING CONSTRUCTION	THICKNESS OF FLOOR OR ROOF SLAB (inches)				MINIMUM THICKNESS OF CEILING (inches)			
			4 hours	3 hours	2 hours	1 hour	4 hours	3 hours	2 hours	1 hour

27. Wood I-joist (minimum I-joist depth $9^{1}/_{2}$" with a minimum flange depth of $1^{5}/_{16}$" and a minimum flange cross-sectional area of 1.95 square inches; minimum web thickness of $^{3}/_{8}$") @ 24" o.c.	27-1.1	Minimum 0.019" thick resilient channel 16" o.c. (channels doubled at wallboard end joints), placed perpendicular to the joist and attached to each joist by $1^{1}/_{4}$" Type S drywall screws. Two layers of $^{1}/_{2}$" Type X gypsum wallboard applied with the long dimension perpendicular to the ~~I-joists~~resilient channels with end joints staggered. The base layer is fastened with $1^{1}/_{4}$" Type S drywall screws spaced 12" o.c. and the face layer is fastened with $1^{5}/_{8}$" Type S drywall screws spaced 12" o.c. Face layer end joints shall not occur on the same I-joist as base layer end joints and edge joints shall be offset 24" from base layer joints. Face layer to also be attached to base layer with $1^{1}/_{2}$" Type G drywall screws spaced 8" o.c. placed 6" from face layer end joints. Face layer wallboard joints to be taped and covered with joint compound.	—	—	—	Varies	—	—	—	1

(Portions of table and footnotes not shown remain unchanged)

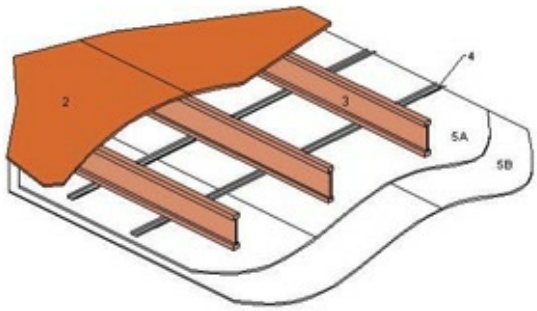
Reason: This proposal, in our opinion, is an editoral change as it simply is provided to correct what is currently specified in the 2015 IBC. The current text entry as published in the 2015 IBC is not correctly shown as the current code does not specify the resilient channel requirement as shown in the following link and the figure shown in the reason. This figure was referenced in the AWC code proposal submitted last code cycle and approved by the membership. (http://www.awc.org/publications/dca/dca3/WIJ-1.6.I-joist_2-layers_with_RCs.htm)
The reason statement for including this proposal previously in the 2015 IBC stated:

Reason: Many code officials have come to rely upon Table 720 as the preferred source of information regarding fire resistance rated assemblies. Because of its importance, we believe that the table should offer the most common generic assemblies. Floor systems utilizing I-joists have increased from less than 10 percent in 1990 to more than 50 percent. With the increased prevalence of I-joist floor/ceiling assemblies, including this assembly in the table will make the IBC more complete and it will be more useful to code officials. It is also expected that the document will be "user friendly", particularly for designers. In an effort to fulfill this expectation, we propose this common assembly for incorporation into Table 720.1(3). It is supported by ASTM E-119 test results as shown on the attached page. The following information and test results are provided with the understanding that their inclusion does not place them within the copyright release requirements of the signature statement. For a complete list of AWC code change proposals and additional information please go to http://www.awc.org/Code-Officials/2015-IBC-Code-Changes. For more information concerning CLT lumber and construction, please go to http://www.rethinkwood.com/tall-wood-survey.

For a complete list of AWC code change proposals and additional information please go to http://www.awc.org/Code-Officials/2015-IBC-Code-Changes.

WIJ-1.6 One-Hour Fire-Resistive Ceiling Assembly

Floor[a]/Ceiling - 100% Design Load - 1 Hour Rating - ASTM E 119 / NFPA 251



1. Floor Topping (optional, not shown): Gypsum concrete, lightweight or normal concrete topping.
2. Floor Sheathing: Minimum 23/32 inch thick tongue-and-groove wood sheathing (Exposure 1). Installed per code requirements with minimum 8d common nails.
3. Structural Members: Wood I-joists spaced a maximum of 24 inches on center.
Minimum I-joist flange depth: 1-5/16 inches
Minimum I-joist web thickness: 3/8 inch
Minimum I-joist flange area: 1.95 inches^2
Minimum I-joist depth: 9-1/2 inches

See ASTM D 5055-07 for qualification requirements.

4. Resilient Channels[b]: Minimum 0.019 inch thick galvanized steel resilient channel attached perpendicular to the bottom flange of the I-joists with one 1-1/4 inch drywall screw. Channels spaced a maximum of 16 inches on center [24 inches on center when I-joists are spaced a maximum of 16 inches on center].
5. Gypsum Wallboard: Two layers of minimum 1/2 inch Type X gypsum wallboard attached with the long dimension perpendicular to the resilient channels as follows:
5a. Wallboard Base Layer: Base layer of wallboard attached to resilient channels using 1-1/4 inch Type S drywall screws at 12 inches on center.
5b. Wallboard Face Layer: Face layer of wallboard attached to resilient channels through base layer using 1-5/8 inch Type S drywall screws spaced 12 inches on center. Edge joints of wallboard face layer offset 24 inches from those of base layer. Additionally, wallboard face layer attached to base layer with 1-1/2 inch Type G drywall screws spaced 8 inches on center, placed 1-1/2 inches from face layer end joints.
6. Finish System (not shown): Face layer joints covered with tape and coated with joint compound. Screw heads covered with joint compound.

Fire Test conducted at National Research Council of Canada Report No: A-4440.1 June 24, 1997

STC and IIC Sound Ratings for Listed Assembly							
Without Gypsum Concrete				With Gypsum Concrete			
Cushioned Vinyl		Carpet & Pad		Cushioned Vinyl		Carpet & Pad	
STC	IIC	STC	IIC	STC	IIC	STC	IIC
-	-	54	68	-	-	58[c]	55[c]

[a] This assembly may also be used in a fire-rated roof/ceiling application, but only when constructed exactly as described.
[b] Direct attachment of gypsum wallboard in lieu of attachment to resilient channels is typically deemed acceptable. When gypsum wallboard is directly attached to the I-joists, the wallboard should be installed with long dimension perpendicular to the I-joists and sound ratings for WIJ-1.5 should be used.
[c] STC and IIC values estimated by David L. Adams Associates, Inc

AMERICAN WOOD COUNCIL AMERICAN FOREST & PAPER ASSOCIATION, INC January 2009

Cost Impact: Will not increase the cost of construction
Editoral correction to existing code language.

FS 130-15 : T721.1-TYREE5066

FS 131-15

722

Proponent: Victor Cuevas, representing City of Los Angeles

2015 International Building Code

Delete without substitution:

~~**SECTION 722**~~
~~**CALCULATED FIRE RESISTANCE**~~

Reason: Delete entire section and reference out of the code since it's not frequently used.

Cost Impact: Will increase the cost of construction
Revision to Section 722 will remove the design options from the code and place them on a separate document. This will increase the cost of construction if a designer has to purchase the separate design standard.

FS 131-15 : 722-CUEVAS4805

FS 132-15

803.3

Proponent: David Tyree, representing American Wood Council (dtyree@awc.org)

2015 International Building Code

Revise as follows:

803.3 Heavy timber exemption. Exposed portions of building elements complying with the requirements for buildings of Type IV construction in Section 602.4 shall not be subject to *interior finish* requirements except in interior exit stairways, interior exit ramps, and exit passageways.

Reason: Cross laminated timber may be used to form the entire interior surfaces of egress elements and should be regulated in those circumstances. The requirement is the same for any other material used in those circumstances. For a complete list of AWC code change proposals and additional information please go to http://www.awc.org/Code-Officials/2015-IBC-Code-Changes.

Cost Impact: Will increase the cost of construction
May increase cost of construction as a higher flamespread requirement would be required in these new areas.

FS 132-15 : 803.3-TYREE4646

FS 133-15

803.9.1 (New)

Proponent: William Koffel, representing Self (wkoffel@koffel.com)

2015 International Building Code

Add new text as follows:

803.9.1 Identification. Each HDPE or PP panel used as an interior finish shall be identified by the manufacturer with a *manufacturer's designation* indicating compliance with 803.1.2. The designation shall be acid etched, sand blasted, laser etched, embossed, or of a type that, once applied, cannot be removed without being destroyed.

Reason: The Manufacturer's Designation provides a method by which code officials and others can determine that the panels are in compliance with the Code. This can be easily done and the requirement is similar to that which is required for safety glazing.

Cost Impact: Will not increase the cost of construction
The cost of compliance is with the testing. Provided the panels have been tested as required by the Code, there should be no cost impact associated with providing a Manufacturer's Designation.

FS 134-15

Table 803.11

Proponent: John Williams, CBO, Chair, representing Adhoc Health Care Committee (AHC@iccsafe.org)

2015 International Building Code

Revise as follows:

TABLE 803.11
INTERIOR WALL AND CEILING FINISH REQUIREMENTS BY OCCUPANCY[k]

GROUP	SPRINKLERED[l]			NONSPRINKLERED		
	Interior exit stairways, interior exit ramps and exit passageways[a, b]	Corridors and enclosure for exit access stairways and exit access ramps	Rooms and enclosed spaces[c]	Interior exit stairways, interior exit ramps and exit passageways[a, b]	Corridors and enclosure for exit access stairways and exit access ramps	Rooms and enclosed spaces[c]
A-1 & A-2	B	B	C	A	A[d]	B[e]
A-3[f], A-4, A-5	B	B	C	A	A[d]	C
B, E, M, R-1	B	C[m]	C	A	B	C
R-4	B	C	C	A	B	B
F	C	C	C	B	C	C
H	B	B	C[g]	A	A	B
I-1	B	C	C	A	B	B
I-2	B	B	B[h, i]	A	A	B
I-3	A	A[j]	C	A	A	B
I-4	B	B	B[h, i]	A	A	B
R-2	C	C	C	B	B	C
R-3	C	C	C	C	C	C
S	C	C	C	B	B	C
U	No restrictions			No restrictions		

For SI: 1 inch = 25.4 mm, 1 square foot = 0.0929m^2 .

a. Class C interior finish materials shall be permitted for wainscotting or paneling of not more than 1,000 square feet of applied surface area in the grade lobby where applied directly to a noncombustible base or over furring strips applied to a noncombustible base and fireblocked as required by Section 803.13.1.

b. In other than Group I-3 occupancies in buildings less than three stories above grade plane, Class B interior finish for nonsprinklered buildings and Class C interior finish for sprinklered buildings shall be permitted in interior exit stairways and ramps.

c. Requirements for rooms and enclosed spaces shall be based upon spaces enclosed by partitions. Where a fire-resistance rating is required for structural elements, the enclosing partitions shall extend from the floor to the ceiling. Partitions that do not comply with this shall be considered enclosing spaces and the rooms or spaces on both sides shall be considered one. In determining the applicable requirements for rooms and enclosed spaces, the specific occupancy thereof shall be the governing factor regardless of the group classification of the building or structure.

d. Lobby areas in Group A-1, A-2 and A-3 occupancies shall not be less than Class B materials.

e. Class C interior finish materials shall be permitted in places of assembly with an occupant load of 300 persons or less.

f. For places of religious worship, wood used for ornamental purposes, trusses, paneling or chancel furnishing shall be permitted.

g. Class B material is required where the building exceeds two stories.

h. Class C interior finish materials shall be permitted in administrative spaces.

i. Class C interior finish materials shall be permitted in rooms with a capacity of four persons or less.

j. Class B materials shall be permitted as wainscotting extending not more than 48 inches above the finished floor in corridors and exit access stairways and ramps.

k. Finish materials as provided for in other sections of this code.

l. Applies when protected by an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.

m. Corridors in ambulatory care facilities shall be provided with Class A or B materials.

Reason: This footnote increases the corridor finish requirements for ambulatory care facilities, eliminated the Class C option for sprinklered facilities. The sub-group of Group contains occupants who are incapable of self-preservation. While it is not a defend-in-place scenario, where occupants are expected to stay inside of the building, it is a staged evacuation scenario. Occupants will stay in the building for a short period of time, but the ultimate goal is complete evacuation. This upgrade is to ensure that the corridor are tenable until evacuation is complete. This also matches the current requirements for certification under Medicaid and Medicare.
The ICC Ad Hoc Committee on Healthcare (AHC) has just completed its 4th year. The AHC was established by the ICC Board to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. This is a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Information on the AHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the AHC effort can be downloaded from the AHC website at: http://www.iccsafe.org/cs/AHC/Pages/default.aspx.

Cost Impact: Will increase the cost of construction
Increasing the finish rating on a corridor will add new construction cost over what is required currently in the IBC/IFC. Any medicare certified ambulatory care facilities are required by federal CMS regulations to have this system, therefore, the cost of construction will not increase for those facilities. Note that not all ambulatory care facilities are medicare certified.

FS 134-15 : T803.11-WILLIAMS4167

FS 135-15

803.11 (New)

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

2015 International Building Code

Add new text as follows:

803.11 Laminated products factory-produced with a wood substrate Laminated products factory-produced with a wood substrate shall comply with one of the following:

1. The laminated product shall meet the criteria of Section 803.1.1 when tested in accordance with NFPA 286 using the product mounting system, including adhesive, of actual use, as described in Section 5.8 of NFPA 286.
2. The laminated product shall have a Class A, B, or C flame spread index and smoke developed index, based on the requirements of Table 803.1.1, in accordance with ASTM E84 or UL 723. Test specimen preparation and mounting shall be in accordance with ASTM E2579.

Add new standard(s) as follows: ASM E2579-13 Standard Practice for Specimen Preparation and Mounting of Wood Products to Assess Surface Burning

Reason: This language has not yet been incorporated into the IFC (which did incorporate the language dealing with on site applied facings in IFC section 803.7), because it wanted the IBC to take the lead. ASTM has developed mounting methods for both "facings or wood veneer intended to be applied on site over a wood substrate" and laminated products that are factory-produced and have a wood substrate. The concept is that facings that are produced as part of a commercial (factory-produced) panel are finished products and the manufacturer should be responsible to ensure that the product itself (the full panel) is safe and there is no need to discuss a substrate. It has been shown that, when veneers are applied over a wood substrate the resulting flame spread is much higher than when applied over gypsum board or over a non-combustible substrate. Therefore the requirement in ASTM E2579 is that the testing be done with the full product and, thus, there will no need to retest for different substrates. Similarly, NFPA 286 contains a section that addresses testing of wall covering materials, including facings applied on site and laminated products produced in the factory. Facings applied on site over wood substrates are tested using ASTM E2404.
Note that this proposal is not intended to replace existing section 803.11 but to be incorporated between existing sections 803.10 and 803.12. Note also that the proposal to add a clarification of the requirements for facings or wood veneers intended to be applied on site over a wood substrate is also intended to be incorporated as a new section between existing sections 803.10 and 803.12.

NFPA 286 language

5.8 Wall or Ceiling Covering Materials.

5.8.2 Where the wall or ceiling covering system is a factory produced wall panel, the adhesive shall be the same one used in the manufacture of the factory-produced wall or ceiling panel.

ASM E2579 - Standard Practice for Specimen Preparation and Mounting of Wood Products to Assess Surface Burning

1. Scope

1.1 This practice describes procedures for specimen preparation and mounting when testing wood products to assess flame spread and smoke development as surface burning characteristics using Test Method E84.

1.2 This practice applies also to laminated products factory produced with a wood substrate (see 8.6). This practice does not apply to wood veneers or facings intended to be applied on site over a wood substrate, which are covered by Practice E2404.

1.3 Testing is conducted with Test Method E84.

ASTM E2404 – Standard Practice for Specimen Preparation and Mounting of Textile, Paper or Polymeric (Including Vinyl) Wall or Ceiling Coverings, and of Facings and Wood Veneers Intended to be Applied on Site Over a Wood Substrate, to Assess Surface Burning Characteristics

1. Scope

1.1 This practice describes procedures for specimen preparation and mounting when testing textile, paper or polymeric (including vinyl and expanded vinyl) wall or ceiling covering materials to assess flame spread and smoke development as surface burning characteristics using Test Method E84.

1.2 This practice applies also to facings or wood veneers intended to be applied on site over a wood substrate (see 8.7). This practice does not apply to laminated products factory produced with a wood substrate, which are covered by Practice E2579.

1.3 Testing is conducted with Test Method E84.

Cost Impact: Will not increase the cost of construction
Clarifies the mounting method for factory produced panels mounted on wood substrates.

Analysis: A review of the standard proposed for inclusion in the code, ASTM E2579, 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, 2015.

FS 136-15

803.11 (New)

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

2015 International Building Code

Add new text as follows:

803.11 Facings or wood veneers intended to be applied on site over a wood substrate Facings or veneers intended to be applied on site over a wood substrate shall comply with one of the following:

1. The facing or veneer shall meet the criteria of Section 803.1.1 when tested in accordance with NFPA 286 using the product-mounting system, including adhesive, as described in Section 5.9 of NFPA 286.
2. The facing or veneer shall have a Class A, B or C flame spread index and smoke-developed index, based on the requirements of Table 803.11, in accordance with ASTM E 84 or UL 723. Test specimen preparation and mounting shall be in accordance with ASTM E 2404.

Reason: This language has already been approved by the IFC (section 803.7). ASTM has developed mounting methods for both "facings or wood veneer intended to be applied on site over a wood substrate" and laminated products that are factory-produced and have a wood substrate. The IFC agreed to move ahead with this one (dealing with on site facings) but wanted the IBC to take the lead with the factory-produced ones. The concept is that these facings (applied on site) are basically the same as wall coverings and the manufacturer should be responsible for the facing only and needs to ensure that the material is safe and should test over the appropriate substrate. It has been shown that, when veneers are applied over a wood substrate the resulting flame spread is much higher than when applied over gypsum board or over a non-combustible substrate. Therefore the requirement in ASTM E2404 is that the testing be done over a standard wood substrate and, thus, there will no need to retest for different types of wood. Similarly, NFPA 286 contains a section that addresses testing of wall covering materials, including facings applied on site and laminated products produced in the factory. Panels including factory applied facings with wood substrates are tested using ASTM E2579.
Note that this proposal is not intended to replace existing section 803.11 but to be incorporated between existing sections 803.10 and 803.12. Note also that the proposal to add a clarification of the requirements for laminated products factory-produced with a wood substrate is also intended to be incorporated as a new section between existing sections 803.10 and 803.12.

NFPA 286 language

5.9 Laminated Products with Wood Substrates.

5.9.1 Laminated products shall be tested as they are intended to be installed.

5.9.1.1 The test specimens shall consist of the finished product, namely the combination of the facing or veneer, the adhesives or fasteners used, and the specific wood substrate that will be used.

5.9.2 If the laminated product consists of a facing or veneer intended to be applied on-site over a wood substrate, the facing or veneer shall be tested as described in 5.9.2.1 and 5.9.2.2.

5.9.2.1* The test specimens shall comply with the following:

(1) Specimens shall consist of the facing or veneer mounted on the "A" face of nominal 12 mm (15⁄32 in.) untreated plywood with a face veneer of Douglas fir.

(2) The plywood shall comply with NIST Voluntary Product Standard PS 1, Structural Plywood.

