

IBC — General



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

April 19–28, 2015
Memphis Cook Convention Center
Memphis, Tennessee

First Printing

Publication Date: March 2015

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By

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2015 GROUP A – PROPOSED CHANGES TO THE INTERNATIONAL BUILDING CODE – GENERAL

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

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

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202

Proponent: Victor Cuevas, representing City of Los Angeles

2015 International Building Code

Revise as follows:

SECTION 202 DEFINITIONS

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

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

Cost Impact: Will not increase the cost of construction

The code change proposal will not increase the cost of construction.

G 1-15 : 202-AREA, BUILDING-
CUEVAS4536

G 2-15

202

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

2015 International Building Code

Revise as follows:

SECTION 202 DEFINITIONS

AREA, BUILDING. The area included within surrounding *exterior walls* (or *exterior walls* and *fire walls*) exclusive of vent *shafts* and *courts*. Areas of the building not provided with surrounding walls shall be included in the building area if such areas are included within the horizontal projection of the roof or floor above, and the space is usable by the building occupants.

Reason: The strict letter of the definition of building area would say that the area under a roof eave extending beyond the exterior wall 18-24 inches would need to be included in the building area. Therefore, this change is intended to clarify the intent of the definition by adding language to say that the area under the projecting floor or roof needs to be usable area. Areas within the building are usable by the occupants and would be the same condition.

Cost Impact: Will not increase the cost of construction

This change is a clarification of the code language. There is no impact on construction costs.

G 2-15 : 202-AREA, BUILDING-
THOMAS4445

G 3-15

202

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

2015 International Building Code

SECTION 202 DEFINITIONS

ATRIUM. An opening connecting two or more *stories* other than enclosed *stairways*, elevators, hoistways, escalators, plumbing, electrical, air-conditioning or other equipment, which is closed at the top and not defined as a mall. *Stories*, as used in this definition, do not include balconies within assembly groups or *mezzanines* that comply with Section 505. Openings that comply with Section 712.1.9 and 1019.3, Condition 1, shall not be considered an atrium.

Reason: One can look at the two Sections; 712.1.9 and 1019.3 (Condition 1) and conclude that those kinds of openings will constitute atrium under the definition of atrium. This has never been the intent of the code. So by adding this sentence, the clarification is made.

Cost Impact: Will not increase the cost of construction
This proposal will not increase the cost of construction.

G 3-15 : 202-ATRIUM-MAIEL4572

G 4-15

202 (New)

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

2015 International Building Code

Add new definition as follows:

SECTION 202 DEFINITIONS

CHILDREN'S PLAY STRUCTURE. A structure composed of one or more components, where the user enters a play environment that utilizes combustible materials.

Reason: Sections 402.6.3 and 424 of the IBC contain requirements regarding children's play structures. However, no definition exists and there have been discussions that there is some ambiguity about what is meant by the term. The concept incorporated into this definition is that a children's play structure is one that: (a) is constructed of combustible materials, (b) is a structure into which the user (typically a child) enters and (c) has at least one structural component.

A separate definition is being proposed for "soft contained play equipment structure", which is mentioned in items 3,6 and 7 of 424.2.

Cost Impact: Will not increase the cost of construction
This proposal simply adds a definition.

G 4-15 : 202-CHILDREN'S PLAY
STRUCTURE (New)-HIRSCHLER3568

G 5-15

202 (New),

Proponent: Theresa Weston, DuPont Building Innovations, representing DuPont Building Innovations
(theresa.a.weston@usa.dupont.com)

THIS PROPOSAL WILL BE HEARD BY THE FIRE SAFETY COMMITTEE. PLEASE SEE THE TENTATIVE HEARING ORDER FOR THE FS COMMITTEE.

2015 International Building Code

Add new definition as follows:

SECTION 202 DEFINITIONS

COMBUSTIBLE Any material not defined as noncombustible.

NONCOMBUSTIBLE Elementary or composite materials that are not capable of undergoing combustion under specified conditions.

Reason: This proposal adds two needed definitions to the code. There is significant confusion in the industry on how to define combustible and noncombustible materials. The proposed language was developed by considering the testing requirements in Section 703.5 and the definition in *ASTM E176 Terminology of Fire Standards*.

Cost Impact: Will not increase the cost of construction

The proposal adds clarity through definitions only, and does not change code requirements.

G 5-15 : 202-COMBUSTIBLE (New)-
WESTON5608

G 6-15

202

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

2015 International Building Code

Revise as follows:

SECTION 202 DEFINITIONS

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

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

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

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

G 6-15 : 202-CUSTODIAL CARE-
ANDERSON5694

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

2015 International Building Code

Revise as follows:

SECTION 202 DEFINITIONS

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

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

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

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

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

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

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

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

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

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

Getting two standards to reflect a common understanding of the occupancy and use classification and terminology is no small feat. It may take 3 - 6 years to harmonized them. We have to start somewhere. We prefer not to have to continue struggling with these definitions 6 years from now.

=====

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

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

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

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

Chapter 14 New Educational Occupancies

14.1.3.4 Dormitory and Classrooms.

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

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

15.1.3.4 Dormitory and Classrooms.

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

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

Chapter 22 New Detention and Correctional Occupancies

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

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

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

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

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

Chapter 28 New Hotels and Dormitories

28.1 General Requirements.

28.1.1 Application.

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

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

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

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

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

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

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

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

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

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

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

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

A member recently asked this question. I thought it was interesting, and that the answer is too. Hopefully you feel the same. Does anyone know of any articles or studies as to when/why the lingo changed from dorm to res hall (to living center, etc)? As far as I know, there aren't any articles specifically on this (please post in the comments if you know otherwise). However, this is the answer I sent. Below I pasted the definitions from the online etymology dictionary, to which I'm referring here. (I love the Online Etymology Dictionary, by the way. It is fabulous.) Basically, "dormitory" comes from the word dormir which means to sleep or to become dormant. I've included some related definitions as well; cubicle (derived from a word that meant "to lie down, to bend oneself"), was the space in which someone slept in the dormitory. The word "cemetery" was derived from words related to dormitory, as it is a "sleeping place." The references to folding oneself into cubicles and death are likely the reason "dormitory" fell out of favor. Further below, there's the historical meanings for the words "residence" and "hall" which have much grander and more home-like pedigrees than that of "dormitory." These connotations are what universities and colleges refer to when explaining why those buildings are residence halls, not dormitories. (A number of examples can be found at the link.) I think the terms "living-learning" and similar, to specifically denote the educational aspects of residence halls, were used more commonly following the publishing of the Residential Nexus, which argued for a strong educational presence in the residence halls. As this is also a way to show the benefits of housing to students, parents and the administration, housing pros emphasize the home-like and educational aspects of housing, rather than the sleeping, dormant aspect. EDIT: Kevin Guidry's comment about an article in the Talking Stick sent me on a hunt through late-80s copies of the magazine. After flipping through many pages of--it must be said--ill-advised editorial, advertisement and fashion decisions, I found the article to which he was likely referring. Here it is: TalkingStick87 ResHallsDorms From the Online Etymology Dictionary: Dormitory: mid-15c., from L. dormitorium, from dormire "to sleep" (see dormant). Dorm: 1900, colloquial shortening of dormitory. Cubicle: late 15c., from L. cubiculum "bedroom," from cubare "to lie down," originally "bend oneself," from PIE base *keu(b)- "to bend, turn." Obsolete from 16c., but revived 19c. for "dormitory sleeping compartment," sense of "any partitioned space" (such as a library carrel) is first recorded 1926. Cemetery: late 14c., from O.Fr. cimetiere "graveyard" (12c.), from L.L. coemeterium, from Gk. koimeterion "sleeping place, dormitory," from koimao "to put to sleep," keimai "I lie down," from PIE base *kei- "to lie, rest" (cf. Goth. haims "village," O.E. ham "home, house, dwelling"); see home. Early Christian writers were the first to use it for "burial ground," though the Greek word also were anciently used of the sleep of death. Hall: O.E. heall "place covered by a roof, spacious roofed residence, temple," from P.Gmc. *khallo "to cover, hide" (cf. O.H.G. halla, Ger. halle, Du. hal, O.N. höll "hall;" O.E. hell, Goth. halja "hell"), from PIE base *kel- "to hide, conceal" (see cell). Sense of "entry, vestibule" evolved 17c., at a time when the doors opened onto the main room of a house. Older sense preserved in town hall, music hall, etc., and in university dormitory names. Hall of Fame first attested 1901, in ref. to Columbia College. Residence: c.1380, from M.L. residential, from L. residentem (nom. residents) "residing, dwelling," prp. of residere "reside" (see reside). Residential is attested from 1654, "serving as a residence;" meaning "having to do with housing" is from 1856.

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

Cost Impact: Will not increase the cost of construction

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

G 7-15 : 202-DORMITORY -
ANTHONY5279

Proponent: Michael Barrett, Salt Lake County, representing Salt Lake County (mbarrett@slco.org)

2015 International Building Code

Revise as follows:

SECTION 202 DEFINITIONS

DWELLING. A building that contains one or two *dwelling units* used, intended or designed to be used, rented, leased, let or hired out to be occupied for living purposes for any period or length of time.

Reason: Introduction -

The code provisions in the IRC and IBC do not assign lease or rental time frames to detached one and two family dwellings and townhouses. The IBC and IRC define a dwelling as; "A building that contains one or two dwelling units used, intended or designed to be used, rented, leased, let or hired out to be occupied for living purposes".

Neither Code requires that the IBC be applied to detached one and two family dwellings and townhouses simply based upon the period of time they are rented. Providing some clarifying and defining language would ensure that the appropriate code is applied.

Justification -

Many detached one and two family dwellings and townhouses are "second homes". Often they are used, rented, leased, let or hired out to be occupied for living purposes, as a single family unit, for periods of time ranging anywhere from one day to years. Whereas they are occupied as a single family unit, and fall within the scope of the IRC, it would be appropriate that they be regulated under the IRC. This clarification is important as it eliminates confusion and a tendency to use the IBC to regulate detached one and two family dwellings and townhouses in this particular situation when the home is within the scope of the IRC and is occupied as a single family unit for less than thirty days. A large number of these homes are located within resort communities and rented for short periods of time. These dwellings may also be used as a housing resource, post disaster, for long or short term housing during the community's disaster recovery process. Applying the IBC would introduce a myriad of challenges. Moreover, the associated costs to comply with IBC requirements would be significant. Using Teton County Wyoming as a model, a cost benefit analysis was performed by Crystal Springs Ranch, Inc., A prominent developer in Teton County Wyoming.

Summary –

Detached one and two family dwellings and townhouses occupied as a single-family unit that fall within the scope of the IRC, should be governed under those provisions regardless of the length of time they are occupied. The proposed language inserted into the referenced code sections is consistent with language used elsewhere in the code and provides much needed clarification as to the proper application of the correct code.

Cost Impact: Will increase the cost of construction

Twelve Standalone Townhouse Units in Teton Village, Wyoming (Approximately 3800 Sq. Ft.)