(3) The plywood shall carry one of the following grade stamps: (a) APA-The Engineered Wood Association (b) TECO, indicating that the plywood has been graded PS 1 A-B and is for exterior exposure (c) CSA Standard O121, Douglas Fir Plywood.

5.9.2.2 The adhesive used to attach the facing or veneer to the wood substrate in 5.9.2.1 shall be that specified by the manufacturer of the facing or veneer and applied in accordance with manufacturer's application instructions.

Also, for information, from NFPA 286:

5.8.9 Wall or Ceiling Coverings Intended to Be Applied over a Wood Substrate. If the wall or ceiling coverings are intended to be applied over a wood substrate, the specimens shall consist of the wall or ceiling covering mounted on untreated plywood, with a face veneer of Douglas fir. The plywood shall have the same thickness as the wood substrate used in actual installations, and shall comply with NIST Voluntary Product Standard PS 1-07, Structural Plywood. The plywood shall be marked with a grade stamp indicating that the plywood has been graded PS 1-07 A-B and is for exterior exposure. The grade stamp shall be issued by a quality control agency. Alternatively, the plywood shall be permitted to be stamped as conforming to CSA Standard O121, Douglas Fir Plywood.

ASTM E2404 – Standard Practice for Specimen Preparation and Mounting of Textile, Paper or Polymeric (Including Vinyl) Wall or Ceiling Coverings, and of Facings and Wood Veneers Intended to be Applied on Site Over a Wood Substrate, to Assess Surface Burning Characteristics

1. Scope

1.1 This practice describes procedures for specimen preparation and mounting when testing textile, paper or polymeric (including vinyl and expanded vinyl) wall or ceiling covering materials to assess flame spread and smoke development as surface burning characteristics using Test Method E84.

1.2 This practice applies also to facings or wood veneers intended to be applied on site over a wood substrate (see 8.7). This practice does not apply to laminated products factory produced with a wood substrate, which are covered by Practice E2579.

1.3 Testing is conducted with Test Method E84.

ASM E2579 - Standard Practice for Specimen Preparation and Mounting of Wood Products to Assess Surface Burning Characteristics

1. Scope

1.1 This practice describes procedures for specimen preparation and mounting when testing wood products to assess flame spread and smoke

development as surface burning characteristics using Test Method E84.

1.2 This practice applies also to laminated products factory produced with a wood substrate (see 8.6). This practice does not apply to wood veneers or facings intended to be applied on site over a wood substrate, which are covered by Practice E2404.

1.3 Testing is conducted with Test Method E84.

Cost Impact: Will not increase the cost of construction
This clarifies the testing protocol.

FS 136-15 : 803.11 (New)-HIRSCHLER4299

FS 137-15

803.13.1, 803.13.1.1

Proponent: Lee Kranz, City of Bellevue, WA, representing Washington Association of Building Officials Technical Code Development Committee

2015 International Building Code

Revise as follows:

803.13.1 Direct attachment and furred construction. Where walls ~~and~~, ceilings or structural elements are required by any provision in this code to be of fire-resistance-rated or noncombustible construction, the *interior finish* material shall be applied directly against such construction or to furring strips not exceeding $1^{3}/_{4}$ inches (44 mm), applied directly against such surfaces.

803.13.1.1 Furred construction. ~~:~~ If the interior finish material is applied to furring strips, the intervening spaces between such furring strips shall comply with one of the following:

1. Be filled with material that is inorganic or noncombustible;
2. Be filled with material that meets the requirements of a Class A material in accordance with Section 803.1.1 or 803.1.2; or
3. Be fireblocked at a maximum of 8 feet (2438 mm) in every direction in accordance with Section 718.

Exception: Concealed spaces created with noncombustible furring strips.

Reason: Currently, Section 803.13.1.1 could be interpreted to require fire stopping or fire blocking materials even if there were no combustible materials within the concealed spaces created by the furring stripes. The proposed exception clarifies that there is no need for fire stopping or fire blocking when there is nothing combustible within the concealed space.
The term "structural elements" is added to Section 803.13.1 for consistency with Section 803.13.

Cost Impact: Will not increase the cost of construction
This code change will save money because there will be no need to provide fire blocking or fire stopping unless there are combustible materials within a fire-reistance rated wall assembly.

FS 137-15 : 803.13.1.1-KRANZ3769

FS 138-15

803.13.2

Proponent: Stephen DiGiovanni, Clark County Building Department, representing Southern Nevada Chapter of ICC (sdigiovanni@clarkcountynv.gov)

2015 International Building Code

Revise as follows:

803.13.2 Set-out construction. Where walls and ceilings are required to be of fire-resistance-rated or noncombustible construction and walls are set out or ceilings are dropped distances greater than specified in Section 803.13.1, Class A finish materials, in accordance with Section 803.1.1 or 803.1.2, shall be used.

Exceptions:

1. Where *interior finish* materials are protected on both sides by an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2.
2. Where *interior finish* materials are attached to noncombustible backing or furring strips installed as specified in Section 803.13.1.1.
3. Where the combustible void is filled with an approved noncombustible material.

Reason: The proposed third exception meets the intent of the code in that noncombustible material, while not structural, meets the combustibility requirements of Section 803.13.1. The applicability of this solution is codified in 803.13.1 item 2. This proposal simply allows larger areas to be filled. This would reduce the complexity of framing small pop-outs and covering with gypsum board or plaster.

Cost Impact: Will not increase the cost of construction
This proposal adds an additional option when addressing set-out construction, but does not change the current code requirements, so the cost of construction is not affected by this proposal.

FS 139-15

803.1, 803.1.1, 803.1.1.1 (New), 803.1.2, 803.1.2.1, 803.1.3, 803.1.3.1, 803.1.4, 803.5, 803.5.1 (New), 803.5.1.1 (New), 803.5.2 (New), 803.6, 803.7, 803.8, 803.9, 803.11

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

2015 International Building Code

Revise as follows:

803.1 General. *Interior wall and ceiling finish* materials shall be classified for fire performance and smoke development in accordance with Section 803.1.1 or 803.1.2, except as shown in Sections ~~803.2~~803.1.3 through 803.13. Materials tested in accordance with Section ~~803.1.2~~80 3.1.1 shall not be required to be tested in accordance with Section ~~803.1.1~~803.1.2.

803.1.1 Interior wall and ceiling finish materials~~.~~ tested in accordance with NFPA 286 Interior wall and ceiling finish materials shall be classified in accordance with ~~ASTM E 84 or UL 723~~NFPA 286 and comply with Section 803.1.1.1. ~~Such *interior finish* materials~~Materials complying with Section 803.1.1.1 shall be ~~grouped in~~considered to also comply with the ~~following classes in accordance with their flame spread and *smoke-developed indexes*.~~
requirements of a Class A~~:= Flame spread index 0-25; smoke developed index 0-450.~~
~~Class B:= Flame spread index 26-75; smoke developed index 0-450.~~
~~Class C:= Flame spread index 76-200; smoke developed index 0-450.~~

> ~~**Exception:** Materials tested,~~ in accordance with Section 803.1.2.

Add new text as follows:

803.1.1.1 Acceptance Criteria for NFPA 286 The interior finish shall comply with the following:

1. During the 40 kW exposure, flames shall not spread to the ceiling.
2. The flame shall not spread tot he outer extremity of the sample on any wall or ceiling.
3. Flashover, as defined in NFPA 286, shall not occur.
4. The peak heat release rate throughout the test shall not exceed 800 kW.
5. The total smoke released throughout the test shall not exceed 1,000 m^2.

Revise as follows:

803.1.2 ~~Room corner test for interior~~Interior wall or ceiling finish materials~~.~~ tested in accordance with ASTM E84 or UL 723
Interior wall ~~or~~and ceiling finish materials shall be ~~permitted to~~classified in accordancew ith ASTM E 84 or UL 723. Such interior finish materials shall be grouped in the following classes in accordance with their flame spread and smoke-developed indexes.
Class A: = Flame spread index 0-25; smoke-developed index 0-450.
Class B: = Flame spread index 26-75; smoke-developed index 0-450.
Class C: - Flame spread index 76-200; smoke-developed index 0-450.

> **Exception:** Materials tested in accordance with ~~NFPA 286. Interior wall or ceiling finish materials tested~~Section 803.1.1 and as indicated in ~~accordance with NFPA 286 shall comply with Section 803.1.2.1.~~Sections 803.1.3 through 803.13.

~~**803.1.2.1 Acceptance criteria for NFPA 286.** The interior finish shall comply with the following:~~

1. ~~During the 40 kW exposure, flames shall not spread to the ceiling.~~
2. ~~The flame shall not spread to the outer extremity of the sample on any wall or ceiling.~~
3. ~~Flashover, as defined in NFPA 286, shall not occur.~~
4. ~~The peak heat release rate throughout the test shall not exceed 800 kW.~~
5. ~~The total smoke released throughout the test shall not exceed 1,000 m^2.~~

803.1.3 ~~Room corner test for textile~~Interior wall ~~coverings~~ and ~~expanded vinyl wall coverings.~~ceiling finish materials with different requirements ~~Textile wall coverings and expanded vinyl wall coverings~~
The materials indicated in Sections 803.2 through 803.13 shall ~~meet the criteria of Section 803.1.3.1 when~~be tested as indicated in the ~~manner intended for use in accordance with the Method B protocol of NFPA 265 using the product-mounting system, including adhesive.~~corresponding sections.

~~**803.1.3.1 Acceptance criteria for NFPA 265.** The interior finish shall comply with the following:~~

1. ~~During the 40 kW exposure, flames shall not spread to the ceiling.~~
2. ~~The flame shall not spread to the outer extremities of the samples on the 8-foot by 12-foot (203 by 305 mm) walls.~~
3. ~~Flashover, as defined in NFPA 265, shall not occur.~~

~~4. The total smoke released throughout the test shall not exceed 1,000 m^2.~~

~~**803.1.4 Acceptance criteria for textile and expanded vinyl wall or ceiling coverings tested to ASTM E 84 or UL 723.** Textile wall and ceiling coverings and expanded vinyl wall and ceiling coverings shall have a Class A flame spread index in accordance with ASTM E 84 or UL 723 and be protected by an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2. Test specimen preparation and mounting shall be in accordance with ASTM E 2404.~~

803.5 Textile wall coverings. Where used as interior wall finish materials, textile wall coverings, including materials having woven or nonwoven, napped, tufted, looped or similar surface and carpet and similar textile materials, shall be tested in the manner intended for use, using the product mounting system, including adhesive, and shall comply with the requirements of one of the following: Section ~~803.1.2~~803.1.1, ~~803.1.3~~Section 803.5.1 or ~~803.1.4~~Section 803.5.2.

Add new text as follows:

803.5.1 Room corner test for textile wall coverings and expanded vinyl wall coverings Textile wall coverings and expanded vinyl wall coverings shall meet the criteria of Section 803.5.1.1 when tested in the manner intended for use in accordance with the Method B protocol of NFPA 265 using the product mounting system, including adhesive.

803.5.1.1 Acceptance Criteria for NFPA 265 The interior finish shall comply with the following:

1. During the 40 kW exposure, flames shalln ot spread to the ceiling.
2. The flame shall not spread to the outer extremities of the samples on the 8-foot by 12-foot (203 by 305 mm) walls.
3. Flashover, as defined in NFPA 265, shall not occur.
4. The total smoke release throughout the test shall not exceed 1,000 m^2.

803.5.2 Acceptance Criteria for textile and expanded vinyl wall or ceiling coverings tested to ASTM E 84 or UL 723 Textile wall and ceiling coverings and expanded vinyl wall and ceiling coverings shall have a Class A flame spread index in accordance with ASTM E 84 or UL 723 and be protected by an automatic sprinkler system installed in accordance with Section 903.1.1 or 903.1.2. Test specimen preparation and mounting shall be in accordance with ASTM E 2404.

Revise as follows:

803.6 Textile ceiling coverings. Where used as interior ceiling finish materials, textile ceiling coverings, including materials having woven or nonwoven, napped, tufted, looped or similar surface and carpet and similar textile materials, shall be tested in the manner intended for use, using the product mounting system, including adhesive, and shall comply with the requirements of Section ~~803.1.2~~803.1.1 or ~~803.1.4~~of Section 803.5.2.

803.7 Expanded vinyl wall coverings. Where used as interior wall finish materials, expanded vinyl wall coverings shall be tested in the manner intended for use, using the product mounting system, including adhesive, and shall comply with the requirements of one of the following: Section ~~803.1.2~~803.1.1, ~~803.1.3~~Section 803.5.1 or ~~803.1.4~~Section 803.5.2.

803.8 Expanded vinyl ceiling coverings. Where used as interior ceiling finish materials, expanded vinyl ceiling coverings shall be tested in the manner intended for use, using the product mounting system, including adhesive, and shall comply with the requirements of Section ~~803.1.2~~803.1.1 or ~~803.1.4~~Section 803.5.2.

803.9 High-density polyethylene (HDPE) and polypropylene (PP). Where high-density polyethylene or polypropylene is used as an interior finish it shall comply with Section ~~803.1.2~~803.1.1.

803.11 Interior finish requirements based on group. *Interior wall and ceiling finish* shall have a flame spread index not greater than that specified in Table 803.11 for the group and location designated. *Interior wall and ceiling finish* materials tested in accordance with NFPA 286 and meeting the acceptance criteria of Section ~~803.1.2.1~~803.1.1.1, shall be permitted to be used where a Class A classification in accordance with ASTM E 84 or UL 723 is required.

Reason: This reorganizes section 803 to make it follow the testing logic, but it does not change any of the requirements.
Any interior wall and ceiling finish material is permitted to be tested to NFPA 286 and therefore this should come first, as section 803.1.1. This needs to be followed by the criteria for NFPA 286 testing. The section also needs to say that anything that passes NFPA 286 (i.e. the corresonding criteria) is acceptable as a Class A in accordance with ASTM E84 and does not need retesting. Then comes the section on ASTM E84, with the corresponding criteria, as section 803.1.2.

The next section, 803.1.3, addresses the materials that have other requirements and cannot simply be tested to either one of the above without further details. That includes all of the materials in sections 803.2 through 803.13.

Textile wall coverings and expanded vinyl wall coverings are covered in 803.5 and 803.7. Therefore the testing in accordance with NFPA 265 needs to move to those sections and that is being done. When dealing with expanded vinyl wall coverings the criteria are not repeated but just reference the textile wall coverings section.

Textile and expanded vinyl ceiling coverings stay as is, just with the section reference changed. The same is true for HDPE and PP.

The only other change is the section reference in 803.11, again without changing requirements.

Table 803.1 does not need any changes.

In order to ensure that the proposed reorganization appears in the correct order, I attach a copy of the final text as it should read, legislative language.

The text as it should read, in its final form is shown below:

Section 803, as proposed for IBC 2018, in final form

803.1 General. Interior wall and ceiling finish materials shall be classified for fire performance and smoke development in accordance with Section 803.1.1 or 803.1.2, except as shown in Sections 803.1.3 through 803.13. Materials tested in accordance with Section 803.1.1 shall not be required to be tested in accordance with Section 803.1.2.

803.1.1 Interior wall and ceiling finish materials tested in accordance with NFPA 286. Interior wall and ceiling finish materials shall be classified in accordance with NFPA 286 and comply with Section 803.1.1.1. Materials complying with Section 803.1.1.1 shall be considered also to comply with the requirements of a Class A in accordance with Section 803.1.2.

803.1.1.1 Acceptance criteria for NFPA 286. The interior finish shall comply with the following:
1. During the 40 kW exposure, flames shall not spread to the ceiling.
2. The flame shall not spread to the outer extremity of the sample on any wall or ceiling.
3. Flashover, as defined in NFPA 286, shall not occur.
4. The peak heat release rate throughout the test shall not exceed 800 kW.
5. The total smoke released throughout the test shall not exceed 1,000 m^2.

803.1.2 Interior wall and ceiling finish materials tested in accordance with ASTM E84 or UL 723. Interior wall and ceiling finish materials shall be classified in accordance with ASTM E 84 or UL 723. Such interior finish materials shall be grouped in the following classes in accordance with their flame spread and smoke-developed indexes.
Class A: = Flame spread index 0-25; smoke developed index 0-450.
Class B: = Flame spread index 26-75; smoke developed index 0-450.
Class C: = Flame spread index 76-200; smoke developed index 0-450.
Exception: Materials tested in accordance with Section 803.1.1 and as indicated in Section 803.1.3 through 803.13.

803.1.3 Interior wall and ceiling finish materials with different requirements. The materials indicated in Sections 803.2 through 803.13 shall be tested as indicated in the corresponding sections.

803.2 Thickness exemption. Materials having a thickness less than 0.036 inch (0.9 mm) applied directly to the surface of walls or ceilings shall not be required to be tested.

803.3 Heavy timber exemption. Exposed portions of building elements complying with the requirements for buildings of Type IV construction in Section 602.4 shall not be subject to interior finish requirements.

803.4 Foam plastics. Foam plastics shall not be used as interior finish except as provided in Section 2603.9. This section shall apply both to exposed foam plastics and to foam plastics used in conjunction with a textile or vinyl facing or cover.

803.5 Textile wall coverings. Where used as interior wall finish materials, textile wall coverings, including materials having woven or nonwoven, napped, tufted, looped or similar surface and carpet and similar textile materials, shall be tested in the manner intended for use, using the product mounting system, including adhesive, and shall comply with the requirements of one of the following: Section 803.1.1, Section 803.5.1 or Section 803.5.2.

803.5.1 Room corner test for textile wall coverings and expanded vinyl wall coverings. Textile wall coverings and expanded vinyl wall coverings shall meet the criteria of Section 803.5.1.1 when tested in the manner intended for use in accordance with the Method B protocol of NFPA 265 using the product-mounting system, including adhesive.

8**03.5.1.1 Acceptance criteria for NFPA 265**. The interior finish shall comply with the following:
1. During the 40 kW exposure, flames shall not spread to the ceiling.
2.The flame shall not spread to the outer extremities of the samples on the 8-foot by 12-foot (203 by 305 mm) walls.
3. Flashover, as defined in NFPA 265, shall not occur.
4. The total smoke released throughout the test shall not exceed 1,000 m2.

803.5.2 Acceptance criteria for textile and expanded vinyl wall or ceiling coverings tested to ASTM E 84 or UL 723. Textile wall and ceiling coverings and expanded vinyl wall and ceiling coverings shall have a Class A flame spread index in accordance with ASTM E 84 or UL 723 and be protected by an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2. Test specimen preparation and mounting shall be in accordance with ASTM E 2404.

803.6 Textile ceiling coverings. Where used as interior ceiling finish materials, textile ceiling coverings, including materials having woven or nonwoven, napped, tufted, looped or similar surface and carpet and similar textile materials, shall be tested in the manner intended for use, using the product mounting system, including adhesive, and shall comply with the requirements of Section 803.1.1 or of Section 803.5.2.

803.7 Expanded vinyl wall coverings. Where used as interior wall finish materials, expanded vinyl wall coverings shall be tested in the manner intended for use, using the product mounting system, including adhesive, and shall comply with the requirements of one of the following: Section 803.1.1, Section 803.5.1 or Section 803.5.2.

803.8 Expanded vinyl ceiling coverings. Where used as interior ceiling finish materials, expanded vinyl ceiling coverings shall be tested in the manner intended for use, using the product mounting system, including adhesive, and shall comply with the requirements of Section 803.1.1 or of Section 803.5.2.