Item	Description	IBC Cost Increases Per Unit
1	General Conditions - increased construction duration	\$ 4,635
2	Fire Sprinklers	\$ 15,162
3	Fire Resistance Requirements or Exterior Walls based on Fire Separation Distance	\$ 2,575
4	Floor Elevations at the Required Egress Doors	\$ -
5	Stairways	\$ -
6	Stairway Landings	\$ -
7	Accessibility	\$ -
8	Handrails	\$ -
9	Wiring Methods	\$ 22,660
Total		\$ 45,032

Four Standalone Townhouse Units in Teton Village, Wyoming (Approximately 3800 Sq. Ft.)

Total All Items **\$ 47,028**

Twelve Standalone Townhouse Units in Teton Village, Wyoming (Approximately 4,000 - 5,300 Sq. Ft.)

Total All Items **\$ 60,174**

A large number of these homes are located within resort communities and rented for short periods of time. These dwellings may also be used as a housing resource post disaster for long or short term housing during the community's disaster recovery process. Applying the IBC would introduce a myriad of challenges. Moreover, the associated costs to comply with IBC requirements would be significant. Using Teton County Wyoming as a model, a cost benefit analysis was performed by Crystal Springs Ranch, Inc., A prominent developer in Teton County Wyoming.

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, Code Technology Committee, representing Code Technology Committee (CTC@iccsafe.org); Adolf Zubia, Chair, Fire Code Action Committee (fcac@iccsafe.org); Edward Kulik, Chair, Building Code Action Committee (bcac@iccsafe.org)

2015 International Building Code

Revise as follows:

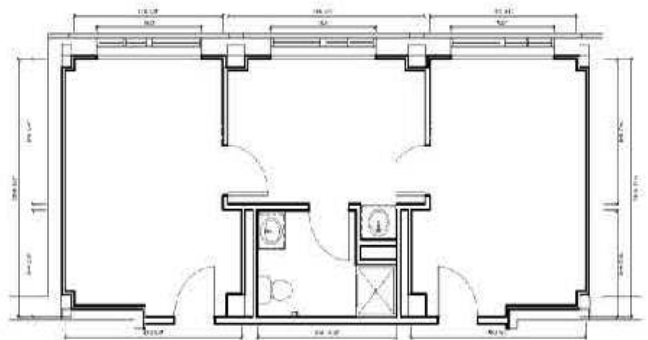
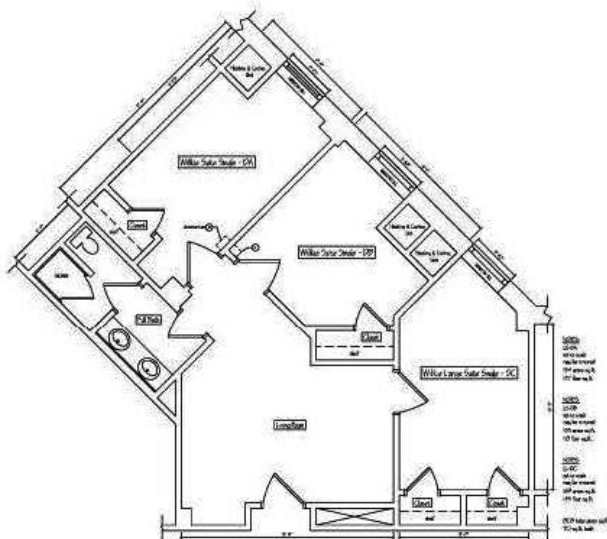
SECTION 202 DEFINITIONS

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

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

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

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



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

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

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

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

<http://www.iccsafe.org/cs/CAC/Pages/default.aspx?usertoken={token}&Site=icc>

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

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

G 10-15

202 (New)

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

THIS PROPOSAL WILL BE HEARD BY THE MEANS OF EGRESS COMMITTEE. PLEASE SEE THE TENTATIVE HEARING ORDER FOR THE MOE COMMITTEE.

2015 International Building Code

Add new text as follows:

SECTION 202 DEFINITIONS

EGRESS SIDE The side of the door first encountered when attempting to leave a room, a story or a building.

Reason: "Egress side" is used in multiple places in the I-Codes but not defined or described. In many uses of "egress side", the context provides an understanding of what is meant by the term. However, in some uses of the term "egress side", the context may be ambiguous as to which side of the door the term refers to. To ensure consistent interpretation and application of requirements pertaining to the egress side of the door, we are proposing this definition.

Cost Impact: Will not increase the cost of construction
No technical revisions.

G 10-15 : 202-EGRESS SIDE (New)-
WOESTMAN5499

G 11-15

202

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

2015 International Building Code

Revise as follows:

SECTION 202 DEFINITIONS

FOOD COURT. A ~~public~~ seating area located in the *mall* that serves adjacent food preparation tenant spaces.

Reason: If the word "public" is deleted, compliance requirements can also be applied to private clubs, resorts and hotels.

Cost Impact: Will not increase the cost of construction

The code change proposal clarifies application of the section of the code and will not increase the cost of construction.

G 11-15 : 202-FOOD COURT-
CUEVAS4691

G 12-15

202

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

2015 International Building Code

Revise as follows:

SECTION 202 DEFINITIONS

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

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

Cost Impact: Will not increase the cost of construction

The code change proposal will not increase the cost of construction.

G 12-15 : 202-GRADE PLANE-
CUEVAS4577

G 13-15

202 (New)

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

2015 International Building Code

Add new definition as follows:

SECTION 202 DEFINITIONS

GREENHOUSE. A structure or thermally isolated area of a building that maintains a specialized sunlit environment exclusively used for, and essential to, the cultivation, protection or maintenance of plants.

Reason: Greenhouses are a type of special structure intended to create and maintain a unique sunlit environment used exclusively for, and essential to, the cultivation and protection or maintenance of plants. This definition intends to clarify that it is the unique ENVIRONMENT of the structure, not the structure itself or the presence of plants that makes such a structure a greenhouse.

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

For that reason, this proposed definition ONLY addresses greenhouse structures, and NOT other spaces such as sunrooms, solariums, glass enclosed walkways, atria or other types of interior spaces that permit ample sunlight and ventilation so as to prominently feature plants for aesthetic purposes.

Although there are numerous requirements for greenhouses in the IBC, there is currently no definition of "greenhouse" in the IBC. The definition makes a distinction between structures as mentioned above. Making this distinction between greenhouses and other sunny interior spaces and structures with plants and/or planted areas will help code enforcers apply the appropriate code requirement for such spaces.

This proposal for a definition for greenhouses was approved for the 2015 International Energy Conservation Code.

Cost Impact: Will not increase the cost of construction

There is no cost impact related to this proposal because this code change only adds a new definition to the code.

G 13-15 : 202-GREENHOUSE (New)-
LOVELL4393

G 14-15

202 (New)

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

THIS PROPOSAL WILL BE HEARD BY THE FIRE SAFETY COMMITTEE. PLEASE SEE THE TENTATIVE HEARING ORDER FOR THE FS COMMITTEE.

2015 International Building Code

Add new definition as follows:

SECTION 202 DEFINITIONS

OPENING PROTECTIVE. *A fire door assembly, fire shutter assembly, fire window assembly or glass-block assembly in a fire-resistance-rated wall or partition.*

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 term is used extensively in the code, including the title of Section 716, but is not always understood by code users. This definition provides clarity.

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 adds a definition of this term.

G 14-15 : 202-OPENING PROTECTIVE
(New)-ZUBIA4201

G 15-15

202

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

THIS PROPOSAL WILL BE HEARD BY THE FIRE SAFETY COMMITTEE. PLEASE SEE THE TENTATIVE HEARING ORDER FOR THE FS COMMITTEE.

2015 International Building Code

Revise as follows:

SECTION 202 DEFINITIONS

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

Delete without substitution:

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

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

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

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

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

Cost Impact: Will not increase the cost of construction

No cost implications. No technical changes to the code requirements.

G 15-15 : 202-PLASTIC COMPOSITE-
WOESTMAN5568

G 16-15

202

Proponent: Mike Fischer, Kellen Company, representing the Plastic Glazing Coalition of the American Chemistry Council
(mfischer@kellencompany.com)

THIS PROPOSAL WILL BE HEARD BY THE FIRE SAFETY COMMITTEE. PLEASE SEE THE TENTATIVE HEARING ORDER FOR THE FS COMMITTEE.

2015 International Building Code

Revise as follows:

SECTION 202 DEFINITIONS

PLASTIC GLAZING. Plastic materials that are glazed or set in frame or sash ~~and not held by mechanical fasteners that pass through the glazing material.~~

Reason: The current definition of Plastic Glazing includes a restriction on attachment that is arbitrary and unnecessary. Many plastic glazing elements include penetrations as well as attachment hardware that passes through the glazing material. This restriction should not be in a definition; all other structural, fire, and safety provisions in the IBC apply.

Cost Impact: Will not increase the cost of construction
The proposal adds no new requirements.

G 16-15 : 202-PLASTIC GLAZING-
FISCHER5340

G 17-15

202

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

THIS PROPOSAL WILL BE HEARD BY THE FIRE SAFETY COMMITTEE. PLEASE SEE THE TENTATIVE HEARING ORDER FOR THE FS COMMITTEE.

2015 International Building Code

Revise as follows:

SECTION 202 DEFINITIONS

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

Reason: The IBC discusses approved light transmitting plastics in the sections associated with such plastics within Chapter 26 of the code. The concepts included in the definition refer to the classifications of Class CC1 and Class CC2 in section 2606.4 of the code. For all other uses there is nothing different about approving a plastic material than approving a wood material or any other type of material.

Proposals are also being submitted to the relevant sections that reference "approved plastic" when they should reference "approved light transmitting plastic"

Cost Impact: Will not increase the cost of construction

This is simply a change in the definition of "plastic, approved" to "light transmitting plastic, approved" that would clarify the intent of the definition.

G 17-15 : 202-PLASTIC, APPROVED-
HIRSCHLER3513

G 18-15

202

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

2015 International Building Code

Revise as follows:

SECTION 202 DEFINITIONS

PRIVATE GARAGE. A building or portion of a building in which motor vehicles used by the owner or tenants of the building or buildings on the premises are stored or kept, without provisions for repairing or servicing such vehicles for profit.

Reason: Private garages can also be used by the owners of the building.

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

Cost Impact: Will not increase the cost of construction

This code proposal will not increase the cost of construction. It permits additional use of the building.

G 18-15 : 202-PRIVATE GARAGE-
KULIK4798

G 19-15

202 (New)

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

2015 International Building Code

Add new definition as follows:

SECTION 202 DEFINITIONS

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

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

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

G 19-15 : 202-SOFT CONTAINED
PLAY EQUIPMENT STRUCTURE
(New)-HIRSCHLER4582

G 20-15

202

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

2015 International Building Code

Revise as follows:

SECTION 202 DEFINITIONS

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

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

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

Cost Impact: Will not increase the cost of construction

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

G 20-15 : 202-SWIMMING POOL-
HATFIELD5447

G 21-15

202

Proponent: Jay Crandell, ARES Consulting, representing Foam Sheathing Committee of the American Chemistry Council

THIS PROPOSAL WILL BE HEARD BY THE FIRE SAFETY COMMITTEE. PLEASE SEE THE TENTATIVE HEARING ORDER FOR THE FS COMMITTEE.

2015 International Building Code

Revise as follows:

SECTION 202 DEFINITIONS

VAPOR RETARDER CLASS. A measure of a material or assembly's ability to limit the amount of moisture that passes through that material or assembly. Vapor retarder class shall be defined using the desiccant method with Procedure A of ASTM E 96 as follows:

Class I: 0.1 perm or less.

Class II: $0.1 < \text{perm} \leq 1.0$ perm.

Class III: $1.0 < \text{perm} \leq 10$ perm.

Reason: To make IBC and IRC definitions of vapor retarder class more consistent by adding reference to Procedure A of ASTM E 96. The IRC definition also should be later adjusted to be more grammatically correct and consistent with the IBC (e.g., the IRC definition reads "A measure of a material or assembly to limit..." which misses the word "ability" included in the IBC definition).

Cost Impact: Will not increase the cost of construction

This is a definition editorial change to coordinate codes with no cost impact.

G 21-15 : 202-VAPOR RETARDER
CLASS-CRANDELL4999

G 22-15

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

Proponent: Sarah Rice, Preview Group, representing Preview Group

2015 International Building Code

Revise as follows:

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

~~AMBULATORY CARE FACILITY.~~

~~CLINIC, OUTPATIENT.~~

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

~~1602.1 Definitions and notations~~ The following terms—Terms are defined in Chapter 2. The following notations are used in this chapter:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Cost Impact: Will not increase the cost of construction

The proposal is purely editorial in nature and will have no impact on actual construction.

G 22-15 : 304.2-RICE5794

G 23-15

302.1, 508.2.4, 508.3.3

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

2015 International Building Code

Revise as follows:

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

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

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

Exceptions:

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

508.3.3 Separation. No separation is required between nonseparated occupancies.

Exceptions:

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

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

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

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

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

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

Section 903.2.1.6 was added in the last code change cycle in code change # F121, F122, F124 -13 by Aon Fire Protection, Tennessee Code Development Committee and the ICC Fire Code Action Committee to require sprinkler protection below occupied roofs with more than 100 occupants for Group A-2 and 300 for all other Group A occupancies when not on open parking garages constructed of Type I or Type II. The substantiation for Code Change # F124 that prevailed with modifications, and that was approved under public comment # 1, stated in part that "The occupants of the Group A occupancy, whether within the building or on the roof, are unaware of the hazards in the building and need to evacuate through the building."

Cost Impact: Will increase the cost of construction

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

G 24-15

302.1, 503.1.4 (New)

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

2015 International Building Code

Revise as follows:

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

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

Add new text as follows:

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

Reason: Many buildings are being built or altered to create an occupied roof. The code is not clear as to the requirements for these "spaces". Chapter 10 takes care of the means of egress requirements. But, the rest of the code does not address these issues. Some areas are used as gathering spaces, dining areas, swimming pools, etc. The question has come up as to whether these uses are an "occupancy". Some jurisdictions classify them as occupancies and others do not. We were originally going to look at writing a much larger change that would state that they are not occupancies and provide exceptions throughout the code. However, the fact is that the code is an occupancy driven document. Therefore, we decided to use similar language in Section 302.1 combined with the language in Section 1004.5. An occupied roof would be classified to an occupancy that it most resembles. For example, a roof off of a private office would be classified as a Group B occupancy. However a roof above a restaurant would be classified as a Group A-2 occupancy.

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

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

Cost Impact: Will not increase the cost of construction

This change is a clarification to the code. It will not affect the overall cost of construction.

G 24-15 : 302.1-THOMAS4437

G 25-15

303.1.1, 303.1.2

Proponent: Johnna Grizzard, representing Virginia Building and Code Officials Association

2015 International Building Code

Revise as follows:

303.1.1 Small buildings and tenant spaces. A building or tenant space used for assembly purposes with an *occupant load* of less than 50 persons ~~shall~~ is permitted to be classified as a Group B occupancy.

303.1.2 Small assembly spaces. The following rooms and spaces shall not be classified as Assembly occupancies:

1. A room or space used for assembly purposes with an *occupant load* of less than 50 persons and accessory to another occupancy ~~shall~~ is permitted to be classified as a Group B occupancy or as part of that occupancy.
2. A room or space used for assembly purposes that is less than 750 square feet (70 m²) in area and accessory to another occupancy ~~shall~~ is permitted to be classified as a Group B occupancy or as part of that occupancy.

Reason: The current language requires that Group A, Assembly buildings, tenant spaces, and small areas with an occupant load less than 50 be classified as a Group B occupancy. These exceptions were likely originally intended to be Exceptions--not requirements. By requiring such spaces to be classified as a B occupancy, a *change of occupancy* could be forced when the actual hazard is being decreased. When a space undergoes a change of use the accessible route, plumbing fixture calculations, outside air calculations, etc. have to be evaluated under current code provisions. If applied literally, this current language is a significant burden on a business owners.

For example, if a small cafe had an occupant load less than 50 due to fixture layout and were to move into a space that was previously classified as an A-2, the current language would required that the space be re-classified to a Business occupancy.

Cost Impact: Will not increase the cost of construction

Clarifying the intent of these exceptions would likely reduce the cost because Assesmbly occupancies with less than 50 occupants would not be forced into a *change of occupancy*.

G 25-15 : 303.1.1-GRIZZARD5463

G 26-15

303.1.1, 303.1.2

Proponent: Gregory Keith, Professional heuristic Development, representing The Boeing Company (grkeith@mac.com)

2015 International Building Code

Revise as follows:

303.1.1 Small buildings and tenant spaces. A building or tenant space used for assembly purposes with an *occupant load* of less than 50 persons that is not accessory to another occupancy shall be classified as a Group B occupancy.

303.1.2 Small assembly spaces. The following rooms and spaces shall not be classified as Assembly occupancies:

1. A room or space used for assembly purposes with an *occupant load* of less than 50 persons and accessory to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.
2. A room or space used for assembly purposes that is less than 750 square feet (70 m²) in area and accessory to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.

Reason: This proposal is intended to provide clarity to users. There is a technical relationship between Sections 303.1.1 and 303.1.2. Both deal with buildings or portions of buildings having an occupant load of less than 50 persons. The qualifying conditions for both sections are somewhat similar. However, Section 303.1.2 states that applicable spaces are accessory to another occupancy. If such is the case, such space may be classified as a Group B occupancy or the occupancy to which they are accessory. Until a person reads Section 303.1.2, the intent of Section 303.1.1 does not become readily apparent. That is, Section 303.1.1 is applicable to tenant spaces not accessory to another occupancy. Inclusion of this clarifying language will place Section 303.1.1 in technical context and assist code users as they attempt to classify occupancies containing assembly uses.

Cost Impact: Will not increase the cost of construction
This proposal results in no technical change.

G 26-15 : 303.1.1-KEITH5457

G 27-15

303.4

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

2015 International Building Code

Revise as follows:

303.4 Assembly Group A-3. Group A-3 occupancy includes assembly uses intended for worship, recreation or amusement and other assembly uses not classified elsewhere in Group A including, but not limited to:

Amusement arcades

Art galleries

Bowling alleys

Community halls

Courtrooms

Dance halls (not including food or drink consumption)

Exhibition halls

Funeral parlors

Greenhouses with public access for the conservation and exhibition of plants

Gymnasiums (without spectator seating)

Indoor *swimming pools* (without spectator seating) Indoor tennis courts (without spectator seating)

Lecture halls

Libraries

Museums

Places of religious worship

Pool and billiard parlors

Waiting areas in transportation terminals

Reason: Buildings made for human habitation maintain specific lighting, ventilation, heating and cooling levels that are suitable for the health and welfare of humans and their property, even though plants can co-exist in such environments. The main distinguishing feature between a greenhouse and other structures is that the environment in a greenhouse is designed and maintained exclusively for, and is essential for the aggressive propagation of plants.

However, other activities can be conducted in a greenhouse, such as retail business, research by schools and universities, conservation, education, display by botanical institutions holding documented collections of specialty plants, and similar activities.

The intent of this proposal is to clarify that greenhouses, while typically determined to be Group U, are also used for public venues for the conservation and exhibition of specialty collections of plants, such as botanical gardens, private collections open to the public, and municipal parks. This proposal recognizes that trend, and helps code users and enforcers to consistently apply the requirements appropriately for greenhouses determined to be in this occupancy group.

Most importantly, even though the greenhouse is accessible by the public, it is still intended to maintain a unique environment with carefully controlled conditions specific to the plants in the greenhouse; otherwise, the plants will not survive. Greenhouses with public access for the conservation and exhibition of plants should not be confused with other sunlit interior spaces that feature plants for aesthetic purposes.

Cost Impact: Will not increase the cost of construction

There is no cost impact related to this proposal because this code change only adds greenhouses to Group A-3.

G 27-15 : 303.4-LOVELL5751

G 28-15

303.5

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

2015 International Building Code

Revise as follows:

303.5 Assembly Group A-4. Group A-4 occupancy includes assembly uses intended for viewing of indoor sporting events and activities with spectator seating including, but not limited to:

Arenas

Skating rinks

Swimming pools

Tennis courts

Sports practice facilities

Reason: These large facilities are now in common use for intercollegiate football programs. Recognition here will correlate with another proposal we will submit for Section 906.

Cost Impact: Will not increase the cost of construction

This is just a proposal for refinement of an existing definition that will likely reduce variance requests. From that standpoint, this definition may actually reduce construction cost farther upstream in the design phase.

G 28-15 : 303.5-ANTHONY5460

G 29-15

304.1

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

2015 International Building Code

Revise as follows:

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

Airport traffic control towers

Ambulatory care facilities

Animal hospitals, kennels and pounds

Banks

Barber and beauty shops

Car wash

Civic administration

Clinic, outpatient

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

Educational occupancies for students above the 12th grade

Electronic data processing

Food processing establishments and commercial kitchens not associated with restaurants, cafeterias and similar dining facilities not more than 2,500 square feet (232 m²) in area.

Greenhouses attached to structures classified as Group B

Laboratories: testing and research

Motor vehicle showrooms

Post offices

Print shops

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

Radio and television stations

Telephone exchanges

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

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

The intent of this proposal is to clarify that greenhouses, typically considered to be Group U, are being used for educational occupancies for students above the 12th grade such as universities and schools, laboratories for research, and other professional settings. This proposal helps code users and enforcers to apply the requirements consistently and appropriately for greenhouses that have been determined to be in this occupancy group.





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

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

G 29-15 : 304.1-LOVELL4395

G 30-15

305.1.2 (New)

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

2015 International Building Code

Add new text as follows:

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

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

The intent of this proposal is to clarify that greenhouses, while typically determined to be Group U, are being used for educational occupancies for students in private and public schools, laboratories, and other educational venues. This proposal helps code users and enforcers to consistently apply the requirements appropriately for greenhouses determined to be in this occupancy group.