803.9 High-density polyethylene (HDPE) and polypropylene (PP). Where high-density polyethylene or polypropylene is used as an interior finish it shall comply with Section 803.1.1.

803.10 Site-fabricated stretch systems. Where used as interior wall or interior ceiling finish materials, site-fabricated stretch systems containing all three components described in the definition in Chapter 2 shall be tested in the manner intended for use, and shall comply with the requirements of Section 803.1.1 or 803.1.2. If the materials are tested in accordance with ASTM E 84 or UL 723, specimen preparation and mounting shall be in accordance with ASTM E 2573.

803.11 Interior finish requirements based on group. Interior wall and ceiling finish shall have a flame spread index not greater than that specified in Table 803.11 for the group and location designated. Interior wall and ceiling finish materials tested in accordance with NFPA 286 and meeting the acceptance criteria of Section 803.1.1.1, shall be permitted to be used where a Class A classification in accordance with ASTM E 84 or UL 723 is required.

803.12 Stability. Interior finish materials regulated by this chapter shall be applied or otherwise fastened in such a manner that such materials will not

readily become detached where subjected to room temperatures of 200°F (93°C) for not less than 30 minutes.

803.13 Application of interior finish materials to fire resistance-rated or noncombustible building elements.
Where interior finish materials are applied on walls, ceilings or structural elements required to have a fire-resistance rating or to be of noncombustible construction, these finish materials shall comply with the provisions of this section.

803.13.1 Direct attachment and furred construction. Where walls and ceilings are required by any provision in this code to be of fire-resistance-rated or noncombustible construction, the interior finish material shall be applied directly against such construction or to furring strips not exceeding 13/4 inches (44 mm), applied directly against such surfaces.

803.13.1.1 Furred construction. If the interior finish material is applied to furring strips, the intervening spaces between such furring strips shall comply with one of the following:
1. Be filled with material that is inorganic or noncombustible;
2. Be filled with material that meets the requirements of a Class A material in accordance with Section 803.1.1 or 803.1.2; or
3. Be fire-blocked at a maximum of 8 feet (2438 mm) in every direction in accordance with Section 718.

803.13.2 Set-out construction. Where walls and ceilings are required to be of fire-resistance-rated or noncombustible construction and walls are set out or ceilings are dropped distances greater than specified in Section 803.13.1, Class A finish materials, in accordance with Section 803.1.1 or 803.1.2, shall be used.

Exceptions:
1. Where interior finish materials are protected on both sides by an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.
2. Where interior finish materials are attached to noncombustible backing or furring strips installed as specified in Section 803.13.1.1.

803.13.2.1 Hangers and assembly members. The hangers and assembly members of such dropped ceilings that are below the horizontal fire-resistance-rated floor or roof assemblies shall be of noncombustible materials. The construction of each set-out wall and horizontal fire-resistance-rated floor or roof assembly shall be of fire-resistance-rated construction as required elsewhere in this code.

Exception: In Type III and V construction, fire retardant-treated wood shall be permitted for use as hangers and assembly members of dropped ceilings.

803.13.3 Heavy timber construction. Wall and ceiling finishes of all classes as permitted in this chapter that are installed directly against the wood decking or planking of Type IV construction or to wood furring strips applied directly to the wood decking or planking shall be fire-blocked as specified in Section 803.13.1.1.

803.13.4 Materials. An interior wall or ceiling finish material that is not more than 1/4 inch (6.4 mm) thick shall be applied directly onto the wall, ceiling or structural element without the use of furring strips and shall not be suspended away from the building element to which that finish material it is applied.

Exceptions:
1. Noncombustible interior finish materials.
2. Materials that meet the requirements of Class A materials in accordance with Section 803.1.1 or 803.1.2 where the qualifying tests were made with the material furred out from the noncombustible backing shall be permitted to be used with furring strips.
3. Materials that meet the requirements of Class A materials in accordance with Section 803.1.1 or 803.1.2 where the qualifying tests were made with the material suspended away from the noncombustible backing shall be permitted to be used suspended away from the building element.

Cost Impact: Will not increase the cost of construction
This is simply a reorganization without changing requirements.

FS 139-15 : 803.1-HIRSCHLER3573

FS 140-15

406.8.3, 424.2, 804.2, 804.3, Chapter 35

Proponent: Tim Earl, GBH International, representing GBH International (tearl@gbhinternational.com)

2015 International Building Code

Revise as follows:

406.8.3 Floor surface.
Repair garage floors shall be of concrete or similar noncombustible and nonabsorbent materials.

> **Exception:** Slip-resistant, nonabsorbent, *interior floor finishes* having a critical radiant flux not more than 0.45 W/cm^2, as determined by ASTM E648 or NFPA 253, shall be permitted.

424.2 Materials. Children's play structures shall be constructed of noncombustible materials or of combustible materials that comply with the following:

1. *Fire-retardant-treated* wood complying with Section 2303.2.
2. Light-transmitting plastics complying with Section 2606.
3. Foam plastics (including the pipe foam used in softcontained play equipment structures) having a maximum heat-release rate not greater than 100 kilowatts when tested in accordance with UL 1975 or when tested in accordance with NFPA 289, using the 20 kW ignition source.
4. Aluminum composite material (ACM) meeting the requirements of Class A *interior finish* in accordance with Chapter 8 when tested as an assembly in the maximum thickness intended for use.
5. Textiles and films complying with the fire propagation performance criteria contained in Test Method 1 or Test Method 2, as appropriate, of NFPA 701.
6. Plastic materials used to construct rigid components of soft-contained play equipment structures (such as tubes, windows, panels, junction boxes, pipes, slides and decks) exhibiting a peak rate of heat release not exceeding 400 kW/ m^2 when tested in accordance with ASTM E 1354 at an incident heat flux of 50 kW/m^2 in the horizontal orientation at a thickness of 6 mm.
7. Ball pool balls, used in soft-contained play equipment structures, having a maximum heat-release rate not greater than 100 kilowatts when tested in accordance with UL 1975 or when tested in accordance with NFPA 289, using the 20 kW ignition source. The minimum specimen test size shall be 36 inches by 36 inches (914 mm by 914 mm) by an average of 21 inches (533 mm) deep, and the balls shall be held in a box constructed of galvanized steel poultry netting wire mesh.
8. Foam plastics shall be covered by a fabric, coating or film meeting the fire propagation performance criteria contained in Test Method 1 or Test Method 2, as appropriate, of NFPA 701.
9. The floor covering placed under the children's play structure shall exhibit a Class I interior floor finish classification, as described in Section 804, when tested in accordance with ASTM E648 or NFPA 253.

804.2 Classification. *Interior floor finish* and floor covering materials required by Section 804.4.2 to be of Class I or II materials shall be classified in accordance with ASTM E648 or NFPA 253. The classification referred to herein corresponds to the classifications determined by ASTM E648 or NFPA 253 as follows: Class I, 0.45 watts/cm^2 or greater; Class II, 0.22 watts/cm^2 or greater.

804.3 Testing and identification. *Interior floor finish* and floor covering materials shall be tested by an agency in accordance with ASTM E648 or NFPA 253 and identified by a hang tag or other suitable method so as to identify the manufacturer or supplier and style, and shall indicate the *interior floor finish* or floor covering classification in accordance with Section 804.2. Carpet-type floor coverings shall be tested as proposed for use, including underlayment. Test reports confirming the information provided in the manufacturer's product identification shall be furnished to the building official upon request.

Add new standard(s) as follows:
E648-14c Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source

Reason: ASTM E648 is technically equivalent to NFPA 253. Since the flooring industry routinely references ASTM E648, this proposal will remove confusion when people reference the ASTM test instead of the NFPA test.

Cost Impact: Will not increase the cost of construction
This change simply adds a reference to another standard, allowing users to reference either ASTM E648 or NFPA 253, so there is no impact on cost.

Analysis: A review of the standard proposed for inclusion in the code, ASTM E648, 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, 2015.

FS 141-15

901.7

Proponent: Maureen Traxler, City of Seattle, representing Washington Association of Building Officials Technical Code Development Committee (maureen.traxler@seattle.gov)

2015 International Building Code

Revise as follows:

901.7 Fire areas. Where buildings, or portions thereof, are divided into *fire areas* so as not to exceed the limits established for requiring a *fire protection system* in accordance with this chapter, such *fire areas* shall be separated by *fire walls* constructed in accordance with Section 706, *fire barriers* constructed in accordance with Section 707, exterior walls constructed in accordance with Section 705, or *horizontal assemblies* constructed in accordance with Section 711, or ~~both, having a *fire-resistance rating* of not less than that determined in accordance with Section 707.3.10~~combination.

Reason: The definition of "fire area" specifically includes areas "enclosed and bounded by fire walls, fire barriers, exterior walls or horizontal assemblies." Section 901.7 seems to conflict with that by specifying only fire barriers and horizontal assemblies to create fire areas. The reference to the fire-resistance rating of the wall is deleted because the reference to Section 707 includes Table 707.3.10.

Cost Impact: Will not increase the cost of construction
This is an editorial proposal that will not affect the cost of construction.

FS 141-15 : 901.7-TRAXLER3871

FS 142-15

909.20.1

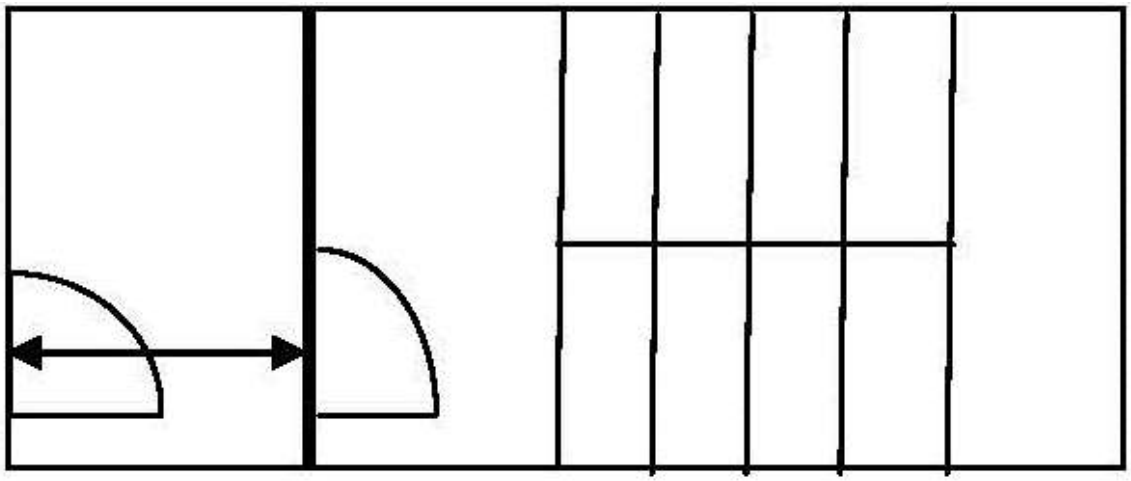
Proponent: Ali Fattah, City of San Diego Development Services Department, representing City of San Diego (afattah@sandiego.gov)

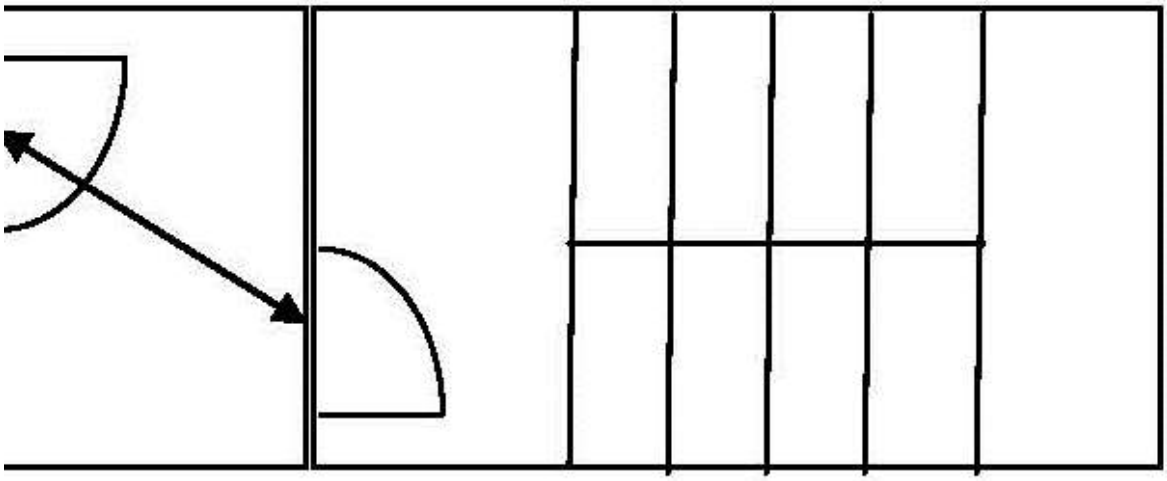
2015 International Building Code

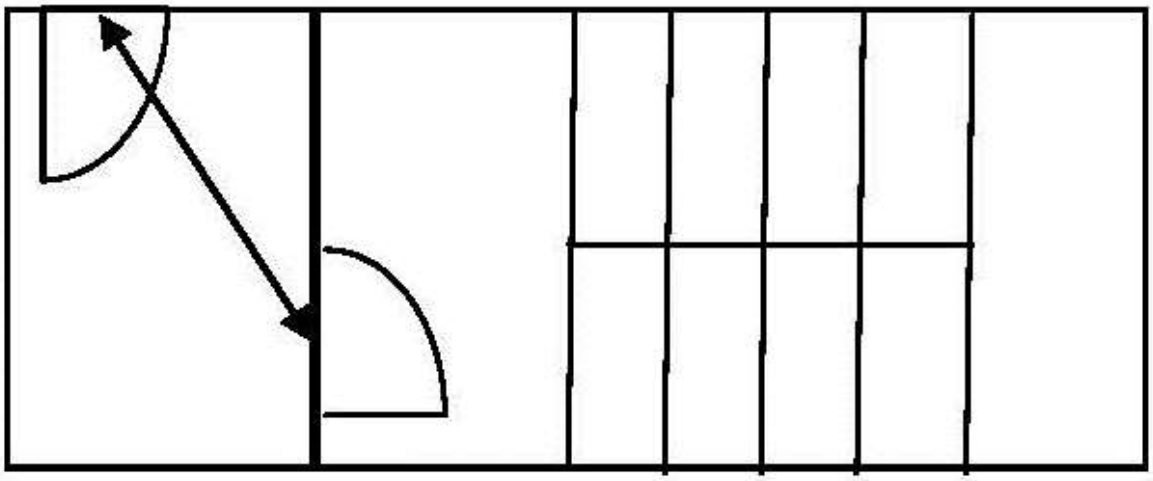
Revise as follows:

909.20.1 Access. Access to the *stairway* or *ramp* shall be by way of a vestibule or an open exterior balcony. The minimum dimension of the vestibule shall be not less than the required width of the *corridor* leading to the vestibule but shall not have a clear width of less than 44 inches (1118 mm) and shall not have a length of less than 72 inches (1829 mm) in the direction of egress travel into the stairway between the centerline of the doorways into the vestibule and stairway.

Reason: The proposed code change seeks to clarify the dimensional requirements in vestibules used to access stairway doors in smoke proof enclosures. A smoke proof enclosure is an interior exit stairway that is protected with a two-hour fire barrier and incudes a vestibule separating the occupied story from the stairway. The vestibule seeks to keep smoke from migrating into the stairway portion due to egress by occupants and due to fire fighting operations. The dimensional requirements for the vestibule seek to allow sufficient distance between the doorway into the vestibule and into the stairway such that both doorways are not open at the same time. Additionally the vestibule provides fire fighters with a safe area to attack a fire on the fire floor without compromising the smoke proof integrity of the stairway. Both the handbook and the commentary conservatively dimension the 72 inch dimension to be perpendicular to the access doorway into the stairway from the vestibule. If the two doorways are not in line, offset or perpendicular to one another the direction of travel into the vestibule, within the vestibule and into the stairway can change and it does not appear reasonable to require 72 inch by 72 inch vestibules if sufficient space is provided to clear the doorways arcs. The code change also requires that the 44 inch width be a clear width for consistency with the requirements in Section 1003.3.3 in the event a standpipe is placed within the vestibule or pressurization ductwork is located within the vestibule.
Please see the atached figures that address possible configurations of vestibules that are addressed by this code change.







Cost Impact: Will not increase the cost of construction
This code change may reduce the size of vestibules thereby increasing useable floor area.

FS 143-15

909.20.5

Proponent: William Webb, representing Self (webbfpc@gmail.com)

2015 International Building Code

Revise as follows:

909.20.5 Stairway and ramp pressurization alternative. Where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, the vestibule is not required, provided each interior *exitstairway* or *ramp* is pressurized to not less than ~~0.10~~0.05 inch of water (~~25~~12.5 Pa) and not more than 0.35 inches of water (87 Pa) in the shaft relative to the building measured with all *interior exitstairway* and *ramp* doors closed under maximum anticipated conditions of stack effect and wind effect.

Reason: This change is consistent with a similar requirement for the pressure differential across smoke barriers. It is also consistent with the NFPA *Life Safety Code, NFPA 101* for smokeproof enclosures in sprinkler protected buildings. It is recognized in NFPA 92, *Standard for Smoke Control Systems. The Handbook of Smoke Control Engineering* and the *Principles of Smoke Management* contain tables giving the suggested minimum pressure design difference across a barrier, Table 9.1 and Table 6.12, respectively. The latter text states on page 107, "These values for sprinklered buildings were calculated from the equation for buoyancy of combustion gases (Chapter 5) for a gas temperature of 1700°F (927°C), for a neutral plane located at a height of two-thirds of the ceiling height below the ceiling and with a safety factor of 0.03 in. H_2O (7.5 Pa)."

Bibliography: IBC 2012, ¶ 909.6.1; NFPA Life Safety Code, NFPA 101 2012, ¶7.2.3.9.1; Standard for Smoke Control Systems, NFPA 92-2012 ¶ 4.4.2.1.1 and Table 4.4.2.1.1 Handbook of Smoke Control Engineering; John H. Klote, James A. Milke, Paul G. Turnbull, Ahmed Kashef and Michael J. Ferreira; 2012;Page 223
ManagementPrinciples of Smoke; John H. Klote and James A. Milke; 2002; Pages 107 & 108

Cost Impact: Will not increase the cost of construction
The proposed change should result in no increased cost is because the requirements are less than the code currently, so it will be easier to meet the revised requirements.

FS 144-15

909.21.1

Proponent: William Webb, Rolf Jensen & Associates, Inc., representing Rolf Jensen & Associates, Inc. (wwebb@rjagroup.com)

2015 International Building Code

Revise as follows:

909.21.1 Pressurization requirements.
Elevator hoistways shall be pressurized to maintain a minimum positive pressure of 0.10 inch of water (25 Pa) and a maximum positive pressure of ~~0.25~~0.35 inch of water (~~67~~88 Pa) with respect to adjacent occupied space on all floors. This pressure shall be measured at the midpoint of each hoistway door, with all elevator cars at the floor of recall and all hoistway doors on the floor of recall open and all other hoistway doors closed. The pressure differentials shall be measured between the hoistway and the adjacent elevator landing. The opening and closing of hoistway doors at each level must be demonstrated during this test. The supply air intake shall be from an outside, uncontaminated source located a minimum distance of 20 feet (6096 mm) from any air exhaust system or outlet.

Exceptions:

1. On floors containing only Group R occupancies, the pressure differential is permitted to be measured between the hoistway and a *dwelling unit* or *sleeping unit* .
2. Where an elevator opens into a lobby enclosed in accordance with Section 3007.6 or 3008.6, the pressure differential is permitted to be measured between the hoistway and the space immediately outside the door(s) from the floor to the enclosed lobby.
3. The pressure differential is permitted to be measured relative to the outdoor atmosphere on floors other than the following:
    3.1. The fire floor.
    3.2. The two floors immediately below the fire floor.
    3.3. The floor immediately above the fire floor.
4. The minimum positive pressure of 0.10 inch of water (25 Pa) and a maximum positive pressure of ~~0.25~~0.35 inch of water (~~67~~88 Pa) with respect to occupied floors are not required at the floor of recall with the doors open.
5. Where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, the minimum pressure differential shall be 0.05 inch water (12 Pa).

Reason: There has been no research about the maximum pressure differential for elevator pressurization systems. There is no technical reason to limit the value to 0.25 in water (67 Pa). The suggested value of 0.35 in water (88 Pa) is the recognized maximum for stair pressure systems. It is recognized that the minimum pressure differential across smoke barriers in sprinklered protected buildings is 0.05 inch water (12 Pa), as noted in IBC 909.6.1.

Cost Impact: Will not increase the cost of construction
The proposed change should result in no increased cost is because the requirements are less than the code currently, so it will be easier to meet the revised requirements.

FS 145-15

909.21.3, Chapter 35

Proponent: Tony Crimi, representing International Firestop Council (tcrimi@sympatico.ca)

2015 International Building Code

Revise as follows:

909.21.3 Ducts for system. Any duct system that is part of the pressurization system shall be protected with the same *fire-resistance rating* as required for the elevator shaft enclosure.

Exception: HVAC ducts tested and listed for in accordance with ASTM E2816 with minimum F and T rating of not less than 2 hours, continuously from the air handling appliance or equipment to the air outlet and inlet terminal.

Add new standard(s) as follows:

ASTM E2816-11, Standard Test Methods for Fire Resistive Metallic HVAC Duct Systems

Reason: This proposal permits an additional option for protection of ducts that are part of a pressurization system by using a tested and listed assembly conforming to the new ASTM E2816-11, Standard Test Methods for Fire Resistive Metallic HVAC Duct Systems evaluated for the specific purpose. IBC section 717.2,1 requires that where the installation of a fire damper will interfere with the operation of a required smoke control system in accordance with Section 909, approved alternative protection shall be utilized. Where mechanical systems, including ducts and dampers, serve as part of the smoke control system, the expected performance of these systems in smoke control mode must be addressed in the rational analysis required by Section 909.4.

This principle of protecting HVAC ducts used as part of a smoke control system from the effects of fire exposure is also already contained in section 909.4.4 which requires that the design consider the effects of the heating, ventilating and air-conditioning (HVAC) systems on both smoke and fire transport. This analysis includes the types of smoke control systems to be employed, their methods of operation, and the methods of construction to be utilized. The analysis is required to include, but not be limited to, stack effects, buoyancy effects, wind effects, HVAC design, climate, duration of operation, and the interaction effects of the operation of multiple smoke control systems for all design scenarios. The ASTM test method achieves this by evaluate the ability of a HVAC duct system to resist the spread of fire from one compartment to other compartments separated by a fire resistance rated construction when the HVAC duct system is exposed to fire under various conditions. This test is now also referenced as part of ICC-ES AC179, Acceptance Criteria for Metallic HVAC Duct Enclosure Assemblies. The purpose of these acceptance criteria is to establish requirements for fire protection enclosure systems applied to metallic HVAC ducts, which provides an alternate to required fire-resistance-rated shafts or an alternate to required fire dampers in specific locations. This criteria provides an alternate to shaft enclosures for vertical ducts.

Cost Impact: Will not increase the cost of construction
This proposal may reduce the cost of construction as it provides an alternative to the existing provision, while maintaining a comparable level of safety.

Analysis: A review of the standard proposed for inclusion in the code, ASTM E2816, 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, 2015.

FS 146-15

1403.5

Proponent: Henry Green, National Institute of Building Sciences, representing National Institute of Building Sciences (hgreen@nibs.org)

2015 International Building Code

Revise as follows:

1403.5 Vertical and lateral flame propagation. Exterior walls on buildings of Type I, II, III or IV construction that are greater than 40 feet (12 192 mm) in height above grade plane and contain a combustible *water-resistive barrier* in accordance with Section 1404.2 shall be tested in accordance with and comply with the acceptance criteria of NFPA 285. For the purposes of this section, fenestration products ~~and~~, flashing of fenestration products and water resistive barrier flashing and accessories at other locations, including through-wall flashings, shall not be considered part of the *water-resistive barrier*.

Exceptions:

1. Walls in which the *water-resistive barrier* is the only combustible component and the *exterior wall* has a wall covering of brick, concrete, stone, terra cotta, stucco or steel with minimum thicknesses in accordance with Table 1405.2.
2. Walls in which the *water-resistive barrier* is the only combustible component and the *water-resistive barrier* has a peak heat release rate of less than 150 kW/m^2, a total heat release of less than 20 MJ/m^2 and an effective heat of combustion of less than 18 MJ/kg as determined in accordance with ASTM E 1354 and has a flame spread index of 25 or less and a smoke-developed index of 450 or less as determined in accordance with ASTM E 84 or UL 723. The ASTM E 1354 test shall be conducted on specimens at the thickness intended for use, in the horizontal orientation and at an incident radiant heat flux of 50 kW/m^2.

Reason: This proposal clarifies the intention of the current code that the trigger for requiring NFPA 285 testing is the water-resistive barrier material and not its accessories. It extends to the excepted accessories specifically mentioned to include flashings that are not associated with fenestration.

Cost Impact: Will not increase the cost of construction
This proposal will not increase the cost of construction. The proposal seeks to clarify only, not to alter or increase requirements.

FS 147-15

1403.5

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

2015 International Building Code

Revise as follows:

1403.5 Vertical and lateral flame propagation. Exterior walls on buildings of Type I, II, III or IV construction that are greater than 40 feet (12 192 mm) in height above grade plane and contain a combustible *water-resistive barrier*_ shall be tested in accordance with and comply with the acceptance criteria of NFPA 285. For the purposes of this section, fenestration products and flashing of fenestration products shall not be considered part of the *water-resistive barrier*.

Exceptions:

1. Walls in which the *water-resistive barrier* is the only combustible component and the *exterior wall* has a wall covering of brick, concrete, stone, terra cotta, stucco or steel with minimum thicknesses in accordance with Table 1405.2.
2. Walls in which the *water-resistive barrier* is the only combustible component and the *water-resistive barrier* complies with the following: (a) It has a peak heat release rate of less than 150 kW/m^2, a total heat release of less than 20 MJ/m^2 and an effective heat of combustion of less than 18 MJ/kg as determined in accordance with ASTM ~~E 1354 and has a flame spread index of 25 or less and a smoke-developed index of 450 or less as determined in accordance with ASTM E 84 or UL 723~~E1354. The ASTM ~~E 1354~~E1354 test shall be conducted on specimens at the thickness intended for use, in the horizontal orientation and at an incident radiant heat flux of 50 kW/m^2. (b) It has a flame spread index of 25 or less and a smoke developed index of 450 or less as determined in accordance with ASTM E84 or UL 723, when tested using Type X gypsum board as the substrate.

Reason: Exception 2 was added during the cycle leading to IBC 2015. There has been a lot of concern that insufficient clarification exists as to how to test the water-resistive barriers with ASTM E84, since the substrate used will affect the test results, particularly for this materials. The proposed clarification should make it clear that Type X gypsum board should be used as the substrate.

Cost Impact: Will not increase the cost of construction
This is clarification regarding the testing protocol and will not change the materials involved.

FS 147-15 : 1403.5-HIRSCHLER4297

FS 148-15

1403.5

Proponent: Theresa Weston, DuPont Building Innovations, representing DuPont Building Innovations (theresa.a.weston@usa.dupont.com)

2015 International Building Code

Revise as follows:

1403.5 Vertical and lateral flame propagation. Exterior walls on buildings of Type I, II, III or IV construction that are greater than 40 feet (12 192 mm) in height above grade plane and contain a combustible *water-resistive barrier*_ shall be tested in accordance with and comply with the acceptance criteria of NFPA 285. Water-resistive barrier materials complying with Section 703.5.1 or water-resistive barrier materials applied over a noncombustible structural base in compliance with Section 703.5.2 are noncombustible. For the purposes of this section, fenestration products and flashing of fenestration products shall not be considered part of the *water-resistive barrier*.

Exceptions:

1. Walls in which the *water-resistive barrier* is the only combustible component and the *exterior wall* has a wall covering of brick, concrete, stone, terra cotta, stucco or steel with minimum thicknesses in accordance with Table 1405.2.
2. Walls in which the *water-resistive barrier* is the only combustible component and the *water-resistive barrier* has a peak heat release rate of less than 150 kW/m^2, a total heat release of less than 20 MJ/m^2 and an effective heat of combustion of less than 18 MJ/kg as determined in accordance with ASTM E 1354 and has a flame spread index of 25 or less and a smoke-developed index of 450 or less as determined in accordance with ASTM E 84 or UL 723. The ASTM E 1354 test shall be conducted on specimens at the thickness intended for use, in the horizontal orientation and at an incident radiant heat flux of 50 kW/m^2.

Reason: There is significant industry confusion as whether the combusitbility testing in Sections 703.5.1 and 703.5.2 applies to water-resistive barriers. This proposal provides a pointer to those sections and clarifies the meaning of combusitible and noncombustible.

Cost Impact: Will not increase the cost of construction
This proposal provides clarity only and does not change code requirements.

FS 149-15

Part I:
1403.5, 1407.10.4, 1409.10.4
Part II:
2603.5.5

THIS IS A 2 PART CODE CHANGE. BOTH PARTS WILL BE HEARD BY THE IBC-FIRE SAFETY COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

Proponent: John Woestman, Kellen Company, representing Extruded Polystyrene Foam Association (XPSA) (jwoestman@kellencompany.com)

Part I

2015 International Building Code

Revise as follows:

1403.5 Vertical and lateral flame propagation. Exterior walls on buildings of Type I, II, III or IV construction that are greater than 40 feet (12 192 mm) in height above grade plane and contain a combustible *water-resistive barrier*_ shall be tested in accordance with and comply with the acceptance criteria of NFPA 285. For the purposes of this section, fenestration products and flashing of fenestration products shall not be considered part of the *water-resistive barrier*. The required NFPA 285 fire performance of the exterior wall assembly shall be permitted to be established by any of the following methods or procedures:

1. NFPA 285 fire performance designs documented in an approved source.
2. NFPA 285 fire performance designs certified by an approved agency.
3. Engineering analysis of an exterior wall assembly based on a comparison of building element, component or assemblies designs that are equivalent to the fire exposure and acceptance criteria set forth in NFPA 285.

Exceptions:

1. Walls in which the *water-resistive barrier* is the only combustible component and the *exterior wall* has a wall covering of brick, concrete, stone, terra cotta, stucco or steel with minimum thicknesses in accordance with Table 1405.2.

2. Walls in which the *water-resistive barrier* is the only combustible component and the *water-resistive barrier* has a peak heat release rate of less than 150 kW/m^2, a total heat release of less than 20 MJ/m^2 and an effective heat of combustion of less than 18 MJ/kg as determined in accordance with ASTM E 1354 and has a flame spread index of 25 or less and a smoke-developed index of 450 or less as determined in accordance with ASTM E 84 or UL 723. The ASTM E 1354 test shall be conducted on specimens at the thickness intended for use, in the horizontal orientation and at an incident radiant heat flux of 50 kW/m^2.

1407.10.4 Full-scale tests. The MCM system shall be tested in accordance with, and comply with, the acceptance criteria of NFPA 285. Such testing shall be performed on the MCM system with the MCM in the maximum thickness intended for use. The required NFPA 285 fire performance of the exterior wall assembly shall be permitted to be established by any of the following methods or procedures:

1. NFPA 285 fire performance designs documented in an approved source.
2. NFPA 285 fire performance designs certified by an approved agency.
3. Engineering analysis of an exterior wall assembly based on a comparison of building element, component or assemblies designs that are equivalent to the fire exposure and acceptance criteria set forth in NFPA 285.

1409.10.4 Full-scale tests. The HPL system shall be tested in accordance with, and comply with, the acceptance criteria of NFPA 285. Such testing shall be performed on the HPL system with the HPL in the minimum and maximum thicknesses intended for use. The required NFPA 285 fire performance of the exterior wall assembly shall be permitted to be established by any of the following methods or procedures:

1. NFPA 285 fire performance designs documented in an approved source.
2. NFPA 285 fire performance designs certified by an approved agency.
3. Engineering analysis of an exterior wall assembly based on a comparison of building element, component or assemblies designs that are equivalent to the fire exposure and acceptance criteria set forth in NFPA 285.

Part II

2015 International Building Code

Revise as follows:

2603.5.5 Vertical and lateral fire propagation. The exterior wall assembly shall be tested in accordance with and comply with the acceptance criteria of NFPA 285. The required NFPA 285 fire performance of the exterior wall assembly shall be permitted to be established by any of the following methods or procedures:

1. NFPA 285 fire performance designs documented in an approved source.
2. NFPA 285 fire performance designs certified by an approved agency.
3. Engineering analysis of an exterior wall assembly based on a comparison of building element, component or assemblies designs that are equivalent to the fire exposure and acceptance criteria set forth in NFPA 285.

Exceptions:

1. One-story buildings complying with Section 2603.4.1.4.
2. Wall assemblies where the foam plastic insulation is covered on each face by not less than 1-inch (25 mm) thickness of masonry or concrete and meeting one of the following:
   2.1 There is no airspace between the insulation and the concrete or masonry.
   2.2 The insulation has a flame spread index of not more than 25 as determined in accordance with ASTM E 84 or UL 723 and the maximum airspace between the insulation and the concrete or masonry is not more than 1 inch (25 mm).

Reason: This code change specifies the documentation requirements for NFPA 285 fire performance designs. In a similar manner as Section 703.3, the proposed wording will allow NFPA 285 tests to be documented in an approved source, listed by an approved agency, or engineering judgments and other performance designs to be used in lieu of an actual NFPA 285 test on the specific assembly. This will recognize existing NPFA 285 test reports and third-party listings as well as permit the addition or substitution of materials within an NFPA 285 complying assemblies provided sufficient analytical data (i.e. engineering analysis) is made available to the code official. The code change reflects current practice in the market. This code change proposal delineates sources available for compliance documentation for a wide variety of NFPA 285 tested assemblies.

Cost Impact:

Part I: Will not increase the cost of construction
No cost increase. This proposal identifies options to comply with existing NFPA 285 testing requirements.

Part II: Will not increase the cost of construction
No cost increase. This proposal identifies options to comply with existing NFPA 285 testing requirements.

FS 149-15 : 1403.5-WOESTMAN5559

FS 150-15

1404.2

Proponent: Jay Crandell, ARES Consulting, representing Foam Sheathing Committee of the American Chemistry Council

2015 International Building Code

Revise as follows:

1404.2 Water-resistive barrier. *Water-resistive barrier* material assemblies shall be installed in accordance with the manufacturer's installation instructions using and *approved* installation method tested for water penetration resistance in accordance with one of the following:

1. The *water-resistive barrier* assembly shall be tested as a component of a complete exterior wall envelope system in accordance with Section 1403.2, Exception 2; or
2. The *water-resistive barrier* assembly shall be tested in accordance with Section 1403.2, Exception 2, without exterior wall finish materials using a minimum differential pressure of 2.86 pounds per square foot (psf)(0.136 kN/m^2) and a minimum test exposure duration of 15 minutes.

Exception: Not fewer than one layer of No.15 asphalt felt, complying with ASTM D 226 for Type 1 felt ~~or other *approved* materials,~~ shall be attached to the studs or sheathing, with flashing as described in Section 1405.4, in such a manner as to provide a continuous *water-resistive barrier* behind the *exterior wall* veneer.

Reason: The proposal specifies that water-resistive barriers be installed in accordance with the manufacturer's installation instructions to assist in proper use and enforcement. It also coordinates and unifies WRB assembly water penetration testing requirements. Furthermore, an exception statement continues to prescriptively recognize ASTM D226 Type 1 asphalt felt as a deemed-to-comply solution (i.e., assembly water resistance testing not required).

The concept of this proposal is to use the same test method (ASTM E 331) and adjust test conditions for two optional qualification approaches to account for the presence or absence of an exterior wall finish material over the water-resistive barrier. It is important to be able to test these two ways to appropriate qualify WRB asemblies (1) for use with a specific exterior wall envelope system (including a specific cladding material) or (2) to more generally qualify a WRB assembly for use with multiple exterior wall finish materials by testing the WRB assembly in an unprotected or exposed condition.

The water penetration resistance test criteria proposed for the second condition, where the WRB assembly is unprotected, is consistent with criteria specified in ASTM E 331 (e.g., 2.86 psf and 15 minute duration with no water penetration). This requirement is also consistent with that used in another code referenced standard for water-resistive barrier coatings that are tested in an unprotected condition (refer to Section 1408.4.1.1) for use with EIFS. Thus, the proposal is consistent with two-code referenced standards. It is also reasonably consistent with the performance of asphalt felt when tested in an unprotected condition and, therefore, complies with the equivalency intent of the code as based on testing by three different certified laboratories where performance of 5 to 15 minutes at 2.86 psf was observed for asphalt felt using ASTM E 331.

The need for a uniform and effective water-penetration resistance requirement is documented in the literature (Hall and Hoigard, 2005; Dorin, 2006; Lstiburek, 2012). In particular, Hall and Hoigard (2005) evaluated current code requirements, acceptance criteria, and field experience. They also report comparative test data under installed water exposure conditions, demonstrating that at least some polymeric building wrap materials are capable of performing equivalenty to asphalt-saturated felt materials. The relevant conclusions from the study include:

1. "Current builing code provisions offer no rational means of assessing the equivalency of alternative WRB products to ASTM D-226 type I asphalt-saturated felt..."

2. "The [material only water resistance tests] fail to address several important moisture transport mechanisms that affect the in-service performance of WRBs."

The proposed requirements are consistent with the intent of equivalency between code-recognized materials and methods (e.g., asphalt felt) and other alternative WRB materials and assemblies. Therefore, this proposal will help to ensure acceptable and consistent perormance of various types of alternative WRB materials and assemblies in a non-exclusionary and effective manner.

Bibliography: Dorin, L. (2005). The importance of integrating flashing and the water resistive barrier in the exterior wall systems of residential buildings. *Journal of the ASTM International*, Vol. 3, No. 5, ASTM International, West Conshohocken, PA
Hall, G.D. and Hoigard, K.R., "Water-Resistive Barriers: How do they compare?", *Interface*, November 2005.

Lstiburek, J., "Leaks & Holes", *ASHRAE Journal*, December 2012.

Cost Impact: Will not increase the cost of construction

This code change proposal has no cost impact because it does not change the requirement for any code-recognized water resistive barrier, such as asphalt felt. For WRB materials and assemblies that are not code recognized, but which are tested for assembly water-penetration resistance meeting the performance intent of the code and equivalency to code-recognized materials, there also are no cost impacts because there is no change in requirements. Thus, a variety of code-compliant options are maintained and potential long-term cost impacts to construction of non-compliant materials will be reduced or avoided.