Cost Impact: Will not increase the cost of construction

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

G 30-15 : 305.1.2 (New)-LOVELL5092

G 31-15

306.3

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

2015 International Building Code

Revise as follows:

306.3 Low-hazard factory industrial, Group F-2. Factory industrial uses that involve the fabrication or manufacturing of noncombustible materials that during finishing, packing or processing do not involve a significant fire hazard shall be classified as F-2 occupancies and shall include, but not be limited to, the following:

Beverages: up to and including 16-percent alcohol content

Brick and masonry

Ceramic products

Foundries

Glass products

Gypsum

Ice

Metal products (fabrication and assembly)

Plants cultivated in detached production greenhouses

Reason: Although greenhouses have historically been classified in the IBC as Group U occupancy group, many of today's greenhouses are actually manufacturing and process facilities intensively cultivating flowers, vegetables, fruits, and herbs for food, medicine, etc. They maintain a highly controlled interior environment for heating, cooling, watering, and the management of sunlight for maximum yield. Such facilities have a low occupant load and manufacture "products" that are not a significant fire hazard and require minimal packaging. Such facilities are technologically sophisticated and are not consistent with other low-tech Group U structures such as stables, barns, sheds and carports, and exceed the area limitations for that use group.

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



Commercial production greenhouse. Use Group F-2.

Cost Impact: Will not increase the cost of construction

There is no cost impact related to this proposal because this code change only adds plants in commercial greenhouses to Group F-2.

G 31-15 : 306.3-LOVELL5094

G 32-15

202 (New), 308.3, 310.6, 420.4

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

2015 International Building Code

Add new definition as follows:

SECTION 202 DEFINITIONS

CRISIS CENTER. A building or part thereof housing persons, on a 24-hour basis, who due to an emergent situation need housing. The occupants are generally capable of responding to an emergency situation, but may require physical prompting from staff and may include adults or children with an adult, parent or guardian.

Revise as follows:

308.3 Institutional Group I-1. Institutional Group I-1 occupancy shall include buildings, structures or portions thereof for more than 16 persons, excluding staff, who reside on a 24-hour basis in a supervised environment and receive custodial care. Buildings of Group I-1 shall be classified as one of the occupancy conditions specified in Section 308.3.1 or 308.3.2. This group shall include, but not be limited to, the following:

Alcohol and drug centers

Assisted living facilities

Congregate care facilities

Crisis Center

Group homes

Halfway houses

Residential board and care facilities

Social rehabilitation facilities

310.6 Residential Group R-4. Residential Group R-4 occupancy shall include buildings, structures or portions thereof for more than five but not more than 16 persons, excluding staff, who reside on a 24-hour basis in a supervised residential environment and receive *custodial care*. Crisis center facilities shall be permitted to be used for the care of not more than 10 children under the age of 2-1/2 on a transient basis. Buildings of Group R-4 shall be classified as one of the occupancy conditions specified in Section 310.6.1 or 310.6.2. This group shall include, but not be limited to, the following:

Alcohol and drug centers

Assisted living facilities

Congregate care facilities

Crisis center

Group homes

Halfway houses

Residential board and care facilities

Social rehabilitation facilities

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in this code.

420.4 Smoke barriers in Group I-1, Condition 2. Smoke barriers shall be provided in Group I-1, Condition 2 and crisis centers, to subdivide every story used by persons receiving care, treatment or sleeping and to provide other stories with an occupant load of 50 or more persons, into no fewer than two smoke compartments. Such stories shall be divided into smoke compartments with an area of not more than 22,500 square feet (2092 m²) and the distance of travel from any point in a smoke compartment to a smoke barrier door shall not exceed 200 feet (60 960 mm). The smoke barrier shall be in accordance with Section 709.

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

The IBC currently would have us classify any Child Care Facility having more than 5 children less than 2 ½ years old staying there for up to three days as an I-2 Occupancy. For a two-story that would require the building be built of II-A construction even if fully protected by an NFPA 13 sprinkler system due to the I-2 classification. We feel that is excessive for a small crisis type center that provides shelter for a mother and child for a short period of time while they find a place to live. For that reason, we feel it is more reasonable to include such a use in the special occupancy section of the code.

Also, IBC Chapter 11 does not specifically address this type of care and accordingly lacks direction as to applying accessibility provisions. Currently code users and code officials can evaluate the building for accessibility using "anticipated need" and because Chapter 11 does not have provisions for a "Crisis Center" one can be led to "R-4" provisions using "anticipated need" for applying the accessibility provisions. That still leaves code officials in the awkward position of requiring the higher levels of costly construction for items like fire resistive rated noncombustible construction, shafts, dampers and exiting due to the I-2 occupancy.

For those reasons we feel it would be best to include a definition in Chapter 2, a reference to those facilities in sections 308.3 and 310.6 and the details within Section 420.

Cost Impact: Will not increase the cost of construction

This proposal will not increase the cost of construction. The cost of construction and maintenance should be reduced for these types of facilities.

G 32-15 : 308.3-KULIK3682

G 33-15

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

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

2015 International Building Code

Revise as follows:

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

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

310.5.1 Care facilities within a dwelling. Care facilities for

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

2015 International Fire Code

Revise as follows:

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

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

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

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

NFPA 13D sprinkler systems are required for care facilities with 5 or fewer residents (Section 903.2.8.4) that decide to construct in the IBC. The proposed wording is for consistency in the language in Chapter 3.

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

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

Cost Impact: Will not increase the cost of construction

Sprinklers requirements for homes are addressed in the IRC. Working within the family of codes, this is not a change in requirements.

G 33-15 : 308.3.4-BALDASSARRA4268

G 34-15

308.3.4, 308.4.2, 310.5.1

Proponent: Gerald Anderson, representing self (Jerry.Anderson@opkansas.org)

2015 International Building Code

Revise as follows:

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

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

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

Reason: It is not necessary to state that an automatic fire sprinkler system is required because Section 313 of the International Residential Code (IRC) already requires that such systems be installed in all one and two family dwellings.

I would also argue that it is inappropriate for the IBC to dictate what needs to be accomplished in the IRC. Either it is or it is not okay for these types of uses to be constructed in accordance with the requirements of the IRC.

We also need to be consistent in our language. I would note that IBC Section 308.6.4 of the IBC (I-4 day care facilities) makes reference to the IRC without the additional language concerning fire sprinklers. Also, in IBC Section 310.5.2 (lodging houses) it makes reference to the IRC without the additional language concerning fire sprinklers.

I also made an additional change to section 310.5.1. Instead of saying 'permitted to comply' I am suggesting that it state 'permitted to be constructed in accordance'. This language is consistent with the language in 310.5.2 for lodging houses.

Every code cycle the code increases in size. Any effort that can be made to reduce unnecessary language should be taken up immediately.

Cost Impact: Will not increase the cost of construction
This change will have no bearing on cost.

G 34-15 : 308.3.4-ANDERSON5628

G 35-15

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

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

2015 International Building Code

Add new definition as follows:

SECTION 202 DEFINITIONS

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

Revise as follows:

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

24-HOUR BASIS.

CUSTODIAL CARE.

DETOXIFICATION FACILITIES.

FOSTER CARE FACILITIES.

HOSPITALS AND PSYCHIATRIC HOSPITALS.

LOCKUP FACILITY

INCAPABLE OF SELF-PRESERVATION.

MEDICAL CARE.

NURSING HOMES.

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

Correctional centers

Detention centers Jails

Lockup facility

Prerelease centers

Prisons

Reformatories

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

Add new text as follows:

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

1. The area containing a lockup facility shall be separated from other rooms, spaces or areas by smoke barrier complying with Section 709.

2. The building containing a lockup facility shall be protected with an automatic fire sprinkler system complying with Section 903.

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

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

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

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

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

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

Cost Impact: Will increase the cost of construction

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

G 35-15 : 308.5.6 (New)-KULIK4893

G 36-15

309.1

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

2015 International Building Code

Revise as follows:

309.1 Mercantile Group M. Mercantile Group M occupancy includes, among others, the use of a building or structure or a portion thereof for the display and sale of merchandise, and involves stocks of goods, wares or merchandise incidental to such purposes and accessible to the public. Mercantile occupancies shall include, but not be limited to, the following:

Department stores

Drug stores

Greenhouses with public access that maintain plants for display and sale

Markets

Motor fuel-dispensing facilities

Retail or wholesale stores

Sales rooms

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



Greenhouse for display and retail sales of plants intended for public access - Use Group M.

Cost Impact: Will not increase the cost of construction

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

G 36-15 : 309.1-LOVELL5096

G 37-15

310.4, 310.5

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, Code Technology Committee, representing Code Technology Committee (CTC@iccsafe.org); Adolf Zubia, Chair, Fire Code Action Committee (fcac@iccsafe.org); Edward Kulik, Chair, Building Code Action Committee (bcac@iccsafe.org)

2015 International Building Code

Revise as follows:

310.4 Residential Group R-2. Residential Group R-2 occupancies containing *sleeping units* or more than two *dwelling units* where the occupants are primarily permanent in nature, including:

Apartment houses with three or more dwelling units
~~Boarding houses (nontransient) with more than 16 occupants~~
Congregate *living facilities* (non-transient) with more than 16 occupants
Boarding houses (non transient)
Convents
Dormitories
Fraternities and sororities
Monasteries
Hotels (nontransient)
Live/work units
Motels (nontransient)
Vacation timeshare properties

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

Buildings that do not contain more than two *dwelling units*
~~Boarding houses (nontransient) with 16 or fewer occupants~~
~~Boarding houses (transient) with 10 or fewer occupants~~
Care facilities that provide accommodations for five or fewer persons receiving care
Congregate *living facilities* (nontransient) with 16 or fewer occupants
Boarding houses (nontransient)
Convents
Dormitories
Fraternities and sororities
Monasteries
Congregate *living facilities (transient)* with 10 or fewer occupants
Boarding houses (transient)
Lodging houses with five or fewer *guest rooms*

Reason: Currently convents, dormitories, fraternities, sororities and monasteries are only listed as Group R-2. If these facilities are small enough (i.e., 16 or fewer occupants), they should be permitted to comply with Group R-3 requirements. This would be consistent with current allowances for boarding houses and non-transient congregational residences.

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

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

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

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

<http://www.iccsafe.org/cs/CAC/Pages/default.aspx?usertoken={token}&Site=icc>

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

310.5 - congregational living facilities should not be indented

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

G 38-15

310.4

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

2015 International Building Code

Revise as follows:

310.4 Residential Group R-2. Residential Group R-2 occupancies containing *sleeping units* or more than two *dwelling units* where the occupants are primarily permanent in nature, including:

Apartment houses

Boarding houses (nontransient) with more than 16 occupants

Congregate living facilities (nontransient) with more than 16 occupants

Convents

Dormitories (Student residence facilities)

Fraternities and sororities

Hotels (nontransient)

Live/work units

Monasteries

Motels (nontransient)

Vacation timeshare properties

Reason: Submitted to draw attention to 2 other proposals submitted by the University of Michigan -- both are conceptually similar. Whichever definition the committee accepts, the definition should be carried over to this part of the IBC for consistency.