FS 151-15

1404.2

Proponent: Brian Johnson, Forensic Building Science, representing Forensic Building Science

2015 International Building Code

Revise as follows:

1404.2 Water-resistive barrier. ~~Not fewer than one~~One layer of No.15 asphalt felt, free from holes and breaks, complying with ASTM D 226 for Type 1 felt or other *approved* ~~materials,~~ water-resistive barrier shall b~~e attached to the~~ applied over studs or sheathing of all exterior walls. Such felt or material shall be applied horizontally, with the upper layer lapped over the lower layer not less than 2 inches (51 mm). Where joints occur, felt shall be lapped not less than 6 inches (152 mm). The felt or other approved material shall be continuous to the top of walls and terminated at penetrations and in building appendages in a manner to meet the requirements of the exterior wall envelope as described in Section 1403.2 with flashing as described in Section 1405.4, in such a manner as to provide a continuous *water-resistive barrier* behind the *exterior wall* veneer.

Reason: The language between the IRC and IBC do not match for the same material. The laps required in the IRC are generally a match to the laps required by felt manufacturers in their ESRs and a number of synthetic weather-resistive barrier manufacturers (Tyvek, Typar, R-wrap, etc).
The change reduces the burden on building officials by allowing generic (typical, historical, and customary) requirements that match those in the IRC to be enforced here without forcing the building official to find the manufacturer installation details or ESR to verify the minimum dimensions. Not all felts come with manufacturer identification lables or stamps indicating conformity with ASTM D226 Type I. The change also provides a uniform level of weather protection between building and residential codes.

Cost Impact: Will not increase the cost of construction
No cost impact. These requirements formalize current (and best) practice, match the existing requirements in the IRC, and therefore no increase in costs is associated with the (largely editorial, code-correlation) revision.

FS 151-15 : 1404.2-JOHNSON5603

FS 152-15

1403.2, 1404.2, 1404.2.1 (New)

Proponent: Theresa Weston, DuPont Building Innovations, representing DuPont Building Innovatons (theresa.a.weston@usa.dupont.com)

2015 International Building Code

Revise as follows:

1403.2 Weather protection. Exterior walls shall provide the building with a weather-resistant *exterior wallenvelope*. The *exterior wallenvelope* shall include flashing, as described in Section 1405.4. The *exterior wallenvelope* shall be designed and constructed in such a manner as to prevent the accumulation of water within the wall assembly by providing a *water-resistive barrier* behind the exterior veneer, as described in Section 1404.2, and a means for draining water that ~~enters~~intrudes past the ~~assembly~~exterior veneer to the exterior. Protection against condensation in the *exterior wall* assembly shall be provided in accordance with Section 1405.3.

Exceptions:

1. A weather-resistant *exterior wallenvelope* shall not be required over concrete or masonry walls designed in accordance with Chapters 19 and 21, respectively.
2. Compliance with the requirements for a means of drainage, and the requirements of Sections 1404.2 and 1405.4, shall not be required for an *exterior wallenvelope* that has been demonstrated through testing to resist wind-driven rain, including joints, penetrations and intersections with dissimilar materials, in accordance with ASTM E 331 under the following conditions:
    - 2.1. *Exterior wallenvelope* test assemblies shall include at least one opening, one control joint, one wall/eave interface and one wall sill. Tested openings and penetrations shall be representative of the intended end-use configuration.
    - 2.2. *Exterior wallenvelope* test assemblies shall be at least 4 feet by 8 feet (1219 mm by 2438 mm) in size.
    - 2.3. *Exterior wallenvelope* assemblies shall be tested at a minimum differential pressure of 6.24 pounds per square foot (psf) (0.297 kN/m^2).
    - 2.4. *Exterior wallenvelope* assemblies shall be subjected to a minimum test exposure duration of 2 hours.The *exterior wallenvelope* design shall be considered to resist wind-driven rain where the results of testing indicate that water did not penetrate control joints in the *exterior wall* envelope, joints at the perimeter of openings or intersections of terminations with dissimilar materials.
3. Exterior insulation and finish systems (EIFS) complying with Section 1408.4.1.

1404.2 Water-resistive barrier. Not fewer than one layer of No.15 asphalt felt, complying with ASTM D 226 for Type 1 felt or other *approved* materials, ~~shall be attached to the studs or sheathing, with flashing as described in Section 1405.4, in such a manner as to provide a continuous *water-resistive barrier* behind the *exterior wall* veneer.~~

Add new text as follows:

1404.2.1 Installaton The water-resistive barrier, free from holes or breaks other those required by fasteners, shall be attached to the studs or sheathing, and integrated with flashing as described in Section 1405.4, in such a manner to provide a continuous water-resistive barrier behind the exterior wall veneer. The water-resistive barrier shall be continuous to the top of walls and terminated at penetrations and building appendages in a manner to meet the requirements of the exterior wall envelope as described in Section 1403.2.

Reason: This proposal is intended to provide clarity by:
(1) clarifying is Section 1403.2 that the means of drainage is to manage water from weather which intrudes past the exterior surface of the veneer (either through the veneer or at penetration interfaces) rather than all water that asssembly, which might be interpreted to include the need to drain an internal insulation cavity from condensation moisture or a burst pipe.

(2) separating the WRB material requirements from its installation requirements in Section 1404.2. Additional text in this section specifies installation attributes critical to ensuring the continuity of the water-resistive barrier currently required in the code, and provides more consistency with the International Residential Code.

Cost Impact: Will not increase the cost of construction
There are no changes in requirements only clarification of existing code language.

FS 153-15

1404.2

Proponent: Theresa Weston, DuPont Building Innovations, representing DuPont Building Innovatons (theresa.a.weston@usa.dupont.com)

2015 International Building Code

Revise as follows:

1404.2 Water-resistive barrier. Not fewer than one layer of ~~No.15 asphalt felt~~water-resistive barrier, complying with ASTM ~~D 226 for Type 1 felt~~E 2556 or other *approved* materials, shall be attached to the studs or sheathing, with flashing as described in Section 1405.4, in such a manner as to provide a continuous *water-resistive barrier* behind the *exterior wall* veneer.

Reason: The proposal updates the water-resistive barrier reference to the most recent consensus standard. ASTM E2556 includes housewrap materials, building papers and felt, instead of just felt and therefore is more representative of the state of the industry. Furthermore, the current reference standard is scoped for roof systems, while ASTM E2556 was developed and is scoped for wall systems and so, therefore, is more appropriate for this section of the code. ASTM E2556 is currently referenced in Section 2510 for Stucco water-resistive barriers so its adoption in this section would increase consistency within the code. ASTM E2556 is consistent with the current ICC-ES acceptance criteria for water-resistive barriers (AC-38) and therefore should not limit the use of current WRBs.

Cost Impact: Will not increase the cost of construction
The requirements in the referenced standard are consistent with requirements in ICC-ES Acceptance Criteria AC-38, the most broadly used water-resistive barrier qualification criteria, so will not change the water-resistive barriers requirements or costs associated with them.

FS 154-15

202 (New), , 1402.1, 1404.3 (New), 1405.5 (New)

Proponent: Laverne Dalgleish, Building Professionals, representing Air Barrier Association of America

2015 International Building Code

Add new definition as follows:

SECTION 202 DEFINITIONS

AIR BARRIER. Materials assembled and joined together to provide a barrier to air leakage through the buildling envelope. An air barrier may be a single material or a combination of materials.

SECTION 202 DEFINITIONS

CONTINUOUS AIR BARRIER. A combination of materials and assemblies that restrict or prevent the passage of air thorugh the building thermal envelope.

Revise as follows:

1402.1 Definitions. The following terms are defined in Chapter 2:

ADHERED MASONRY VENEER.
AIR BARRIER.
ANCHORED MASONRY VENEER.
BACKING.
CONTINUOUS AIR BARRIER.
EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS).
EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS) WITH DRAINAGE.
EXTERIOR WALL.
EXTERIOR WALL COVERING.
EXTERIOR WALL ENVELOPE.
FENESTRATION.
FIBER-CEMENT SIDING.
HIGH-PRESSURE DECORATIVE EXTERIOR-GRADE COMPACT LAMINATE (HPL).
HIGH-PRESSURE DECORATIVE EXTERIOR-GRADE COMPACT LAMINATE (HPL) SYSTEM.
METAL COMPOSITE MATERIAL (MCM).
METAL COMPOSITE MATERIAL (MCM) SYSTEM.
POLYPROPYLENE SIDING.
PORCELAIN TILE.
VENEER.
VINYL SIDING.
WATER-RESISTIVE BARRIER.

Add new text as follows:

1404.3 Air barriers. Air barrier materials shall comply with Section C402.5.1.2.1 of the *International Energy Conservation Code*. Air barrier assemblies shall comply with Section C402.5.1.2.2 of the *International Energy Conservation Code*.

1405.5 Air barrier installation. A continuous air barrier shall be provided in accordance with Section C402.5.1.1 of the *International Energy Conservation Code*.

Reason: To clarify the need for air-barriers in the construction of building envelope assemblies and coordinate with energy code provisions for air-barriers.

Air barriers should not just be a requirement for energy code compliance from the standpoint of controlling overall building air leakage. Air barriers also play an important role in controlling leakage of warm, moist air into building cavities where it can increase the risk of condensation on cold surfaces within a building envelope assembly. In this requard, air barriers should be considered to be at least as important as vapor retarders as addressed in current Section 1405.3 of the IBC. Thus, it is important to include a reference to air barriers in the IBC to recognize that air barriers are not just an energy code concern and are important to durable construction in the IBC. With the above purpose in mind, this proposal simply coordinates the IBC wall construction requirements with air-barrier requirments already found in the IECC (without any technical change). The definitions are directly from the IECC.

Bibliography: IECC 2015 Published May 30, 2014 Page 325
IECC 2015 Published May 30, 2014 Page 326

Cost Impact: Will increase the cost of construction
If a state has adopted the IECC 2012 or ASHRAE 90.1 2010, then there is no increase cost of construction. If a state has not adopted IECC 2012 or ASHRAE 90.1 2010, then adding a requirment for air barrier will increase the cost of construction by aproximately $4.00 per square foot of area. This cost is offset by reducing both building maintainance and building repair by an even greater amount over the life of the building.

FS 154-15 : 1402.1-DALGLEISH5452

FS 155-15

1404.12.2

Proponent: Matthew Dobson, representing Vinyl Siding Institute (mdobson@vinylsiding.org)

2015 International Building Code

Revise as follows:

1404.12.2 Fire separation distance. ~~The~~
Polypropylene siding shall not be installed on walls with a fire separation distance ~~between a building with polypropylene siding and the adjacent building shall be not~~of less than ~~10~~5 feet (~~3048~~1524 mm).

Exception: Walls perpendicular to the line used to determine the fire separation distance.

Reason: This is a clarification of where the limitation on polypropylene should apply. It should only apply to walls where the product is used and not the whole building. In many cases the product is used on front elevations or areas of high architectural interest. If the product is only used on a few walls only those walls should be counted and regulated by this provision.
Also, the perpendicular wall exception has been added because the exposure hazard being limited here typically will not create a problem as the exposure will not be facing the adjacent building.

Cost Impact: Will not increase the cost of construction
This change has no impact on cost as it simply clarifies where the product can be used relative to fire safety.

FS 156-15

202 (New), 1404.13 (New), Table 1405.2, 1405.15 (New), 1405.15.1 (New), Chapter 35

Proponent: Matthew Dobson, representing Vinyl Siding Institute

2015 International Building Code

Add new text as follows:

SECTION 202 DEFINITIONS

INSULATED VINYL SIDING A vinyl cladding product, with manufacturer-installed foam plastic insulating material as an integral part of the cladding product, having a thermal resistance of not less than R-2.

1404.13 Insulated Vinyl Siding. Insulated vinyl siding shall be certified and labeled as conforming to the requirements of ASTM D 7793 by an approved quality control agency.

TABLE 1405.2
MINIMUM THICKNESS OF WEATHER COVERINGS

COVERING TYPE	MINIMUM THICKNESS (inches)
Insulated Vinyl Siding	0.035 (vinyl siding layer only)

(Portions of table and footnotes not shown remain unchanged)

1405.15 Insulated vinyl siding. Insulated vinyl siding complying with ASTM D7793 shall comply with Section 1405.14.

1405.15.1 Insulated vinyl siding and accessories Insulated vinyl siding and accessories shall be installed in accordance with manufacturer's instructions

Add new standard(s) as follows: ASTM D7793-13 Standard Specification for Insulated Vinyl Siding

Reason: This proposal carries forward changes from the 2015 International Residential Code and 2015 International Energy Conservation Code. Insulated vinyl siding's ASTM standard was developed over the past few years and product is now being certified to this standard. It was not ready for adoption during the last cycle of the International Building Code.
Insulated vinyl siding, which is a form of insulated siding, is included in the 2015 International Energy Conservation Code among the materials that can be used as continuous insulation outside of the building framing to provide the required total wall R-value for buildings in the coldest climate zones.

The foam plastic used with insulated vinyl siding is required to meet the requirements of Chapter 26 of the IBC.

Installation practices, wind, and height limitations are the same for insulated vinyl siding as vinyl siding. Therefore we have referenced the installation section for vinyl siding for this area.

Cost Impact: Will not increase the cost of construction
This change standardizes a cladding and continuous insulation category and will provide additional options.

Analysis: A review of the standard proposed for inclusion in the code, ASTM D7793, 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, 2015.

FS 157-15

Table 1405.2

Proponent: Charles Clark, Jr, Brick Industry Association, representing Brick Industry Association (cclark@bia.org)

2015 International Building Code

Revise as follows:

TABLE 1405.2
MINIMUM THICKNESS OF WEATHER COVERINGS

COVERING TYPE	MINIMUM THICKNESS (inches)
Anchored masonry veneer	2.0~~2.625~~

(Portions of table and footnotes not shown remain unchanged)

Reason: For more than 30 years, the minimum nominal thickness of anchored masonry veneer allowed by the most prevalent residential model code available at the time has been 2 inches. The IRC has allowed a minimum nominal thickness of 2 inches since its inception in the year 2000. All editions of the CABO One and Two Family Dwelling Code in our office library that go back as far as the year 1983 have allowed a minimum nominal thickness of 2 inches. In short, anchored masonry veneer has performed well for thirty years with an allowable minimum nominal dimension of 2 inches on residential structures and should be permitted as the minimum dimension on all structures.

Cost Impact: Will not increase the cost of construction
This change will not result in an increase to the cost of construction. In fact, this change may result in a reduction in the cost of construction as brick shelves in foundations could be slightly smaller, lintels and shelf angles supporting brick could be slightly smaller, and the seismically-induced load of brick veneer would be slightly lower.

FS 158-15

Table 1405.2

Proponent: Jason Thompson, representing National Concrete Masonry Association (jthompson@ncma.org)

2015 International Building Code

Revise as follows:

TABLE 1405.2
MINIMUM THICKNESS OF WEATHER COVERINGS

COVERING TYPE	MINIMUM THICKNESS (inches)
Adhered masonry veneer	
Architectural Cast Stone	0.75
Other	0.25
Anchored masonry veneer	
Stone (natural)	2
Architectural Cast Stone	1.25
Other	2.625
~~Stone (cast artificial, anchored)~~	~~1.5~~
~~Stone (natural)~~	~~2~~

(Portions of table and footnotes not shown remain unchanged)

Reason: Table 1405.2 addresses several types of masonry veneer systems; including both anchored (attached to a backup system using ties or anchors) as well as adhered (bonded to a backup system using mortar or other approved adhesive material). This change proposes to reorganize the minimum veneer thickness requirements in Table 1405.2 to clarify which minimum thickness requirements apply to specific products depending upon whether they are used as an anchored or adhered veneer.
While mostly a reorganization, there are some minor substantive revisions proposed, including:
The term "stone (cast artificial)" is replaced with "architectural cast stone" as this is consistent with industry practices and the terminology used in Chapter 21.
A minimum thickness of 0.75 inches for adhered architectural cast stone products has been added. The default thickness of 0.25 inches for adhered veneer systems is not appropriate for architectural cast stone due to production, transportation, and installation constraints. The minimum thickness of 0.75 inches is consistent with industry practices and recommendations from the Cast Stone Institute.
The minimum thickness of anchored architectural cast stone is reduced slightly from 1.5 inches to 1.25 inches, also consistent with industry practices and recommendations from the Cast Stone Institute. While minor, the changes proposed here bring the requirements of Table 1405.2 in line with referenced standards and industry practice.

Cost Impact: Will not increase the cost of construction
The changes proposed are primarily to clarify the requirements of Table 1405.2 and make them consistent with referenced standards and industry recommendations.

FS 159-15

1405.3

Proponent: Jay Crandell, representing Foam Sheathing Committee of the American Chemistry Council

2015 International Building Code

Revise as follows:

1405.3 Vapor retarders. Vapor retarders as described in Section 1405.3.3 shall be provided in accordance with Sections 1405.3.1 and 1405.3.2~~, or an~~. An approved design using accepted engineering practice for hygrothermal analysis shall be provided for any of the following conditions:

1. Buildings with high indoor moisture generation.
2. Exterior building envelope assemblies that are enclosed when the framing members or insulation materials exceed 19 percent moisture content.
3. Alternative means and methods to Sections 1405.3.1 and 1405.3.2.

Reason: This proposal establishes some basic (but important) conditions of use associated with the intended performance of the moisture vapor control provisions in the code. These concerns are consistently repeated in various studies, ASTM and ASHRAE guides, expert recommendations, and some state and local codes. Experience has shown that when one or more of these factors is "out of control", they are commonly associated with observed moisture problems in buildings or assemblies. Without these use conditions declared, the provisions of the code may be applied to conditions that they were not intended for and there is no means for enforcement to assist in avoiding such cases. Without these limitations specified (or as an alternative meeting the intent of this proposal), the moisture vapor control requirements should be revised to more specifically address variations in vapor retarder requirements with variations in use conditions and climate to avoid inadvertent misapplication.

Cost Impact: Will not increase the cost of construction
These requirements are already required by the intent of the code and are often done as a matter of good construction practice to control risk and reduce construction cost and business cost in the long run. These factors help control intial wall moisture content which also can reduce short term serviceability or "call-back" costs, such as nail pops or bowing walls.

FS 160-15

1405.3.1

Proponent: Maureen Traxler, representing Seattle Dept of Planning & Development (maureen.traxler@seattle.gov)

2015 International Building Code

Revise as follows:

1405.3.1 Class I and II vapor retarders. Class I and II vapor retarders shall not be provided on the interior side of frame walls in Zones 1 and 2. Class I vapor retarders shall not be provided on the interior side of frame walls in Zones 3 and 4 other than Marine 4. Class I or II vapor retarders shall be provided on the interior side of frame walls in Zones 5, 6, 7, 8 and Marine 4. The appropriate zone shall be selected in accordance with Chapter 3 of the *International Energy Conservation Code*.

Exceptions:

1. Basement walls.
2. Below-grade portion of any wall.
3. Construction where moisture or its freezing will not damage the materials.
4. Conditions where Class III vapor retarders are required in Section 1405.3.2.

Reason: This proposal clarifies the vapor retarder requirement for Zone Marine 4. The second sentence of the paragraph forbids Class I vapor retarders on the interior side of walls in Zone 4, but the thrid sentence requires either Class I or II vapor retarder on the interior side in Zone Marine 4. We propose that the prohibition applies to Zone 4 except in Marine areas.

Cost Impact: Will not increase the cost of construction
This proposal will not increase the cost of construction because it is a clarification of existing code language.

FS 160-15 : 1405.3.1-TRAXLER4695

FS 161-15

202 (New), Table 1405.3.2

Proponent: Matthew Dobson, representing Vinyl Siding Institute (mdobson@vinylsiding.org)

2015 International Building Code

Add new definition as follows:

SECTION 202 DEFINITIONS

CONTINUOUS INSULATION Insulating material that is continuous across all structural members without thermal bridges other than fasteners and service openings. It is installed on the interior or exterior or is integral to any opaque surface of the building envelope.

Revise as follows:

TABLE 1405.3.2
CLASS III VAPOR RETARDERS

ZONE	CLASS III VAPOR RETARDERS PERMITTED FOR:[a]
Marine 4	Vented cladding over wood structural panels Vented cladding over fiberboard Vented cladding over gypsum Continuous insulation ~~Insulated sheathing~~ with *R*-value ≥ R2.5 over 2 × 4 wall Continuous Insulation ~~Insulated sheathing~~ with *R*-value ≥ R3.75 over 2 × 6 wall
5	Vented cladding over wood structural panels Vented cladding over fiberboard Vented cladding over gypsum Continuous insulation ~~Insulated sheathing~~ with *R*-value ≥ R5 over 2 × 4 wall Continuous insulation ~~Insulated sheathing~~ with *R*-value ≥ R7.5 over 2 × 6 wall
6	Vented cladding over fiberboard Vented cladding over gypsum Continuous insulation ~~Insulated sheathing~~ with *R*-value ≥ R7.5 over 2 × 4 wall Continuous insulation ~~Insulated sheathing~~ with *R*-value ≥ R11.25 over 2 × 6 wall
7 and 8	Continuous insulation Insulated sheathingwith *R*-value ≥ R10 over 2 × 4 wall Continuous insulation ~~Insulated sheathing~~ with *R*-value ≥ R15 over 2 × 6 wall

For SI: 1 pound per cubic foot = 16 kg/m^3 .

a. Spray foam with a minimum density of 2 lbs/ft^3 applied to the interior cavity side of wood structural panels, fiberboard, insulating sheathing or gypsum is deemed to meet the insulating sheathing requirement where the spray foam *R*-value meets or exceeds the specified insulating sheathing *R*-value.

Reason: This change makes the IBC constent with the term now defined and used in the IECC, continuous insulation.

Cost Impact: Will not increase the cost of construction
This is simply a correlation change.

FS 162-15

202, Table 1405.3.2

Proponent: Mike Fischer, Kellen Company, representing The Center for the Polyurethanes Industry of the American Chemistry Council and Polyisocyanurate Insulation Manufacturers Association (PIMA) (mfischer@kellencompany.com)

2015 International Building Code

Add new definition as follows:

SECTION 202 DEFINITIONS

~~**DEFINITIONS**~~**CONTINUOUS INSULATION (ci)** Insulating material that is continuous across all structural members without thermal bridges other than fasteners and service openings. It is installed on the interior or exterior or is integral to any opaque surface of the building envelope.

Revise as follows:

TABLE 1405.3.2
CLASS III VAPOR RETARDERS

ZONE	CLASS III VAPOR RETARDERS PERMITTED FOR:[a]
Marine 4	Vented cladding over wood structural panels Vented cladding over fiberboard Vented cladding over gypsum Continuous insulation~~Insulated sheathing~~ with *R*-value ≥ R2.5 over 2 × 4 wall Continuous insulation~~Insulated sheathing~~ with *R*-value ≥ R3.75 over 2 × 6 wall
5	Vented cladding over wood structural panels Vented cladding over fiberboard Vented cladding over gypsum Continuous insulation~~Insulated sheathing~~ with *R*-value ≥ R5 over 2 × 4 wall Continuous insulation~~Insulated sheathing~~ with *R*-value ≥ R7.5 over 2 × 6 wall
6	Vented cladding over fiberboard Vented cladding over gypsum Continuous insulation~~Insulated sheathing~~ with *R*-value ≥ R7.5 over 2 × 4 wall Continuous insulation Insulated ~~sheathing~~ with *R*-value ≥ R11.25 over 2 × 6 wall
7 and 8	Continuous insulation~~Insulated sheathing~~ with *R*-value ≥ R10 over 2 × 4 wall Continuous insulation~~Insulated sheathing~~ with *R*-value ≥ R15 over 2 × 6 wall

For SI: 1 pound per cubic foot = 16 kg/m^3 .

a. Spray foam with a maximum permeance of 1.5 perms at the installed thickness,~~minimum density of 2 lbs/ft^3~~ applied to the interior cavity side of wood structural panels, fiberboard, insulating sheathing or gypsum is deemed to meet the continuous insulation ~~insulating sheathing~~ requirement where the spray foam *R*-value meets or exceeds the specified insulating sheathing *R*-value.

Reason: The 2015 International Codes have introduced a new term, continuous insulation, which has replaced the previous term "insulated sheathing"

in the codes. Insulated sheathing generally refers to a rigid board product; the intent of the product is to provide an insulation material that contains limited thermal bridging- particularly at framing members (see definition below). While all insulated sheathing meets the criteria for continuous insulation, not all continuous insulation is a "sheathing" product.
The proposal revises the table to broaden the available product solutions to include all types of continuous insulation in order to meet the intent of the code as it related to the appropriate use of vapor retarders, and adds the definition of continuous insulation from the IRC and IECC.

The proposal further modifies the footnote to remove the density requirement, and replace it with a vapor permeance requirement that more appropriately addresses the intent of the footnote.

These changes are consistent with changes made to the 2015 IRC, Table R702.7.1.

[RE] CONTINUOUS INSULATION (ci). Insulating material that is continuous across all structural members without thermal bridges other than fasteners and service openings. It is installed on the interior or exterior or is integral to any opaque surface of the building envelope.

Cost Impact: Will not increase the cost of construction
The proposal is a clarification of current requirements.

FS 162-15 : T1405.3.2-FISCHER5432

FS 163-15

1405.3.4

Proponent: Matthew Dobson, representing Vinyl Siding Institute (mdobson@vinylsiding.org)

2015 International Building Code

Revise as follows:

1405.3.4 Minimum clear airspaces and vented openings for vented cladding. For the purposes of this section, vented cladding shall include the following minimum clear airspaces:

1. Vinyl, polypropylene, or insulated vinyl lap or horizontal aluminum siding applied over a weather-resistive barrier as specified in this chapter.
2. Brick veneer with a clear airspace as specified in this code.
3. Other *approved* vented claddings.

Reason: This change recognizes the similar characteristics polypropylene siding and insulated vinyl siding have to vinyl siding as vented cladding. Polypropylene siding is very similar to vinyl siding as it has similar profiles and is installed by hanging it on the wall.
Insulated vinyl siding has been studied closely and has shown to have as good if not better performance as a vented cladding like vinyl siding. Here is the link to this study: http://web.ornl.gov/sci/buildings/2012/2010%20B11%20papers/49_Drumheller.pdf.

Bibliography: http://web.ornl.gov/sci/buildings/2012/2010%20B11%20papers/49_Drumheller.pdf

Cost Impact: Will not increase the cost of construction
This a simple recognition of performance, it will not impact cost.

FS 164-15

1405.4, Chapter 35

Proponent: Theresa Weston, DuPont Building Innovations, representing DuPont Building Innovations (theresa.a.weston@usa.dupont.com)

2015 International Building Code

Revise as follows:

1405.4 Flashing. Flashing shall be installed in such a manner so as to prevent moisture from entering the wall or to redirect that moisture to the exterior. Flashing shall be installed at the perimeters of exterior door and window assemblies, penetrations and terminations of *exterior wall* assemblies, *exterior wall* intersections with roofs, chimneys, porches, decks, balconies and similar projections and at built-in gutters and similar locations where moisture could enter the wall. Flashing with projecting flanges shall be installed on both sides and the ends of copings, under sills and continuously above projecting *trim*. When self-adhered membranes are used as flashings, those self-adhered flashings shall comply with AAMA 711.

Add new standard(s) as follows:

AAMA 711-13 Voluntary Specification for Self Adhering Flashing Used for Installation of Exterior Wall Fenestration Products

Reason: Self-adhered membranes are a growing segment of the flashing material market, but no material property or performance requirements for these materials are currently included in the code. AAMA 711 was developed to insure that this type of material meet minimum performance specifications. This proposal incorporates this industry standard by reference into the code, as was previously done in the 2012 International Residential Code. The properties and quality of flashing materials are crucial to successful implementation of the water management in wall systems.

Cost Impact: Will not increase the cost of construction
The proposal does not mandate the use of a specific material, and therefore does not increase code requirements or associated costs.

Analysis: A review of the standard proposed for inclusion in the code, AAMA 711, with regard to the ICC criteria for referenced stanards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2015.

FS 165-15

1405.4, Chapter 35

Proponent: Theresa Weston, DuPont Building Innovations, representing DuPont Building Innovations (theresa.a.weston@usa.dupont.com)

2015 International Building Code

Revise as follows:

1405.4 Flashing. Flashing shall be installed in such a manner so as to prevent moisture from entering the wall or to redirect that moisture to the exterior. Flashing shall be installed at the perimeters of exterior door and window assemblies, penetrations and terminations of *exterior wall* assemblies, *exterior wall* intersections with roofs, chimneys, porches, decks, balconies and similar projections and at built-in gutters and similar locations where moisture could enter the wall. Flashing with projecting flanges shall be installed on both sides and the ends of copings, under sills and continuously above projecting *trim*. When fluid applied membranes are used as flashing, those fluid applied membrane flashings shall comply with AAMA 714.

Add new standard(s) as follows:

AAMA 714-15 Voluntary Specification for Liquid Applied Flashing Used to Create a Water-Resistive Seal around Exterior Wall Openings in Buildings

Reason: Fluid applied membranes are gaining in use in the market, but no material property or performance requirements for these materials are currently included in the code. Industry has developed standard AAMA 714 to insure that this type of material meets minimum performance specificatons. This proposal incorporates AAMA 714 by reference into the code. The properties and quality of flashing materials are crucial to the successful implementation of the water management in building envelopes.

Cost Impact: Will not increase the cost of construction
This proposal does not mandate the use of any material, and therefore does not increase code requirements or have associated costs.

Analysis: A review of the standard proposed for inclusion in the code, AAMA 714, 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, 2015.

FS 166-15

1405.4.2

Proponent: Charles Clark, Jr, representing Masonry Alliance for Codes and Standards (cclark@bia.org)

2015 International Building Code

Revise as follows:

1405.4.2 Masonry. Flashing and weep holes in anchored veneer designed in accordance with Section 1405.6 shall be located ~~in the first course of masonry~~not more than 16 inches (407 mm) above finished ground level above the foundation wall or slab~~, and~~. At other points of support, including structural floors, shelf angles and lintels ~~where anchored veneers are designed~~, flashing and weep holes shall be located in ~~accordance with Section 1405.6.~~the first course of masonry above the support.

Reason: Far too often, flashing and weep holes in anchored masonry veneer are located in the base of the wall such that they end up below the finished grade making them ineffective. This code change removes the text that indicates that they must be installed in the first course above grade at the base of a wall and instead requires that they be installed within a minimum distance above the finished grade. Flashing and weep holes supported on shelf angles or lintels would still be required to be in the first course of masonry located immediately above the support.

Cost Impact: Will not increase the cost of construction
If anything, this should lower the cost of construction as it would alleviate relocation of the grade to ensure that flashing and weep holes are indeed above grade.

FS 166-15 : 1405.4.2-CLARK5529

FS 167-15

1406.3, 2612.5

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

2015 International Building Code

Revise as follows:

1406.3 Balconies and similar projections. Balconies and similar projections of combustible construction other than fire-retardant-treated wood shall be fire-resistance rated where required by Table 601 for floor construction or shall be of Type IV construction in accordance with Section 602.4. The aggregate length of the projections shall not exceed 50 percent of the building's perimeter on each floor.

Exceptions:

1. On buildings of Type I and II construction, three stories or less above *grade plane*, *fire-retardant-treated wood* shall be permitted for balconies, porches, decks and exterior stairways not used as required exits.
2. Untreated wood ~~is~~, and plastic composites that comply with ASTM D7032 and Section 2612, are permitted for pickets and rails or similar guardrail devices that are limited to 42 inches (1067 mm) in height.
3. Balconies and similar projections on buildings of Type III, IV and V construction shall be permitted to be of Type V construction, and shall not be required to have a *fire-resistance rating* where sprinkler protection is extended to these areas.
4. Where sprinkler protection is extended to the balcony areas, the aggregate length of the balcony on each floor shall not be limited.

2612.5 Construction requirements. Plastic composites meeting the requirements of Section 2612 shall be permitted to be used as exterior deck boards, stair treads, handrails and guards ~~in buildings of Type VB~~where combustible construction is permitted.

Reason: In Section 1406.3, plastic composites which comply with ASTM D7032 and Section 2612.3 are required to be tested to ASTM E84 and achieve a flame spread index of not more than 200. While most untreated wood has an ASTM E84 flame spread index below 200, a few species of untreated wood has a FSI of potentially over 200 (Ponderosa Pine, Northern White Pine), and a few species have FSI approaching 200 (Southern Pine, Poplar). Source: http://www.fpl.fs.fed.us/documnts/fplgtr/fplgtr190/chapter_18.pdf. This proposal, in 1406.3, seeks to allow plastic composites meeting the specified criteria to be used in the same applications where untreated wood may be used in balcony construction.
Regarding Section 2612.5: In the IBC, there are several specific exterior applications where combustible construction is allowed, or where noncombustible construction is not required, with buildings of other than Type VB. This proposal seeks to allow plastic composites which comply with the requirements of Section 2612 in those applications. IBC Section 1403.6 Balconies, is one of those applications. IBC 3104.3 Pedestrian walkways, is another.

Cost Impact: Will not increase the cost of construction
No mandatory cost increase. This proposal would allow additional materials (plastic composites) to be used in several specific applications. It may be noted plastic composites generally cost more than wood but the use of plastic composites is at the discretion of the building owner.

FS 167-15 : 1406.3-WOESTMAN5573

FS 168-15

1409.2

Proponent: Jesse Beitel, representing Trespa NA (jbeitel@haifire.com)

2015 International Building Code

Revise as follows:

1409.2 Exterior wall finish. HPL used as exterior wall covering or as elements of balconies and similar projections and bay and oriel windows to provide cladding or weather resistance shall comply with Sections 1409.4 ~~and~~ through 1409.14.

Reason: This code proposal is a correction to the original proposal. When the Section for High Pressure Laminates was added to the IBC via FS164-09/10, there was an error in the submitted proposal. In the reason statement, it was stated that FS164 was to add language for HPL the paralled Section 1407. Section 1407.2 reads "....shall comply with Sections 1407.4 through 1407.14." The error that occurred in Section 1409.2 was ".....shall comply with Sections 1407.4 and 1407.14." In both the 2012 and the 2015 Codes the "and" is used versus the "through" which was the original intent. The use of the "and" eliminates fire testing, etc. that are needed for the application of the HPLs.
Currently HPL manufacturers do use the "through" intent to evaluate their products.

Cost Impact: Will not increase the cost of construction
The manufacturers of the HPLs currently test as if the "through" was in the code.

FS 168-15 : 1409.2-BEITEL5352

FS 169-15

2603.3

Proponent: Mike Fischer, Kellen Company, representing The Center for the Polyurethanes (mfischer@kellencompany.com)

2015 International Building Code

Revise as follows:

2603.3 Surface-burning characteristics. Unless otherwise indicated in this section, foam plastic insulation and foam plastic cores of manufactured assemblies shall have a flame spread index of not more than 75 and a smoke-developed index of not more than 450 where tested in the maximum thickness intended for use in accordance with ASTM E 84 or UL 723. Loose fill-type foam plastic insulation shall be tested as board stock for the flame spread and smoke-developed indexes.

Exceptions:

1. Smoke-developed index for interior *trim* as provided for in Section 2604.2.
2. In cold storage buildings, ice plants, food plants, food processing rooms and similar areas, foam plastic insulation where tested in a thickness of 4 inches (102 mm) shall be permitted in a thickness up to 10 inches (254 mm) where the building is equipped throughout with an automatic fire sprinkler system in accordance with Section 903.3.1.1. The approved *automatic sprinkler system* shall be provided in both the room and that part of the building in which the room is located.
3. Foam plastic insulation that is a part of a Class A, B or C roof-covering assembly provided the assembly with the foam plastic insulation satisfactorily passes NFPA 276 or UL 1256. The smoke-developed index shall not be limited for roof applications.
4. Foam plastic insulation greater than 4 inches (102 mm) in thickness shall have a maximum flame spread index of 75 and a smoke-developed index of 450 where tested at a minimum thickness of 4 inches (102 mm), provided the end use is approved in accordance with Section 2603.9 using the maximum thickness and density intended for use.
5. Flame spread and smoke-developed indexes for foam plastic interior signs in *covered and open mall buildings* provided the signs comply with Section 402.6.4.

Reason: This change is a clarification only; it provides consistency with the IRC and clarifies that testing at a maximum thickness is appropriately applied to installations of thicknesses at or less than the tested specimen.

Cost Impact: Will not increase the cost of construction
The change is a clarification only; it does not add in new requirements.

FS 169-15 : 2603.3-FISCHER5446

FS 170-15

2603.3

Proponent: Samir Mokashi (samir.mokashi@codeul.com); Avery Lindeman, Green Science Policy Institute, representing Green Science Policy Institute (avery@greensciencepolicy.org); Veena Singla, Natural Resources Defense Council, representing Natural Resources Defense Council (vsingla@nrdc.org); Bruce Hammond, Hammond & Company Inc., representing Hammond & Company, Inc. (bruce@hammondandcompany.com); Tom Lent, Healthy Building Network, representing Healthy Building Network (tlent@healthybuilding.net); Nancy Hulsey, HKS, Inc. , representing HKS, Inc. (nhulsey@hksinc.com); Joshua Klyber (JoshuaKlyber@gmail.com); Vytenis Babrauskas, Fire Science & Technology Inc., representing Fire Science & Technology Inc.; Robin Guenther, representing Perkins+Will (robin.guenther@perkinswill.com); David Eisenberg, Development Center for Appropriate Technology, representing Development Center for Appropriate Technology (strawnet@gmail.com); Marjorie Smith, Siegel & Strain Architects, representing Siegel & Strain Architects (Msmith@siegelstrain.com); Stacia Miller, International Living Future Institute, representing International Living Future Institute (stacia.miller@living-future.org); Clark Brockman, SERA Architects, Inc., representing SERA Architects, Inc. (clarkb@serapdx.com); Larry Strain, representing Siegel & Strain Architects (lstrain@siegelstrain.com); Russ Pitkin, SERA Architects, Inc., representing SERA Architects, Inc; Kathy Gerwig, Kaiser Permanente (kathy.gerwig@kp.org); Tony Stefani, representing San Francisco Firefighters Cancer Prevention Foundation; Dennis Murphy, USGBC California, representing USGBC California (dennis@usgbc-california.org); Martin Hammer, representing Martin Hammer, Architect (mfhammer@pacbell.net)

2015 International Building Code

Revise as follows:

2603.3 Surface-burning characteristics. Unless otherwise indicated in this section, foam plastic insulation and foam plastic cores of manufactured assemblies shall have a flame spread index of not more than 75 and a smoke-developed index of not more than 450 where tested in the maximum thickness intended for use in accordance with ASTM E 84 or UL 723. Loose fill-type foam plastic insulation shall be tested as board stock for the flame spread and smoke-developed indexes.