Cost Impact: Will not increase the cost of construction

This is just a bit of wordsmithing to make sure any new definition proposed in Section 202 gets conveyed into Section 310

G 38-15 : 310.4-ANTHONY5411

G 39-15

310.4

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

2015 International Building Code

Revise as follows:

310.4 Residential Group R-2. Residential Group R-2 occupancies containing *sleeping units* or more than two *dwelling units* where the occupants are primarily permanent in nature, including:

Apartment houses

Boarding houses (nontransient) with more than 16 occupants

Condominiums (nontransient)

Congregate living facilities (nontransient) with more than 16 occupants

Convents

Dormitories

Fraternities and sororities

Hotels (nontransient)

Live/work units

Monasteries

Motels (nontransient)

Vacation timeshare properties

Reason: Condominiums are not defined and could be interpreted as R-1 or R-2 occupancies depending on the use by the Owner as either a rental unit on a short term basis (less than 30 days) or as a longer term rental or permanent residence. However, in terms of actual use, Condominiums (nontransient) most closely resemble apartment houses, with an ownership component. In addition, the index references apartment houses for the term condominium. Further, condominium units always provide complete, independent living facilities, including permanent provisions for living, sleeping, eating, cooking and sanitation. As such, condominiums contain dwelling units and not just sleeping units. Since Group R-1 occupancies are limited to residential occupancies containing sleeping units where the occupants are primarily transient in nature, it is not appropriate to classify condominiums as Group R-1 occupancies. This proposal eliminates any misinterpretation by mandating that condominiums be classified as Group R-2.

Cost Impact: Will not increase the cost of construction

This proposal will not increase construction costs, as it simply clarifies that condominium are to be deemed a R-2 occupancy.

G 39-15 : 310.4-DIGIOVANNI3814

G 40-15

310.5, 310.5.2

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

2015 International Building Code

Revise as follows:

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

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

Boarding houses (nontransient) with 16 or fewer occupants

Boarding houses (transient) with 10 or fewer occupants

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

Congregate living facilities (nontransient) with 16 or fewer occupants

Congregate living facilities (transient) with 10 or fewer occupants

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

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

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

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

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

Cost Impact: Will not increase the cost of construction

This proposal will decrease the cost of construction by further clarifying that certain owner-occupied lodging houses can be constructed under the IRC rather than the IBC and by providing increased consistency of language and application.

G 40-15 : 310.5-KULIK5031

G 41-15

310.5.2

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

2015 International Building Code

Revise as follows:

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

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

Cost Impact: Will not increase the cost of construction

As the base IRC and the IBC already require fire sprinkler protection for this type of occupancy there is no cost when a jurisdiction adopts the IRC and IBC in unamended format.

G 41-15 : 310.5.2-APFELBECK3859

G 42-15

310.6

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

2015 International Building Code

Revise as follows:

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

- Alcohol and drug centers
- Assisted living facilities
- Congregate care facilities
- Group homes*
- Halfway houses
- Residential board and care facilities
- Social rehabilitation facilities

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

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

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

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

Cost Impact: Will not increase the cost of construction

The prescriptive requirements of the IRC are generally the same or lesser cost that IBC Type 5 construction.

G 42-15 : 310.6-BALDASSARRA4269

G 43-15

311.1.1

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

2015 International Building Code

Revise as follows:

311.1.1 Accessory storage spaces. A room or space used for storage purposes that is ~~less than 100 square feet (9.3 m²) in area and~~ accessory to another occupancy shall be classified as part of that occupancy. ~~The aggregate area of such rooms or spaces shall not exceed the allowable area limits of Section 508.2.~~

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

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

Cost Impact: Will not increase the cost of construction

This change is a clarification of the code and reduction in the potential requirements. Therefore, it may be a reduction in construction cost.

G 43-15 : 311.1.1-THOMAS5290

G 44-15

311.2

Proponent: Anthony Apfelbeck, City of Altamonte Springs Building/Fire Safety Division, representing City of Altamonte Springs (ACApfelbeck@altamonte.org)

2015 International Building Code

Revise as follows:

311.2 Moderate-hazard storage, Group S-1. Storage Group S-1 occupancies are buildings occupied for storage uses that are not classified as Group S-2, including, but not limited to, storage of the following:

Aerosols, Levels 2 and 3

Aircraft hangar (storage and repair)

Bags: cloth, burlap and paper

Bamboos and rattan

Baskets

Belting: canvas and leather

Books and paper in rolls or packs

Boots and shoes

Buttons, including cloth covered, pearl or bone

Cardboard and cardboard boxes

Clothing, woolen wearing apparel

Cordage

Dry boat storage (indoor)

Furniture

Furs

Glues, mucilage, pastes and size

Grains

Horns and combs, other than celluloid

Leather

Linoleum

Lumber

Motor vehicle repair garages complying with the maximum allowable quantities of hazardous materials listed in Table 307.1(1) (see Section 406.8)

Photo engravings

Resilient flooring

Self-service storage (mini-storage)

Silks

Soaps

Sugar

Tires, bulk storage of

Tobacco, cigars, cigarettes and snuff

Upholstery and mattresses

Wax candles

Reason: This proposal clarifies that "self-service storage" facilities (otherwise known as mini-storage facilities) are an S-1 occupancy. Based on variable contents of these facilities, the S-1 occupancy classification appears to be appropriate one. By including this term within the list of 311.2, it will provide additional clarity to the code for owners, developers, designers and code officials.

Cost Impact: Will not increase the cost of construction

This proposal does not change the occupancy classification of self-storage facilities but just provides greater clarity as to the occupancy classification of S-1. Therefore, there is no cost impact.

G 45-15

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

Proponent: Joe Scibetta, representing Self

2015 International Building Code

Revise as follows:

SECTION 202 DEFINITIONS

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

Add new definition as follows:

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

Revise as follows:

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

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

C101.1 Scope. The provisions of this appendix shall apply exclusively to agricultural buildings and animal housing facilities. Such buildings shall be classified as Group U and shall include, but not be limited to, the following uses:

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

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

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

Cost Impact: Will not increase the cost of construction

No cost impact as this is simply a refinement of the existing list of Group U structures and providing a differentiation in terminology between animal housing facilities and agricultural buildings to ensure that both types of structures are addressed here.

G 46-15

312.1

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

2015 International Building Code

Revise as follows:

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

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

Reason: Unless combined with other types of facilities, such as groundskeeping offices, these buildings are typically not occupied unless equipment and supplies are being moved. These often occur at colleges and schools, where they are considered too big to be just a shed

Cost Impact: Will not increase the cost of construction

There are no cost implications. In fact, the cost of building will be less as the requirements of other sections regarding U are less stringent

G 46-15 : 312.1-KULINA4540

G 47-15

312.1

Proponent: Jeffrey Betz, AT&T, representing AT&T (jbetz@att.com)

2015 International Building Code

Revise as follows:

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

Agricultural buildings

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

Barns

Carports

Communication equipment structures with a gross floor area of less than 1,500 square feet

Fences more than 6 feet (1829 mm) in height

Grain silos, accessory to a residential occupancy

Greenhouses

Livestock shelters

Private garages

Retaining walls

Sheds

Stables

Tanks

Towers

Reason: This addition identifies the placement of communication equipment structures less than 1,500 sq ft gross into Group U. The selection of 1,500 sq ft is a typical structure size that would be visited infrequently by only authorized and knowledgeable personnel. The characteristics of "Structures housing accessory equipment that is part of a utility or communications system are often classified as Group U occupancies when there is no intent that these structures be occupied except for servicing and maintaining the equipment with the structure. A pump house for a water or sewage system or equipment building at the base of a telecommunication tower is an example of such buildings". (IBC 2009 and 2012 Code and Commentary Volume 1). This proposal memorializes the communication equipment structures under the U group and continues to require conformance to basis fire and life hazard while better identifying the occupancy and activities intended for the structure. The thousands of existing and future structures of this occupancy range from a small subterranean room, on-grade equipment housing or small communications structure visited only for equipment installation and maintenance will benefit from this clarification.

Bibliography: International Building Code and Commentary 2009 pages 3-50 and 51, 2012 page 3-40.

Cost Impact: Will not increase the cost of construction

Proposal clarifies section 312 UTILITY AND MISCELLANEOUS GROUP U to specifically include Communications Equipment Structures less than 1,500 sq ft gross into the examples of Group U. This reduces the AHJ and applicants time in clarifying the correct group for this kind of structure and eliminates potential non-required construction expenses.

G 47-15 : 312.1-BETZ5454

G 48-15

312.1, 312.1.1 (New)

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

2015 International Building Code

Revise as follows:

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

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

Add new text as follows:

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

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

The primary purpose of a greenhouse is for the propagation of plants. Many typical building requirements intended for human comfort, health, safety and welfare are not applicable or necessary for the construction or operation of greenhouses. However, this proposal is intended to clarify that some greenhouses can be used for other enterprises, such as retail business, research by schools and universities, conservation, education, display by botanical institutions holding documented collections of specialty plants, and similar activities. This proposal, along with the other proposals that modify the occupancies to include greenhouses, has created indicators to assist the designer and the code official to recognize when appropriate design distinctions should be made, and to help determine more consistently when a greenhouse should be classified as a use group other than Group U.



Greenhouse - Use Group U.

Cost Impact: Will not increase the cost of construction

THERE IS NO COST IMPACT RELATED TO THIS PROPOSAL BECAUSE THIS PROPOSAL MAINLY CLARIFIES EXISTING CODE LANGUAGE REGARDING GROUP U GREENHOUSES. THE PROPOSAL DOES NOT ADD REQUIREMENTS FOR GROUP B, E, OR M GREENHOUSES BEYOND WHAT THE CODE ALREADY REQUIRES FOR THOSE OCCUPANCIES.

G 49-15

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

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

2015 International Building Code

Delete and substitute as follows:

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

Delete without substitution:

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

Exceptions:

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

Revise as follows:

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

Exceptions:

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

402-2507.13.1 Definitions.

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

~~402.1-1507.13.2~~ Open space. .

~~402.1-2507.13.3~~ Open mall building perimeter line. .

~~402.3507.13.4~~ Lease plan. .

~~402.4507.13.5~~ Construction.

~~402.4-1507.13.5.1~~ Area and types of construction. .

~~402.4.1-1507.13.5.1.1~~ Covered and open mall buildings.

~~402.4.1-2507.13.5.1.2~~ Anchor buildings.

~~402.4.1-3507.13.5.1.3~~ Parking garage. .

~~402.4-2507.13.5.2~~ Fire-resistance-rated separation.

~~402.4.2-1507.13.5.2.1~~ Tenant separations.

~~402.4.2-2507.13.5.2.2~~ Anchor building separation.

~~402.4.2.2-1507.13.5.2.1~~ Openings between anchor building and mall.

~~402.4.2-3507.13.5.2.3~~ Parking garages.

~~402.4-3507.13.5.3~~ Open mall construction.

~~402.4.3-1507.13.5.3.1~~ Pedestrian walkways.

[F] ~~402-5507.13.6~~ Automatic sprinkler system.

~~402.6507.13.7~~ Interior finishes and features. .

~~402.6-1507.13.7.1~~ Interior finish.

~~402.6-2507.13.7.2~~ Kiosks.

~~402.6-3507.13.7.3~~ Children's play structures.

~~402.6-4507.13.7.4~~ Plastic signs.

~~402.6.4-1507.13.7.4.1~~ Area.

~~402.6.4-2507.13.7.4.2~~ Height and width.

~~402.6.4-3507.13.7.4.3~~ Location. .

402.6.4.4507.13.7.4.4 Plastics other than foam plastics.

402.6.4.4.1507.13.7.4.4.1 Encasement. .

402.6.4.5507.13.7.4.5 Foam plastics.

402.6.4.5.1507.13.7.4.5.1 Density.

402.6.4.5.2507.13.7.4.5.2 Thickness.

[F] **402.7507.13.8** Emergency systems.

[F] **402.7.1507.13.8.1** Standpipe system.

[F] **402.7.2507.13.8.2** Smoke control.

[F] **402.7.3507.13.8.3** Emergency power.

[F] **402.7.4507.13.8.4** Emergency voice/alarm communication system.

[F] **402.7.5507.13.8.5** Fire department access to equipment.

402.8507.13.9 Means of egress.

402.8.1507.13.9.1 Mall width.

402.8.1.1507.13.9.1.1 Minimum width.

402.8.2507.13.9.2 Determination of occupant load.

402.8.2.1507.13.9.2.1 Occupant formula.

402.8.2.2507.13.9.2.2 OLF range.

402.8.2.3507.13.9.2.3 Anchor buildings.

402.8.2.4507.13.9.2.4 Food courts.

402.8.3507.13.9.3 Number of means of egress.

402.8.4507.13.9.4 Arrangements of means of egress.

402.8.4.1507.13.9.4.1 Anchor building means of egress.

402.8.5507.13.9.5 Distance to exits.

402.8.6507.13.9.6 Access to exits.

402.8.6.1507.13.9.6.1 Exit passageways.

402.8.7507.13.9.7 Service areas fronting on exit passageways.

402.8.8507.13.9.8 Security grilles and doors.

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

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

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

Cost Impact: Will not increase the cost of construction

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

G 50-15

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

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

2015 International Building Code

Delete without substitution:

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

Revise as follows:

~~403-1504.3.1~~ **Applicability.** *High-rise buildings* shall comply with Sections ~~403-2504.3.2~~ through ~~403-6504.3.6~~.

Exception: The provisions of Sections ~~403-2504.3.2~~ through ~~403-6504.3.6~~ shall not apply to the following buildings and structures:

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

~~403-2504.3.2~~ **Construction.**

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

~~403-2-1504.3.2.1~~ **Reduction in fire-resistance rating.**

~~403-2-1-1504.3.2.1.1~~ **Type of construction.**

~~403-2-1-2504.3.2.1.2~~ **Shaft enclosures.**

~~403-2-2504.3.2.2~~ **Seismic considerations.**

~~403-2-3504.3.2.3~~ **Structural integrity of interior exit stairways and elevator hoistway enclosures.**

~~403-2-3-1504.3.2.3.1~~ **Wall assembly.**

~~403-2-3-2504.3.2.3.2~~ **Wall assembly materials.**

~~403-2-3-3504.3.2.3.3~~ **Concrete and masonry walls.**

~~403-2-3-4504.3.2.3.4~~ **Other wall assemblies.**

TABLE ~~403-2-4~~ 504.3.2.4 **MINIMUM BOND STRENGTH**

~~403-2-4504.3.2.4~~ **Sprayed fire-resistant materials (SFRM).**

[F] ~~403-3504.3.3~~ **Automatic sprinkler system.**

[F] ~~403-3-1504.3.3.1~~ **Number of sprinkler risers and system design.**

[F] ~~403-3-1-1504.3.3.1.1~~ **Riser location.**

[F] ~~403-3-2504.3.3.2~~ **Water supply to required fire pumps.**

[F] ~~403-3-3504.3.3.3~~ **Secondary water supply.**

[F] ~~403-3-4504.3.3.4~~ **Fire pump room.**

[F] ~~403-4504.3.4~~ **Emergency systems.**

[F] ~~403-4-1504.3.4.1~~ **Smoke detection.**

[F] ~~403-4-2504.3.4.2~~ **Fire alarm system.**

[F] ~~403-4-3504.3.4.3~~ **Standpipe system.**

[F] ~~403-4-4504.3.4.4~~ **Emergency voice/alarm communication system.**

[F] ~~403-4-5504.3.4.5~~ **Emergency responder radio coverage.**

[F] ~~403-4-6504.3.4.6~~ **Fire command.**

~~403-4-7504.3.4.7~~ **Smoke removal.**

[F] ~~403-4-8504.3.4.8~~ **Standby and emergency power.**

[F] ~~403-4-8-1504.3.4.8.1~~ **Equipment room.**

[F] ~~403-4-8-2504.3.4.8.2~~ Fuel line piping protection.

[F] ~~403-4-8-3504.3.4.8.3~~ Standby power loads.

[F] ~~403-4-8-4504.3.4.8.4~~ Emergency power loads.

~~403-5504.3.5~~ Means of egress and evacuation.

~~403-5-1504.3.5.1~~ Remoteness of interior exit stairways.

~~403-5-2504.3.5.2~~ Additional interior exit stairway.

~~403-5-3504.3.5.3~~ Stairway door operation.

~~403-5-3-1504.3.5.3.1~~ Stairway communication system.

~~403-5-4504.3.5.4~~ Smokeproof enclosures.

~~403-5-5504.3.5.5~~ Luminous egress path markings.

~~403-5-6504.3.5.6~~ Emergency escape and rescue.

~~403-6504.3.6~~ Elevators.

~~403-6-1504.3.6.1~~ Fire service access elevator.

~~403-6-2504.3.6.2~~ Occupant evacuation elevators.

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

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

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

Cost Impact: Will not increase the cost of construction

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

G 50-15 : 403-COLLINS4649

G 51-15

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

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

2015 International Building Code

Delete without substitution:

~~SECTION 404-~~ ~~ATRIUMS~~

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

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

Revise as follows:

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

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

~~404.2~~ **712.1.7.1 Use.**

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

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

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

~~404.5~~ **712.1.7.4 Smoke control.**

~~404.6~~ **712.1.7.5 Enclosure of atriums.**

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

~~404.8~~ **712.1.7.7 Interior finish.**

~~404.9~~ **712.1.7.8 Exit access travel distance.**

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

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

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

~~404.10~~ **712.1.7.9 Interior exit stairways.**

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

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

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

Cost Impact: Will not increase the cost of construction

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

G 52-15

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

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

2015 International Building Code

Delete without substitution:

~~SECTION 405- UNDERGROUND BUILDINGS~~

Revise as follows:

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

~~405-1504.5 General~~**Floors below the level of exit discharge.** The provisions of Sections ~~405-2504.5.1~~ through ~~405-9504.5.8~~ apply to building spaces having a floor level used for human occupancy more than 30 feet (9144 mm) below the finished floor of the lowest *level of exit discharge*.

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

1. One- and two-family *dwelling*s, sprinklered in accordance with Section 903.3.1.3.
2. Parking garages provided with *automatic sprinkler systems* in compliance with Section 405.3.
3. Fixed guideway transit systems.
4. *Grandstands, bleachers*, stadiums, arenas and similar facilities.
5. Where the lowest *story* is the only *story* that would qualify the building as an underground building and has an area not greater than 1,500 square feet (139 m²) and has an *occupant load* less than 10.
6. Pumping stations and other similar mechanical spaces intended only for limited periodic use by service or maintenance personnel.

~~405-2504.5.1~~ **Construction requirements.**

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

~~[F] 405-3504.5.2~~ **Automatic sprinkler system.**

~~405-4504.5.3~~ **Compartmentation.**

~~405-4-1504.5.3.1~~ **Number of compartments.**

~~405-4-2504.5.3.2~~ **Smoke barrier penetration.**

~~405-4-3504.5.3.3~~ **Elevators.**

~~405-5504.5.4~~ **Smoke control system.**

~~405-5-1504.5.4.1~~ **Control system.**

~~405-5-2504.5.4.2~~ **Compartment smoke control system.**

~~[F] 405-6504.5.5~~ **Fire alarm systems.**

~~405-7504.5.6~~ **Means of egress.**

~~405-7-1504.5.6.1~~ **Number of exits.**

~~405-7-2504.5.6.2~~ **Smokeproof enclosure.**

~~[F] 405-8504.5.7~~ **Standby and emergency power.**

~~[F] 405-8-1504.5.7.1~~ **Standby power loads.**

~~[F] 405-8-2504.5.7.2~~ **Emergency power loads.**

~~[F] 405-9504.5.8~~ **Standpipe system.**

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

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

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

Cost Impact: Will not increase the cost of construction

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

G 53-15

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

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

2015 International Building Code

Delete without substitution:

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

~~406.1 General.~~ Motor vehicle-related occupancies shall comply with Sections 406.1 through 406.6.

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

~~MECHANICAL-ACCESS OPEN PARKING GARAGES:~~

~~OPEN PARKING GARAGE:~~

~~PRIVATE GARAGE:~~

~~RAMP-ACCESS OPEN PARKING GARAGES:~~

Revise as follows:

~~406.3.12.2~~ Private garages and carports.

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

~~406.3.13~~ 2.1 Classification.

~~406.3.23~~ 2.2 Clear height.

~~406.3.33~~ 2.2.3 Garage floor surfaces.

~~406.3.43~~ 2.2.4 Separation.

~~406.3.4.13~~ 2.2.4.1 Dwelling unit separation..

~~406.3.4.23~~ 2.2.4.2 Openings prohibited.

~~406.3.4.33~~ 2.2.4.3 Ducts.

~~406.3.53~~ 2.2.5 Carports.

~~406.3.5.13~~ 2.2.5.1 Carport separation.

~~406.3.63~~ 2.2.6 Automatic garage door openers.

Reason: Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features. Requirements for motor vehicle related occupancies are located in Chapter 4 and all the limitations for where they are parts of other occupancies is found in Chapter 5, while the classification is found in Chapter 3 with limitations for when it is classified as a Group U, but no indication as to what the classification should be if it is larger than the U limitations. Moving the provisions from Chapter 4 to Chapter 3 and adding provisions for when it is not a Group U, users will more readily understand and use the code appropriately.

Cost Impact: Will not increase the cost of construction

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

G 53-15 : 406.3-COLLINS4806

G 54-15

406.4, 406.5, 406.6, 406.7, 406.8

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

2015 International Building Code

Revise as follows:

~~406-7309.3~~ Motor fuel-dispensing facilities.

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

~~406-7-1309.3.1~~ Vehicle fueling pad. .

~~406-7-2309.3.2~~ Canopies.

~~406-7.2-1309.3.2.1~~ Canopies used to support gaseous hydrogen systems.

~~406-8311.2.1~~ Repair garages.

~~406-8-1311.2.1.1~~ Mixed uses.

~~406-8-2311.2.1.2~~ Ventilation.

~~406-8-3311.2.1.3~~ Floor surface.

~~406-8-4311.2.1.4~~ Heating equipment.

[F] ~~406-8-5311.2.1.5~~ Gas detection system.

[F] ~~406-8-5-1311.2.1.5.1~~ System design.

[F] ~~406-8-5-1-1311.2.1.5.1.1~~ Gas detection system components.

[F] ~~406-8-5-2311.2.1.5.2~~ Operation.

[F] ~~406-8-5-3311.2.1.5.3~~ Failure of the gas detection system.

[F] ~~406-8-6311.2.1.6~~ Automatic sprinkler system.

~~406-4311.3.1~~ Public parking garages.

~~406-4-1311.3.1.1~~ Clear height.

~~406-4-2311.3.1.2~~ Guards.

~~406-4-3311.3.1.3~~ Vehicle barriers.

~~406-4-4311.3.1.4~~ Ramps.

~~406-4-5311.3.1.5~~ Floor surface.

~~406-4-6311.3.1.6~~ Mixed occupancy separation.