Exceptions:

1. Smoke-developed index for interior *trim* as provided for in Section 2604.2.
2. In cold storage buildings, ice plants, food plants, food processing rooms and similar areas, foam plastic insulation where tested in a thickness of 4 inches (102 mm) shall be permitted in a thickness up to 10 inches (254 mm) where the building is equipped throughout with an automatic fire sprinkler system in accordance with Section 903.3.1.1. The approved *automatic sprinkler system* shall be provided in both the room and that part of the building in which the room is located.
3. Foam plastic insulation that is a part of a Class A, B or C roof-covering assembly provided the assembly with the foam plastic insulation satisfactorily passes NFPA 276 or UL 1256. The smoke-developed index shall not be limited for roof applications.
4. Foam plastic insulation greater than 4 inches (102 mm) in thickness shall have a maximum flame spread index of 75 and a smoke-developed index of 450 where tested at a minimum thickness of 4 inches (102 mm), provided the end use is approved in accordance with Section 2603.9 using the thickness and density intended for use.
5. Flame spread and smoke-developed indexes for foam plastic interior signs in *covered and open mall buildings* provided the signs comply with Section 402.6.4.
6. Foam plastic insulation located between a concrete slab on grade and its subgrade. Such insulation shall also be exempt from the limiting oxygen index (LOI) requirements of ASTM C578.

Reason: This proposal exempts foam plastic insulation used between a concrete slab on grade and its subgrade from the flame spread index (FSI) and smoke-developed index (SDI) requirements of Section 2603.3 and from the limiting oxygen index (LOI) criteria of ASTM C578. This will maintain building fire safety while reducing the health and environmental impacts of toxic or potentially toxic flame retardant chemicals, and it will increase consumer choice.

Ignition and propagation of fire requires three elements: fuel, an ignition source, and oxygen. The proposed exemption from FSI, SDI, and LOI requirements applies only to foam plastic insulation protected between a concrete slab on grade and its subgrade, where there is no significant exposure to ignition sources or oxygen. Since the foam plastic insulation will not burn under these conditions, the provisions of Section 2603.3, which limit the surface burning characteristics (FSI and SDI) of foam plastic insulation, are not relevant and provide no fire safety benefit. Similarly, there is no fire safety benefit from meeting the limiting oxygen index (LOI) criteria in ASTM C578. FSI, SDI, and LOI requirements are unnecessary for below-grade uses of foam plastic insulation, where the elements required for a fire do not exist. However, the flame retardants used in foam plastic insulation to meet these requirements pose a significant hazard to human health and ecosystems.

The proposed change does not require additional protection at slab joints or penetrations beyond those required by other applicable code provisions. At these locations it is highly unlikely that foam plastic insulation will be exposed to an ignition source, and if a portion of the insulation were somehow exposed, there would not be sufficient oxygen to propagate fire. Other slab-on-grade insulation that is not substantially covered by the slab, such as insulation between a slab edge and a foundation wall, is not covered by the proposed exception, and must comply with Section 2603.3 as well as Section 2603.4 (thermal barriers).

Satisfying the FSI, SDI, and LOI criteria typically requires the addition of flame retardants to foam plastic insulation. During manufacture and installation, workers are likely to be exposed to these flame retardants, which have been associated with neurological and reproductive impairments, hormonal and immune problems, and cancer. These flame retardants are released into the environment during manufacture, demolition, and disposal, and they will eventually migrate out of landfills and other repositories. When thermally processed or burned (for instance, in an incinerator or a landfill), insulation containing halogenated flame retardants can generate highly persistent and toxic halogenated dioxins and furans and other toxic combustion byproducts. Exposure to these dioxins and furans has been associated with cancer and other human health and ecological harm.

HBCD (hexabromocyclododecane) is the flame retardant used most commonly in polystyrene insulation, a typical variety of foam plastic insulation used below-grade. In 2013 under the Stockholm Convention, over 150 countries agreed to eliminate HBCD from the global marketplace due to its persistence and toxicity. The chemical alternatives to HBCD are also highly persistent halogenated flame retardants and are expected to have some comparable adverse human health and ecological impacts. Reducing the unnecessary use of harmful flame retardants will reduce exposure and harm to construction workers, emergency responders, the general public, and ecosystems.

The proposed change does not prohibit the use of flame retardants in foam plastic insulation. Instead, it describes conditions under which foam plastic insulation without added flame retardants can be used safely in buildings.

It is envisioned that insulation without flame retardants for use as described in this proposed exception would require labeling that complies with Section 2603.2. This labeling would be the responsibility of the insulation manufacturer, in the same way that it is currently the manufacturer's responsibility to properly label foam plastic insulation for the end uses described in Exceptions 1 through 5 of Section 2603.3.

This code change will maintain fire safety, reduce the adverse health and environmental impacts of toxic flame retardants used in foam plastic insulation, and expand consumer choice.

Cost Impact: Will not increase the cost of construction
The proposed code change will not require any action that increases construction costs since it does not mandate any change from current practice. Utilizing the proposed code change would not require any alteration to design or construction practices. The proposed change would enable voluntary manufacture and use of alternative foam plastic insulation products that do not contain flame retardant chemicals. The cost of using these alternative insulation products may be higher, lower, or the same as the cost of using currently available insulation depending on formulation costs, production volumes, consumer demand, and level of competition.

FS 170-15 : 2603.3-LINDEMAN3804

FS 171-15

2603.3

Proponent: Samir Mokashi (samir.mokashi@codeul.com); Avery Lindeman, Green Science Policy Institute, representing Green Science Policy Institute (avery@greensciencepolicy.org); Veena Singla, Natural Resources Defense Council, representing Natural Resources Defense Council (vsingla@nrdc.org); Vytenis Babrauskas, Fire Science & Technology Inc., representing Fire Science & Technology Inc.; Tom Lent, Healthy Building Network, representing Healthy Building Network (tlent@healthybuilding.net); Tony Stefani, representing San Francisco Firefighters Cancer Prevention Foundation (stefanit@sbcglobal.net); Bruce Hammond, Hammond & Company Inc., representing Hammond & Company Inc. (bruce@hammondandcompany.com); Nancy Hulsey, HKS, Inc., representing HKS, Inc. (nhulsey@hksinc.com); Joshua Klyber (JoshuaKlyber@gmail.com); Robin Guenther, representing Perkins+Will (robin.guenther@perkinswill.com); David Eisenberg, Development Center for Appropriate Technology, representing Development Center for Appropriate Technology (strawnet@gmail.com); Marjorie Smith, Siegel & Strain Architects, representing Siegel & Strain Architects (Msmith@siegelstrain.com); Stacia Miller, International Living Future Institute, representing International Living Future Institute (stacia.miller@living-future.org); Clark Brockman, SERA Architects, Inc., representing SERA Architects, Inc. (clarkb@serapdx.com); Larry Strain, representing Siegel& Strain Architects (lstrain@siegelstrain.com); Russ Pitkin, SERA Architects, Inc., representing SERA Architects, Inc.; Kathy Gerwig, representing Kaiser Permanente; Dennis Murphy, USGBC California, representing USGBC California (dennis@usgbc-california.org); Martin Hammer, representing Martin Hammer, Architect (mfhammer@pacbell.net)

2015 International Building Code

Revise as follows:

2603.3 Surface-burning characteristics. Unless otherwise indicated in this section, foam plastic insulation and foam plastic cores of manufactured assemblies shall have a flame spread index of not more than 75 and a smoke-developed index of not more than 450 where tested in the maximum thickness intended for use in accordance with ASTM E 84 or UL 723. Loose fill-type foam plastic insulation shall be tested as board stock for the flame spread and smoke-developed indexes.

Exceptions:

1. Smoke-developed index for interior *trim* as provided for in Section 2604.2.
2. In cold storage buildings, ice plants, food plants, food processing rooms and similar areas, foam plastic insulation where tested in a thickness of 4 inches (102 mm) shall be permitted in a thickness up to 10 inches (254 mm) where the building is equipped throughout with an automatic fire sprinkler system in accordance with Section 903.3.1.1. The approved *automatic sprinkler system* shall be provided in both the room and that part of the building in which the room is located.
3. Foam plastic insulation that is a part of a Class A, B or C roof-covering assembly provided the assembly with the foam plastic insulation satisfactorily passes NFPA 276 or UL 1256. The smoke-developed index shall not be limited for roof applications.
4. Foam plastic insulation greater than 4 inches (102 mm) in thickness shall have a maximum flame spread index of 75 and a smoke-developed index of 450 where tested at a minimum thickness of 4 inches (102 mm), provided the end use is approved in accordance with Section 2603.9 using the thickness and density intended for use.
5. Flame spread and smoke-developed indexes for foam plastic interior signs in *covered and open mall buildings* provided the signs comply with Section 402.6.4.
6. Foam plastic insulation located a minimum of 6 inches (152 mm) below finished grade and separated from building interiors by a masonry or concrete wall or foundation. Such insulation shall also be exempt from the limiting oxygen index (LOI) requirements of ASTM C578.

Reason: This proposal exempts foam plastic insulation used below grade and separated from the building interior from the flame spread index (FSI) and smoke-developed index (SDI) requirements of Section 2603.3 and from the limiting oxygen index (LOI) criteria of ASTM C578. This will maintain building fire safety while reducing the health and environmental impacts of toxic or potentially toxic flame retardant chemicals, and it will increase consumer choice.

Ignition and propagation of fire requires three elements: fuel, an ignition source, and oxygen. The proposed exemption from FSI, SDI, and LOI requirements applies only to foam plastic insulation that is at least 6 inches below finish grade, where there is no significant exposure to ignition sources or oxygen. Since the foam plastic insulation will not burn under these conditions, the provisions of Section 2603.3, that limit surface burning characteristics (FSI and SDI) of foam plastic insulation, are not relevant and provide no fire safety benefit. Similarly, there is no fire safety benefit from meeting the limiting oxygen index (LOI) criteria in ASTM C578. FSI, SDI, and LOI requirements are unnecessary for below-grade uses of foam plastic insulation, where the elements required for a fire do not exist. However, the flame retardants used in foam plastic insulation to meet these requirements pose a significant hazard to human health and ecosystems.

The proposed change does not require additional protection at below-grade wall penetrations beyond those required by other applicable code provisions. At these locations it is highly unlikely that foam plastic insulation on the exterior side of the wall will be exposed to an ignition source, and if a portion of the insulation were somehow exposed, there would not be sufficient oxygen to propagate fire.

Satisfying the FSI, SDI, and LOI criteria typically requires the addition of flame retardants to foam plastic insulation. During manufacture and installation, workers are likely to be exposed to these flame retardants, which have been associated with neurological and reproductive impairments, hormonal and immune problems, and cancer. These flame retardants are released into the environment during manufacture, demolition, and disposal, and they will eventually migrate out of landfills and other repositories. When thermally processed or burned (for instance, in an incinerator or a landfill), insulation containing halogenated flame retardants can generate highly persistent and toxic halogenated dioxins and furans and other toxic combustion byproducts. Exposure to these dioxins and furans has been associated with cancer and other human health and ecological harm.

HBCD (hexabromocyclododecane) is the flame retardant used most commonly in polystyrene insulation, a typical variety of foam plastic insulation used below-grade. In 2013 under the Stockholm Convention, over 150 countries agreed to eliminate HBCD from the global marketplace due to its persistence and toxicity. The chemical alternatives to HBCD are also highly persistent halogenated flame retardants and are expected to have some comparable adverse health and ecological impacts. Reducing the unnecessary use of harmful flame retardants will reduce exposure and harm to construction workers, emergency responders, the general public, and ecosystems.

The proposed change does not prohibit the use of flame retardants in foam plastic insulation. Instead, it describes conditions under which foam plastic insulation without flame retardants can be used safely in buildings. This change would include below-grade insulation placed horizontally for frost-protected shallow foundations per Section 1809.5(2); such insulation must also comply with the insulation protection requirements of this section and the referenced standard ASCE 32.

It is envisioned that insulation without flame retardants for use as described in this proposed exception would require labeling that complies with Section 2603.2. This labeling would be the responsibility of the insulation manufacturer, in the same way that it is currently the manufacturer's responsibility to properly label foam plastic insulation for the end uses described in Exceptions 1 through 5 of Section 2603.3.

This code change will maintain fire safety, reduce the adverse health and environmental impacts of toxic flame retardants used in foam plastic insulation, and expand consumer choice.

Cost Impact: Will not increase the cost of construction
The proposed code change will not require any action that increases construction costs since it does not mandate any change from current practice. Utilizing the proposed code change would not require any alteration to design or construction practices. The proposed change would enable voluntary manufacture and use of alternative foam plastic insulation products that do not contain flame retardant chemicals. The cost of using these alternative insulation products may be higher, lower, or the same as the cost of using currently available insulation depending on formulation costs, production volumes, consumer demand, and level of competition.

FS 171-15 : 2603.3-LINDEMAN3805

FS 172-15

2603.4

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

2015 International Building Code

Revise as follows:

2603.4 Thermal barrier. Except as provided for in Sections 2603.4.1 and 2603.9, foam plastic shall be separated from the interior of a building by an approved thermal barrier of $^{1}/_{2}$-inch (12.7 mm) gypsum wallboard, heavy timber in accordance with Section 602.4, or a material that is tested in accordance with and meets the acceptance criteria of both the Temperature Transmission Fire Test and the Integrity Fire Test of NFPA 275. Combustible concealed spaces shall comply with Section 718.

Reason: Thermal barriers are materials that comply with NFPA 275. In order to comply with NFPA 275 thermal barrier materials (in combination with the foam plastic insulation they are supposed to protect) are supposed to resist flashover after exposure to a room-corner test (using a test specimen that covers 3 walls and the ceiling of an 8 ft. by 12 ft. by 8 ft. room) such as NFPA 286, as well as comply with a number of other requirements (peak heat release rate of no more than 800 kW, flames that don't reach the extremities of the test specimen, total smoke release of no more than 1,000 m^2). As an alternative to testing to NFPA 286 the thermal barriers are allowed to be tested to FM 4880, UL 1040 or UL 1715, all severe large scale tests.

Beyond the test just mentioned, thermal barriers must also be able to pass a fire resistance test using a time-temperature curve like the one in ASTM E119 for 15 minutes.

It is clear (and fire test data have shown this) that thin wood panel materials will not comply with these requirements, because if a thin wood panel, covering a foam plastic insulation material, is exposed to the fire source in NFPA 286, it will reach flashover well before the end of the 15 minute test period.

Discussions held during the IRC hearings for the 2015 edition addressed the interest by some proponents that a wood material be permitted to be used as a thermal barrier without testing. Therefore, this proposal suggests that heavy timber is a wood material that could safely be used as a thermal barrier, while thin wood panels are not appropriate thermal barriers.

Cost Impact: Will not increase the cost of construction
This provides an alternate option for use as a thermal barrier and does not mandate any material.

FS 172-15 : 2603.4-HIRSCHLER4580

FS 173-15

2603.5.5

Proponent: John Woestman, Kellen Company, representing Extruded Polystyrene Foam Association (XPSA) (jwoestman@kellencompany.com)

2015 International Building Code

Revise as follows:

2603.5.5 Vertical and lateral fire propagation. The exterior wall assembly shall be tested in accordance with and comply with the acceptance criteria of NFPA 285 and the foam plastic insulation shall comply with the provisions of Section 2603.5.4.

Exceptions:

1. One-story buildings complying with Section 2603.4.1.4.
2. Wall assemblies where the foam plastic insulation is covered on each face by not less than 1-inch (25 mm) thickness of masonry or concrete and meeting one of the following:
    2.1. There is no airspace between the insulation and the concrete or masonry.
    2.2. The insulation has a flame spread index of not more than 25 as determined in accordance with ASTM E 84 or UL 723 and the maximum airspace between the insulation and the concrete or masonry is not more than 1 inch (25 mm).

Reason: This proposed code change clarifies the existing dual requirement of a satisfactory NFPA 285 test in Section 2603.5.5 and an ASTM E 84 / UL 723 test in Section 2603.5.4. This proposal does not add any additional test requirements to the code. There is currently a misunderstanding in the market that a foam plastic insulation material which would not meet the ASTM E84 Class A performance requirements is allowed by the code to be used in an assembly which has passed the NFPA 285 assembly fire test. This proposal clarifies the applicability of the code provisions of 2603.5.4, by requiring a Class A material in an NFPA 285 assembly.

Cost Impact: Will not increase the cost of construction
No cost increase. Proposed change reinforces current code requirement.

FS 174-15

2603.5.5

Proponent: Henry Green, National Institute of Building Sciences, representing National Institute of Building Sciences (hgreen@nibs.org)

2015 International Building Code

Revise as follows:

2603.5.5 Vertical and lateral fire propagation. The exterior wall assembly shall be tested in accordance with and comply with the acceptance criteria of NFPA 285.

Exceptions:

1. One-story buildings complying with Section 2603.4.1.4.
2. Wall assemblies where the foam plastic insulation is covered on each face by not less than 1-inch (25 mm) thickness of masonry or concrete and meeting one of the following:
    2.1. There is no airspace between the insulation and the concrete or masonry.
    2.2. The insulation has a flame spread index of not more than 25 as determined in accordance with ASTM E 84 or UL 723 and the maximum airspace between the insulation and the concrete or masonry is not more than 1 inch (25 mm).

3. In other than *high rise building*, buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1

Reason: Currently, Section 2603.5 requires all foam plastic exterior insulation materials to conform to the limits of NFPA 285. This test replicates the response of materials to a fire extending through an exterior window of a building. The code does not differentiate as to whether there is a potential for such a fire to occur in a building. Flashover fires that would cause the flame to break out of the building will not occur in a building that has a fully operational sprinkler system.

Cost Impact: Will not increase the cost of construction
This proposal would establish an exception to the testing requirement thus reducing the cost of construction for buildings that fall under the exception. It will have no impact on buildings not subject to the exception.

FS 175-15

2603.5.8 (New)

Proponent: Mike Fischer, Kellen Company, representing the Center for the Polyurethanes Industry of the American Chemistry Council (mfischer@kellencompany.com)

2015 International Building Code

Add new text as follows:

2603.5.8 Concealed spaces. Concealed spaces of exterior walls and exterior wall coverings shall comply with Section 718.

Reason: This proposal seeks to provide language referencing the Section 718 fireblocking requirements for concealed spaces of exterior walls and exterior wall coverings.

Cost Impact: Will not increase the cost of construction
The proposal is a clarification and adds no new requirements.

FS 176-15

2603.6 (New)

Proponent: Anthony Apfelbeck, City of Altamonte Building/Fire Safety, representing City of Altamonte Springs (ACApfelbeck@altamonte.org)

2015 International Building Code

Add new text as follows:

2603.6 Exterior Walls Foam plastic in thicknesses of ½ inch (12.7 mm) or greater on exterior walls shall be separated from the exterior of a building by an approved thermal barrier consisting of one of the following:

1. Minimum 1/2-inch (12.7 mm) gypsum wallboard.
2. A material that is tested in accordance with and meets the acceptance criteria of both the Temperature Transmission Fire Test and the Integrity Fire Test of NFPA 275.
3. Minimum ½ in. thick exterior wall coverings of:

   Concrete, stone or masonry veneer,
   Fiber cement siding,
   Hardboard siding,
   Particle board,
   Wood siding, or
   Wood structural panel.

Reason: Historically the IBC required foam plastic insulation to be protected from the interior by a thermal barrier, such as ½ in. gypsum wallboard (2603.4). This provided an acceptable level of fire performance from a fire originating within the home. There are no requirements to provide a thermal barrier to protect the insulation from an exterior fire because foam plastic insulation in the wall cavity would typically be protected by a ½ in. OSB attached to the exterior of the wall studs which serves as a shear wall.
Energy efficiency requirements now require exterior walls to include higher R-values, which is often provided by continuous insulation in the form of foam board stock attached on the outside of the shear wall. The only covering provided over the insulation is typically a thin water barrier and exterior siding, such as vinyl siding.

Fire test experiments conducted by UL http://www.youtube.com/watch?v=K8pGUULE3Xc (a compelling seven minute video) compare the fire performance between traditional residential exterior wall constructions with no continuous insulation outside of the exterior ½ in. OSB shear wall, versus two constructions with ½ in. and 1 in. polystyrene foam continuous insulation with vinyl exterior wall covering. When subjected to a small exterior fire, similar to that produced by a gas grill, the two wall constructions with exterior continuous insulation performed badly. In one case the fire extended up the wall and into the attic vents in 1:51 minutes, and in the other case the fire fully involved the exterior wall and the roofing became involved in just over two minutes. In a real life fire, the home would be totally involved before the first responding engine company could be expected to arrive, assuming they were notified when the fire first impinged on the wall.

This proposal requires foam insulation on exterior walls in thickness ½ in. or greater (the same min. thickness in the UL fire experiments) to be protected from the exterior of the building by an approved thermal barrier that complies with Section 2603.4 requirements (items 1 and 2) or min. ½ in. thick exterior wall coverings with comparable thermal transmission properties.

Bibliography: UL Fire Test Demonstration Video:
http://www.youtube.com/watch?v=K8pGUULE3Xc

Cost Impact: Will increase the cost of construction
The proposal is not likely to increase the cost of construction if one of the exterior sidings described in the proposal is used. The cost of construction is likely to increase if a siding not described in the proposal is used, and an additional thermal barrier is required under that siding.

FS 177-15

202 (New), , 2603.6 (New), 2603.6.1 (New), 2603.6.2 (New), 2603.6.3 (New)

Proponent: Mike Fischer, Kellen Company, representing the Center for the Polyurethanes Industry of the American Chemistry Council (mfischer@kellencompany.com)

2015 International Building Code

Add new definition as follows:

SECTION 202 DEFINITIONS

BUILDING ELEMENT. A building assembly used to determine the construction classification that is a primary structural frame, a wall or partition, or a floor or roof assembly and the associated structural members.

SECTION 202 DEFINITIONS

BUILDING ELEMENT, INTERIOR. A building element that is not part of an exterior wall or roof assembly.

SECTION 202 DEFINITIONS

INTERIOR BUILDING ELEMENT. See "Building Element, Interior"

Add new text as follows:

2603.6 Interior building elements. Interior building elements of all Construction Types shall comply with Sections 2603.2 through 2603.4 and Sections 2603.6.1 through 2603.6.3.

2603.6.1 Fire resistant rated constuction Where interior building elements are required to have a fire-resistance rating, substantiation of the fire-resistance rating shall be in accordance with the methods permitted in Section 703.3 or from data based on tests of assemblies consistent with the end-use configuration and conducted in accordance with ASTM E 119 or UL 263.

2603.6.2 Thermal barrier Any foam plastic insulation shall be separated from the building interior by a thermal barrier in accordance with Section 2603.4, unless special approval is obtained on the basis of Section 2603.9.

2603.6.3 Concealed spaces Concealed spaces within interior building elements shall comply with Section 718

Reason: Section 603.1, Exception 3 permits the use of "Foam plastics in accordance with Chapter 26." in Type I and II construction. Chapter 26 addresses foam plastic in Section 2603 Foam Plastic Insulation and Section 2604 Interior finish and trim, however, specific discussion regarding Construction Type is primarily limited to 2603.4.1.13 for installations in sill plates and headers without a prescriptive thermal barrier and in 2603.5 relative to exterior walls. Although one may interpret Section 602.2 and Section 603.1, Exception 3 as allowing the use of foam plastics in all building elements of Type I and II construction, Chapter 26 does not clearly confirm this interpretation.
This proposal provides language to Section 2603 to clarify the acceptable use of foam plastic in all types of construction. The proposed new definitions are intended to clarify the meaning of "interior building element" as used in Section 602 to differentiate exterior walls from interior elements such as interior walls, floors, ceilings and roofs.

Cost Impact: Will not increase the cost of construction
The proposed change clarifies existing requirements of the IBC, therefore, will not increase the cost of construction.

FS 178-15

2603.7, 2603.7.1, 2603.7.2

Proponent: Tony Crimi, representing North American Insulation Manufacturers Association (tcrimi@sympatico.ca)

2015 International Building Code

2603.7 Foam plastic insulation used as interior finish or interior trim in plenums. Foam plastic insulation used as interior wall or ceiling finish or as interior trim in plenums shall exhibit a flame spread index of 75 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E 84 or UL 723 and shall comply with one or more of Sections 2603.7.1, 2603.7.2 and 2607.3.

2603.7.1 Separation required. The foam plastic insulation shall be separated from the plenum by a thermal barrier complying with Section 2603.4 and shall exhibit a flame spread index of 75 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E 84 or UL 723 at the thickness and density intended for use.

Revise as follows:

2603.7.2 Approval. The foam plastic insulation shall exhibit a flame spread index of 25 or less and a smoke-developed index of 50 or less when tested in accordance with ASTM E 84 or UL 723 at the thickness and density intended for use and shall meet the acceptance criteria of Section 803.1.2 when tested in accordance with NFPA 286. ~~The foam plastic insulation shall be approved based on tests conducted in accordance with Section 2603.9.~~

Reason: The last sentence of 2603.7.2 creates a conflict with the remainder of the requirement.
IBC 2603.7 and 2603.7.1 are clear in stating that ASTM E84 or UL 723 are to be used to determine the flame spread index and smoke developed index. This is very typical in the IBC. IBC 2603.7.2 also identifies the required test methods as ASTM E 84 and UL 723, and the required ratings to be derived from those tests, and identifies NFPA 286 and the acceptance criteria in 803.1.2 (which includes smoke measurement) as a requirement.

The problem is then with the last sentence of 2603.7.2 which directs the Code official to "approve" the insulation based on a different set of room fire tests, which do not all provide a flame spread and smoke developed value. It is not clear if this is to be in addition to the flame spread and smoke developed results, or in place of those tests.

Since 2603.9 does not exempt the material from compliance with 2603.7, it appears that both sets of criteria must be met. This is reasonable in that 3 of the 4 large-scale tests identified in 2603.9 do not have limitations on smoke development. Furthermore, based on the language in 2603.9, alternative tests could also be permitted, and what those do or do not measure is not known. However, since compliance with NFPA 286 is already required in 2603.7.2, and NFPA 286 and the acceptance criteria in 803.1.2 are also identified in 2603.9, it appears this sentence is redundant.

Cost Impact: Will not increase the cost of construction
The proposal will potentially eliminate redundant testing to additional standards other than UL 723, ASTM E84, and NFPA 286

FS 179-15

2603.7.4 (New)

Proponent: Tony Crimi, representing North American Insulation Manufacturers Association (tcrimi@sympatico.ca)

2015 International Building Code

Add new text as follows:

2603.7.4 Building panel systems Foam plastic insulation used as part of a factory assembled panel system shall be covered by corrosion-resistant steel having a base metal thickness of not less than 0.0160 inch (0.4 mm). The foamed plastic insulation shall exhibit a flame spread index of 75 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E 84 or UL 723 at the thickness and density intended for use. The manufactured building panel system shall also conform to the flame spread and smoke-developed requirements of Chapter 8 when tested in accordance with ASTM E 84 or UL 723 at the thickness intended for use, unless special approval is obtained on the basis of Section 2603.9. Assemblies tested shall include seams, joints and other typical details used in the installation of the assembly and shall be tested in the manner intended for use.

Reason: This proposal introduces clear language for testing of metal faced foamed plastic core sandwich panels. The proposal clarifies that both the foamed plastic insulation and the foam filled panel systems need to be tested. The requirement to test a joint or seam is included for consistency with current laboratory and Certification practices. This portion of the proposal language is taken directly from IBC section 2603.9. The requirements for the foamed plastic core material are identical to 2603.7.3. However, the requirements for the finished panel system would be as required by Chapter 8, depending upon the use of the product.

The IBC has several references to foamed plastic sandwich panels. Typically, sandwich panels are manufactured products. Many use a covering of corrosion-resistant steel having a base metal thickness of not less than 0.0160 inch (0.4 mm). However, it is not clear whether the current provision in 2603.7.3 applies to factory assembled panels because the ASTM E84/UL 723 testing requirement only expresses limits for the foam insulation core, not for the composite product.

When sandwich wall or ceiling panels are tested, they do not always yield better flame spread and smoke developed values than the base foam insulation core. For example, higher smoke developed indexes This is demonstrated in numerous UL Listings under their CCN "BLBT" for Surface Burning Characteristics of Building Units. Based on this experience, Laboratories like UL evaluate this effect by testing the sample with a longitudinal butt joint, using a factory or field joint (as applicable).

For building units consisting of an interior core material faced on both surfaces, the UL certification of the product already includes the surface-burning characteristics of the core material in addition to the surface-burning characteristics of the finished product.

Cost Impact: Will not increase the cost of construction

The proposal is consistent with the practices of Laboratories such as UL.

FS 180-15

2606.11

Proponent: Mike Fischer, Kellen Company, representing the Plastic Glazing Coalition of the American Chemistry Council (mfischer@kellencompany.com)

2015 International Building Code

Revise as follows:

2606.11 Greenhouses. Light-transmitting plastics shall be permitted in lieu of ~~plain~~ glass in greenhouses.

Reason: The use of the word "plain" glass is not defined. Does plain glass refer to non-tempered? Clear (as in non-coated, or as in non-tinted?) Non-wired? The proposal removes the ambiguous and unnecessary adjective.

Cost Impact: Will not increase the cost of construction
The proposal is editorial only. There is no change in requirements.

FS 180-15 : 2606.11-FISCHER3638

FS 181-15

2609.4

Proponent: David Kulina, representing Engel Architects (david@engelarch.com)

2015 International Building Code

Revise as follows:

2609.4 Area limitations. Roof panels shall be limited in area and the aggregate area of panels shall be limited by a percentage of the floor area of the room or space sheltered in accordance with Table 2609.4.

Exceptions:

1. The area limitations of Table 2609.4 shall be permitted to be increased by 100 percent in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
2. Low-hazard occupancy buildings, such as swimming pool shelters, shall be exempt from the area limitations of Table 2609.4, provided that the buildings do not exceed 5,000 square feet (465 m^2) in area and have a minimum fire separation distance of 10 feet (3048 mm).
3. Greenhouses that are occupied for growing ~~plants on a production~~ or ~~research basis~~maintaining plants, without public access, shall be exempt from the area limitations of Table 2609.4 provided they have a minimum fire separation distance of 4 feet (1220 mm).
4. Roof coverings over terraces and patios in occupancies in Group R-3 shall be exempt from the area limitations of Table 2609.4 and shall be permitted with light-transmitting plastics.

Reason: Light transmitting plastics are necessary in most greenshoues used for plants, irregardless of whether those plants are grown or simply maintained. For example, many retailers have greenhouses not open to the public in which they keep plants until ready for sale. Also, many colleges have greenhouses to hold plants during winter months. Furthermore, current plastics are actually safer than glass in the event of large hail.

Cost Impact: Will not increase the cost of construction
This change will actually decrease the cost of construction by allowing for the use of light transmitting plastics in lieu of glass.

FS 181-15 : 2609.4-KULINA4562

FS 182-15

2611.1, 2611.2, 2611.3, 2611.3 (New), 2611.4

Proponent: Stephen DiGiovanni, Clark County Building Department, representing Southern Nevada Chapter of ICC (sdigiovanni@clarkcountynv.gov)

2015 International Building Code

Revise as follows:

2611.1 General. Light-transmitting plastic interior ~~wall~~ signs shall be limited as specified in Section 2606 and Sections 2611.2 through 2611.4.

Exception: Light-transmitting plastic interior wall signs in *covered and open mall buildings* shall comply with Section 402.6.4~~. Light-transmitting plastic interior signs shall also comply with Section 2606.~~

Delete without substitution:

~~**2611.2 Aggregate area.** The sign shall not exceed 20 percent of the wall area.~~

Revise as follows:

~~**2611.3**~~**2611.2 Maximum area.** The ~~sign~~ aggregate area of all light-transmitting plastics shall not exceed 24 square feet (2.23 m^2).

Exception: In buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, the aggregate area of light-transmitting plastics shall not exceed 100 square feet, provided all plastics are Class CC1 in accordance with Section 2606.4.

Add new text as follows:

2611.3 Separation Signs exceeding the aggregate area of 2611.2 shall be separated from each other by not less than 4 feet horizontally and 8 feet vertically.

Revise as follows:

2611.4 Encasement. ~~Edges~~Backs of wall mounted signs and ~~backs~~non-illuminated portions of ~~the sign~~ all signs regulated by this section shall be fully encased in metal.

Reason: Base code is out of date and creates undue impact on interior signs. These allowances have been incorporated into the Southern Nevada Building Code for several code cycles without incident.

1. The intent of this amendment is to codify an equivalent level of protection to allow larger signs.

2. It makes no sense to only regulate wall mounted signs inside buildings and not pole, and ceiling mounted signs too. Deletion of the reference to "wall" in the first sentence of Section 2611.1 clarifies that Section 2611 applies to all light-transmitting plastic interior signs, including wall-mounted, hanging, and base-supported signs.

3. The original proponent of this section, which is now 2611 of the IBC, intended it to apply to all plastic faced signs, not just wall mounted signs. In addition, the initial development of this requirement did not take into account a CC1 plastic, or fully sprinklered buildings.

4. A minimum CC1 plastic is required to limit the burning characteristics of the light-transmitting material.

5. The way 2611.1 is written, and according to the original proponent of this section, mall signs are only regulated in Section 402.6.4. Moving this stipulation into an exception provides clarification.

6. The original Section 2611.2 has been replaced with reasonable separation distances as described in the following item.

7. The separation requirements stipulated in 2611.2 eliminate the potential for multiple signs, each less than the allowable square footage (24 or 100), creating a single fuel package. The intent is to treat multiple signs in close proximity, or possibly multiple pieces/portions of the same sign, as a single fuel package. These separation distances were gleaned from Table 2607.4. This stipulation can be considered to be more conservative than base code and be used as partial justification for the increased sizes in the exceptions to Section 2611.3.

8. The modification to Section 2611.3 is proposed to eliminate interpretations of what the 24 square feet maximum area applies to. With the proposed modification, the 24 square feet limitation applies to the total area of light-transmitting plastics in the sign, regardless if the sign has a plastic facing on one or more sides. The intent is to treat the sign as a single fuel package regardless of configuration.

9. The size limitation in the Exception to Section 2611.3 was partially based on Sections 2607 and 2608, along with Table 2607.4. Section 2607 does not allow light-transmitting plastic wall panels to be used in Groups A-1 or A-2 occupancies. Item 1 of Section 2608.2 has a basic limitation of 16 square feet with a vertical dimension not exceeding 4 feet for a single panel of light-transmitting plastic glazing. Other restrictions are listed in Section 2608.2, but are exempt in sprinklered buildings. The size allowances in Table 2607.4, along with the sprinkler allowances in Section 2607.5, allow a CC2 light-transmitting plastic wall panel up to a maximum of 200 square feet with the required separation distances to an adjacent panel. Since 2611 requires compliance with 2606, at a minimum, a CC2 plastic would be required. Since 2607 is not applicable to A-1 or A-2 occupancies, it should be reasonable to allow light-transmitting plastic interior signs of Class CC1 with the additional mitigating aspects specified.

10. In addition to the preceding item, partial justification for the size limitations listed have been gleaned from Appendix H. Although the definition of sign in Section H102 appears to only apply to exterior signs, Appendix H can be used for guidance. Section H106 limits approved plastics in internally illuminated signs to 120 square feet. Section H107 appears to apply to externally illuminated plastic faced signs and has a basic limitation of 200 square feet. Therefore, the 120 square foot limitation appears to be the Appendix H reference most applicable to the intent of this amendment. With the

additional separation requirements and protection specified, it seems reasonable to allow the increased area specified.

11. Under the base IBC language, all light-transmitting plastic interior signs are required to have metal on five sides (edges and backs). However, suspended or base supported multi-faced light-transmitting plastic interior signs are relatively common. The amendment clarifies that hanging or base supported signs that have metal encasement on the sides only are permitted.

Cost Impact: Will not increase the cost of construction
This proposal is intended to clarify requirements for interior light-transmitting plastic signs, and allow for flexibility in increasing the size of such signs.

FS 182-15 : 2611-DIGIOVANNI3853

FS 183-15

1410.1, 2612.2, 2612.2.1, 2612.2.2, 2612.3, 2612.4, 2612.6

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

2015 International Building Code

Revise as follows:

1410.1 Plastic composite decking. Exterior deck boards, stair treads, handrails and ~~guardrail systems~~guards constructed of plastic composites, including plastic lumber, shall comply with Section 2612.

2612.2 Labeling ~~and identification~~. ~~Packages~~
Plastic composite deck boards and ~~containers of plastic composites used in exterior applications~~stair treads, or their packaging, shall bear a *label* ~~showing~~ that indicates compliance to ASTM D7032 and includes the ~~manufacturer's name, product identification~~allowable load and ~~information sufficient~~maximum allowable span determined in accordance with ASTM D7032. Plastic composite handrails and guards, or their packaging, shall bear a label that indicates compliance to ~~determine that~~ASTM D7032 and includes the ~~end use will comply~~maximum allowable span determined in accordance with ~~code requirements.~~ASTM D7032.

Delete without substitution:

~~**2612.2.1 Performance levels.** The label for plastic composites used in exterior applications as deck boards, stair treads, handrails and guards shall indicate the required performance levels and demonstrate compliance with the provisions of ASTM D 7032.~~

~~**2612.2.2 Loading.** The label for plastic composites used in exterior applications as deck boards, stair treads, handrails and guards shall indicate the type and magnitude of the load determined in accordance with ASTM D 7032.~~

Revise as follows:

2612.3 Flame spread index. Plastic ~~composites~~composite deck boards, stair treads, handrails and guards shall exhibit a flame spread index not exceeding 200 when tested in accordance with ASTM E 84 or UL 723 with the test specimen remaining in place during the test.

Exception: Materials determined to be noncombustible in accordance with Section 703.5.

2612.4 Termite and decay resistance. ~~Plastic composites~~
Where required by Section 2304.12 plastic composite deck boards, stair treads, handrails and guards containing wood, cellulosic or any other biodegradable materials shall be termite and decay resistant as determined in accordance with ASTM D 7032.

2612.6 Plastic composite ~~decking~~deck boards, stair treads, handrails and guards. Plastic composite ~~decking~~deck boards, stair treads, handrails and guards shall be installed in accordance with this code and the manufacturer's instructions.

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

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

FS 183-15 : 1410.1-WOESTMAN5570