~~406-4-7311.3.1.7~~ Special hazards.

~~406-4-8311.3.1.8~~ Attached to rooms.

~~406-5311.3.2~~ Open parking garages.

~~406-5-1311.3.2.1~~ Construction.

~~406-5-2311.3.2.2~~ Openings.

~~406-5-2-1311.3.2.2.1~~ Openings below grade.

~~406-5-3311.3.2.3~~ Uses.

~~406-5-4311.3.2.4~~ Area and height.

TABLE ~~406-5-4-311.3.2.4~~ OPEN PARKING GARAGES AREA AND HEIGHT

~~406-5-4-1311.3.2.4.1~~ Single use.

~~406-5-5311.3.2.5~~ Area and height increases.

~~406-5-6311.3.2.6~~ Fire separation distance.

~~406-5-7311.3.2.7~~ Means of egress.

[F] ~~406-5-8311.3.2.8~~ Standpipe system.

~~406-5-9311.3.2.9~~ Enclosure of vertical openings.

~~406.5.10~~311.3.2.10 Ventilation.

~~406.5.11~~311.3.2.11 Prohibitions.

~~406.6~~311.3.3 Enclosed parking garages.

~~406.6.13~~11.3.3.1 Heights and areas.

~~406.6.23~~11.3.3.2 Ventilation.

[F] ~~406.6.33~~11.3.3.3 Automatic sprinkler system.

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

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

Cost Impact: Will not increase the cost of construction

By moving the provisions from Chapter 4 to Chapter 3 will not increase the cost of construction.

G 54-15 : 406-COLLINS4934

G 55-15

407, [F] 407.6, [F] 407.7, [F] 407.8, 308.3.4.3 (New), 308.4.3.2 (New)

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

2015 International Building Code

Delete without substitution:

~~SECTION 407~~ ~~GROUP I-2~~

Revise as follows:

~~407-1308.4.3~~ **General Group I-2 occupancy requirements** Occupancies in Group I-2 shall comply with the provisions of Sections ~~407-1308.4.3.1~~ through ~~407-10308.4.3.10~~ and other applicable provisions of this code.

~~407-2308.4.3.1~~ **Corridors continuity and separation.**

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

~~407-2-1308.4.3.1.1~~ **Waiting and similar areas.**

~~407-2-2308.4.3.1.2~~ **Care providers' stations.**

~~407-2-3308.4.3.1.3~~ **Psychiatric treatment areas.**

~~407-2-4308.4.3.1.4~~ **Gift shops.**

~~407-2-5308.4.3.1.5~~ **Nursing home housing units.**

~~407-2-6308.4.3.1.6~~ **Nursing home cooking facilities.**

~~407-3308.4.3.2~~ **Corridor wall construction.**

~~407-3-1308.4.3.2.1~~ **Corridor doors.**

~~407-4308.4.3.4~~ **Means of egress.**

~~407-4-1308.4.3.4.1~~ **Direct access to a corridor.**

~~407-4-1-1308.4.3.4.1.1~~ **Locking devices.**

~~407-4-2308.4.3.4.2~~ **Distance of travel.**

~~407-4-3308.4.3.4.3~~ **Projections in nursing home corridors.**

~~407-4-4308.4.3.4.4~~ **Group I-2 care suites.**

~~407-4-4-1308.4.3.4.4.1~~ **Exit access through care suites.**

~~407-4-4-2308.4.3.4.4.2~~ **Separation.**

~~407-4-4-3308.4.3.4.4.3~~ **Access to corridor.**

~~407-4-4-4308.4.3.4.4.4~~ **Doors within care suites.**

~~407-4-4-5308.4.3.4.4.5~~ **Care suites containing sleeping room areas.**

~~407-4-4-5-1308.4.3.4.4.5.1~~ **Area.**

~~407-4-4-5-2308.4.3.4.4.5.2~~ **Exit access.**

~~407-4-4-6308.4.3.4.4.6~~ **Care suites not containing sleeping rooms.**

~~407-4-4-6-1308.4.3.4.4.6.1~~ **Area.**

~~407-4-4-6-2308.4.3.4.4.6.2~~ **Exit access.**

~~407-5308.4.3.5~~ **Smoke barriers.**

~~407-5-1308.4.3.5.1~~ **Refuge area.**

~~407-5-2308.4.3.5.2~~ **Independent egress.**

~~407-5-3308.4.3.5.3~~ **Horizontal assemblies.**

[F] ~~407-6308.4.3.6~~ **Automatic sprinkler system.**

[F] ~~407-7308.4.3.7~~ **Fire alarm system.**

[F] ~~407-8308.4.3.8~~ **Automatic fire detection.**

~~407-9308.4.3.9~~ **Secured yards.**

~~407-10308.4.3.10~~ **Electrical systems.**

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

code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features.

I-2 criteria in Chapter 4 are typical of the occupancy criteria that provide a summary of various provisions from the code for one occupancy. While an I-2 is somewhat special, many of these criteria are well recognized in the code for various occupancies. To make the application of these provisions obvious to the code user, their placement in Chapter 3 along with the classification information will provide greater clarity to their necessity by the code users.

Cost Impact: Will not increase the cost of construction

By making the special provisions for an I-2 occupancy obvious, the cost of construction should be reduced.

G 55-15 : 407-COLLINS4807

G 56-15

408, 408.1, 408.2, 408.3, 408.4, 408.5, 408.6, 408.7, 408.8, 408.9, [F] 408.10, [F] 408.11

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

2015 International Building Code

Delete without substitution:

~~SECTION 408- GROUP I-3~~

Revise as follows:

~~408-1308.5.6~~ **General Group I-3 occupancy requirements** Occupancies in Group I-3 shall comply with the provisions of Sections ~~408-1308.5.6.1~~ through ~~408-1308.5.6.11~~ and other applicable provisions of this code (~~see Section 308.5~~).

~~408-1308.5.6.1~~ **Definitions.**

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

~~408-2308.5.6.2~~ **Other occupancies.**

~~408-3308.5.6.3~~ **Means of egress.**

~~408-3308.5.6.3.1~~ **Door width.**

~~408-3308.5.6.3.2~~ **Sliding doors.**

~~408-3308.5.6.3.3~~ **Guard tower doors.**

~~408-3308.5.6.3.4~~ **Spiral stairways.**

~~408-3308.5.6.3.5~~ **Ships ladders.**

~~408-3308.5.6.3.6~~ **Exit discharge.**

~~408-3308.5.6.3.7~~ **Sallyports.**

~~408-3308.5.6.3.8~~ **Interior exit stairway and ramp construction.**

~~408-4308.5.6.4~~ **Locks.**

~~408-4308.5.6.4.1~~ **Remote release.**

[F] ~~408-4308.5.6.4.2~~ **Power-operated doors and locks.**

~~408-4308.5.6.4.3~~ **Redundant operation.**

~~408-4308.5.6.4.4~~ **Relock capability.**

~~408-5308.5.6.5~~ **Protection of vertical openings.**

~~408-5308.5.6.5.1~~ **Floor openings.**

~~408-5308.5.6.5.2~~ **Shaft openings in communicating floor levels.**

~~408-6308.5.6.6~~ **Smoke barrier.**

~~408-6308.5.6.6.1~~ **Smoke compartments.**

~~408-6308.5.6.6.2~~ **Refuge area.**

~~408-6308.5.6.6.3~~ **Independent egress.**

~~408-7308.5.6.7~~ **Security glazing.**

~~408-8308.5.6.8~~ **Subdivision of resident housing areas.**

~~408-8308.5.6.8.1~~ **Occupancy Conditions 3 and 4.**

~~408-8308.5.6.8.2~~ **Occupancy Condition 5.**

~~408-8308.5.6.8.3~~ **Openings in room face.**

~~408-8308.5.6.8.4~~ **Smoke-tight doors.**

~~408-9308.5.6.9~~ **Windowless buildings.**

[F] ~~408-10308.5.6.10~~ **Fire alarm system.**

[F] ~~408-11308.5.6.11~~ **Automatic sprinkler system.**

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

I-3 criteria in Chapter 4 are typical of the occupancy criteria that provide a summary of various provisions from the code for one occupancy. While an I-3 is somewhat special,

many of these criteria are well recognized in the code for various occupancies. To make the application of these provisions obvious to the code user, their placement in Chapter 3 along with the classification information will provide greater clarity to their necessity by the code users.

Cost Impact: Will not increase the cost of construction

Clarifying how the code is to be used for particular occupancies will not increase the cost of construction.

G 56-15 : 408-COLLINS4808

G 57-15

[F] 307.1.1, 409, 409.1, 409.1.1, 409.2, 409.3, 409.3.1, 409.3.2, 409.3.3, 409.4, 409.5

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

2015 International Building Code

Revise as follows:

[F] 307.1.1 **Uses other than Group H.** An occupancy that stores, uses or handles hazardous materials as described in one or more of the following items shall not be classified as Group H, but shall be classified as the occupancy that it most nearly resembles.

1. Buildings and structures occupied for the application of flammable finishes, provided that such buildings or areas conform to the requirements of Section 416 and the *International Fire Code*.
2. Wholesale and retail sales and storage of flammable and combustible liquids in mercantile occupancies conforming to the *International Fire Code*.
3. Closed piping system containing flammable or combustible liquids or gases utilized for the operation of machinery or equipment.
4. Cleaning establishments that utilize combustible liquid solvents having a flash point of 140°F (60°C) or higher in closed systems employing equipment *listed* by an *approved* testing agency, provided that this occupancy is separated from all other areas of the building by 1-hour *fire barriers* constructed in accordance with Section 707 or 1-hour *horizontal assemblies* constructed in accordance with Section 711, or both.
5. Cleaning establishments that utilize a liquid solvent having a flash point at or above 200°F (93°C).
6. Liquor stores and distributors without bulk storage.
7. Refrigeration systems.
8. The storage or utilization of materials for agricultural purposes on the premises.
9. Stationary batteries utilized for facility emergency power, uninterruptable power supply or telecommunication facilities, provided that the batteries are provided with safety venting caps and *ventilation* is provided in accordance with the *International Mechanical Code*.
10. Corrosive personal or household products in their original packaging used in retail display.
11. Commonly used corrosive building materials.
12. Buildings and structures occupied for aerosol storage shall be classified as Group S-1, provided that such buildings conform to the requirements of the *International Fire Code*.
13. Display and storage of nonflammable solid and nonflammable or noncombustible liquid hazardous materials in quantities not exceeding the maximum allowable quantity per *control area* in Group M or S occupancies complying with Section 414.2.5.
14. The storage of black powder, smokeless propellant and small arms primers in Groups M and R-3 and special industrial explosive devices in Groups B, F, M and S, provided such storage conforms to the quantity limits and requirements prescribed in the *International Fire Code*.
15. Motion picture projection rooms in which ribbon-type cellulose acetate or other safety film is utilized in conjunction with electric arc, xenon or other light-source projection equipment that develops hazardous gases, dust or radiation. Where cellulose nitrate film is utilized or stored, such rooms shall comply with NFPA 40. All such projection rooms, appertenant electrical equipment, such as rheostats, transformers and generators shall be enclosed in an enclosure meeting the requirements of Section 307.1.3.

Delete without substitution:

~~SECTION 409- MOTION PICTURE PROJECTION ROOMS~~

Revise as follows:

~~409-1307.1.3~~ **General-Motion picture projection rooms** The provisions of Sections ~~409-1307.1.3.1~~ through ~~409-5307.1.3.5~~ shall apply to rooms in which ribbon-type cellulose acetate or other safety film is utilized in conjunction with electric arc, xenon or other light-source projection equipment that develops hazardous gases, dust or radiation. Where cellulose nitrate film is utilized or stored, such rooms shall comply with NFPA 40.

~~409-1-1307.1.3.1~~ **Projection room required.**

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

~~409-2307.1.3.2~~ **Construction of projection rooms.**

~~409-3307.1.3.3~~ **Projection room and equipment ventilation.**

~~409-3-1307.1.3.3.1~~ **Supply air.**

~~409-3-2307.1.3.3.2~~ **Exhaust air.**

~~409-3-3307.1.3.3.3~~ **Projection machines.**

~~409-4307.1.3.4~~ **Lighting control.**

~~409-5307.1.3.5~~ **Miscellaneous equipment.**

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

Motion picture projection rooms as classified by this special section are indicated as having hazardous materials or producing them. How those are treated is addressed in part in Chapters 3 and 4. This change consolidates them into one section where a great deal of information regarding the application of the codes for hazardous materials is located making it easier for the code user to understand how to treat these spaces.

Cost Impact: Will not increase the cost of construction

This correlation of provisions for motion picture rooms will not increase the cost of construction.

G 57-15 : 409-COLLINS4810

G 58-15

410, 410.1, 410.2, 410.3, 410.4, 410.5, 410.6, [F] 410.7, [F] 410.8, 602.6 (New),

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

2015 International Building Code

Delete without substitution:

~~SECTION 410- STAGES, PLATFORMS AND TECHNICAL PRODUCTION AREAS~~

Add new text as follows:

602.6 Stages, platforms and technical production areas The provisions of Sections 602.6.1 through 602.6.8 shall apply to all parts of buildings and structures that contain stages or platforms and similar appurtenances as herein defined.

Revise as follows:

~~410-1602.6.1~~ **Applicability.** The provisions of Sections ~~410-1602.6.1~~ through ~~410-8602.6.8~~ shall apply to all parts of buildings and structures that contain stages or platforms and similar appurtenances as herein defined.

~~410-2602.6.2~~ **Definitions.**

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

~~410-3602.6.3~~ **Stages.**

~~410-3-1602.6.3.1~~ **Stage construction.**

~~410-3-1-1602.6.3.1.1~~ **Stage height and area.**

~~410-3-2602.6.3.2~~ **Technical production areas: galleries, gridirons and catwalks.**

~~410-3-3602.6.3.3~~ **Exterior stage doors.**

~~410-3-4602.6.3.4~~ **Proscenium wall.**

~~410-3-5602.6.3.5~~ **Proscenium curtain.**

~~410-3-6602.6.3.6~~ **Scenery.**

~~410-3-7602.6.3.7~~ **Stage ventilation.**

~~410-3-7-1602.6.3.7.1~~ **Roof vents.**

[F] ~~410-3-7-2602.6.3.7.2~~ **Smoke control.**

~~410-4602.6.4~~ **Platform construction.**

~~410-4-1602.6.4.1~~ **Temporary platforms.**

~~410-5602.6.5~~ **Dressing and appurtenant rooms.**

~~410-5-1602.6.5.1~~ **Separation from stage.**

~~410-5-2602.6.5.2~~ **Separation from each other.**

~~410-6602.6.6~~ **Means of egress.**

~~410-6-1602.6.6.1~~ **Arrangement.**

~~410-6-2602.6.6.2~~ **Stairway and ramp enclosure.**

~~410-6-3602.6.6.3~~ **Technical production areas.**

~~410-6-3-1602.6.6.3.1~~ **Number of means of egress.**

~~410-6-3-2602.6.6.3.2~~ **Exit access travel distance.**

~~410-6-3-3602.6.6.3.3~~ **Two means of egress.**

~~410-6-3-4602.6.6.3.4~~ **Path of egress travel.**

~~410-6-3-5602.6.6.3.5~~ **Width.**

[F] ~~410-7602.6.7~~ **Automatic sprinkler system.**

[F] ~~410-8602.6.8~~ **Standpipes.**

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

The provisions in the code for stages, platforms and technical production areas in Chapter 4 includes elements of construction, wall criteria and opening protection methods required because of the hazards present. Moving these requirements to Chapter 6 to coincide with the construction requirements of buildings will make it obvious to users of the code how such features are to be integrated with the building construction limitations in the code.

Cost Impact: Will not increase the cost of construction

Moving these provisions from Chapter 4 to Chapter 6 will not change the cost of construction.

G 58-15 : 410-COLLINS4811

G 59-15

411, 411.1, 411.2, [F] 411.3, [F] 411.4, [F] 411.5, [F] 411.6, 411.7, 411.7.1, 411.8, 304.3 (New)

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

2015 International Building Code

Delete without substitution:

~~SECTION 411— SPECIAL AMUSEMENT BUILDINGS~~

Revise as follows:

~~411.1303.7 General~~**Special amusement buildings.** *Special amusement buildings* having an *occupant load* of 50 or more shall comply with the requirements for the appropriate Group A occupancy and Sections ~~411.1303.7.1~~ through ~~411.8303.7.7~~. ~~Special amusement buildings having an occupant load of less than 50 shall comply with the requirements for a Group B occupancy and Sections 411.1 through 411.8.~~

Exception: *Special amusement buildings* or portions thereof that are without walls or a roof and constructed to prevent the accumulation of smoke need not comply with this section.

For flammable *decorative materials*, see the *International Fire Code*.

~~411.2303.7.1~~ Definition.

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

[F] ~~411.3303.7.2~~ Automatic fire detection.

[F] ~~411.4303.7.3~~ Automatic sprinkler system.

[F] ~~411.5303.7.4~~ Alarm.

[F] ~~411.6303.7.5~~ Emergency voice/alarm communications system.

~~411.7303.7.6~~ Exit marking.

~~411.7.1303.7.6.1~~ Photoluminescent exit signs.

~~411.8303.7.7~~ Interior finish.

Add new text as follows:

304.3 Special amusement buildings. *Special amusement buildings* having an *occupant load* of less than 50 shall comply with the requirements for a Group B occupancy and Sections 303.7.1 through 303.7.7.

Exception: *Special amusement buildings* or portions thereof that are without walls or a roof and constructed to prevent the accumulation of smoke need not comply with this section.

For flammable *decorative materials*, see the *International Fire Code*.

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

Special amusement buildings with more than 50 occupants or more are classified in Section 411.1 as being in an A occupancy. Those that are less than 50 are part of the B occupancy. This same requirements apply to assembly spaces within an office building, but are clearly delineated in Sections 301 and 304. With this change the same clarity for special amusement facilities will be brought to the code.

Cost Impact: Will not increase the cost of construction

By moving these provisions out of Chapter 4 into Chapter 3, no change in the cost of construction will result.

G 59-15 : 411-COLLINS4813

G 60-15

412, 412.1, 412.2, 412.3.1, 412.3, 412.3.2, 412.3.3, 412.3.4, 412.3.4.1, [F] 412.3.5, 412.3.6, 412.3.7, 412.3.7.1, 412.3.8, 412.7, 412.7.1, [F] 412.6, [F] 412.6.1, 412.6.2, [F] 412.6.3, [F] 412.6.4, [F] 412.6.5, [F] 412.6.6, 412.4, 412.4.1, 412.4.2, 412.4.3, 412.4.4, 412.4.5, [F] 412.4.6, [F] 412.4.6.1, [F] 412.4.6.2, 412.5, 412.5.1, 412.5.2, [F] 412.5.3, 412.5.4, 412.5.5, [F] 412.8, [F] 412.8.1, [F] 412.8.2, [F] 412.8.3, [F] 412.8.4, [F] 412.8.5

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

2015 International Building Code

Delete without substitution:

~~SECTION 412-~~ ~~AIRCRAFT-RELATED OCCUPANCIES~~

~~412.1 General.~~ Aircraft-related occupancies shall comply with Sections 412.1 through 412.8 and the International Fire Code.

~~412.2 Definitions.~~

Revise as follows:

~~412.3.3~~ 412.3.2 **Airport traffic control towers.**

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

~~TABLE 412.3.1~~ 304.3.2.1 **HEIGHT LIMITATIONS FOR AIRPORT TRAFFIC CONTROL TOWERS**

~~412.3.1~~ 304.3.2.1 **Type of construction.** .

~~412.3.2~~ 304.3.2.2 **Stairways.**

~~412.3.3~~ 304.3.2.3 **Exit access.**

~~412.3.4~~ 304.3.2.4 **Number of exits.**

~~412.3.4.1~~ 304.3.2.4.1 **Interior finish.**

[F] ~~412.3.5~~ 304.3.2.5 **Automatic fire detection systems.**

~~412.3.6~~ 304.3.2.6 **Automatic sprinkler system.**

~~412.3.7~~ 304.3.2.7 **Elevator protection.** .

~~412.3.7.1~~ 304.3.2.7.1 **Elevators for occupant evacuation.**

~~412.3.8~~ 304.3.2.8 **Accessibility.**

~~TABLE 412.7.3~~ 306.2.1 **AIRCRAFT MANUFACTURING EXIT ACCESS TRAVEL DISTANCE**

~~412.7.3~~ 306.2.1 **Aircraft manufacturing facilities.** In buildings used for the manufacturing of aircraft, exit access travel distances indicated in Section 1017.1 shall be increased in accordance with the following:

1. The building shall be of Type I or II construction.
2. Exit access travel distance shall not exceed the distances given in Table ~~412.7.3~~ 306.2.1.

~~412.7.1~~ 306.2.1.1 **Ancillary areas.**

[F] ~~412.6.3~~ 307.4.1 **Aircraft paint hangars.** Aircraft painting operations where flammable liquids are used in excess of the maximum allowable quantities per *control area* listed in Table 307.1(1) shall be conducted in an aircraft paint hangar that complies with the provisions of Sections ~~412.6.1~~ 307.4.1.1 through ~~412.6.6~~ 307.4.1.6.

[F] ~~412.6.1~~ 307.4.1.1 **Occupancy group.**

~~412.6.2~~ 307.4.1.2 **Construction.**

[F] ~~412.6.3~~ 307.4.1.3 **Operations.**

[F] ~~412.6.4~~ 307.4.1.4 **Storage.**

[F] ~~412.6.5~~ 307.4.1.5 **Fire suppression.**

[F] ~~412.6.6~~ 307.4.1.6 **Ventilation.**

~~412.4~~ 311.2.1 **Aircraft hangars.** ~~Aircraft hangars~~ All aircraft hangars shall be in accordance with 311.2.1.1 through 311.2.1.6. In addition, aircraft

painting hangers, manufacturing hangers and helipads shall be in accordance with Sections 412.4.1 through 412.4.6. Sections 311.3, 311.4 and 311.5 respectively.

~~412.4.1~~311.2.1.1 Exterior walls.

~~412.4.2~~311.2.1.2 Basements.

~~412.4.3~~311.2.1.3 Floor surface.

~~412.4.4~~311.2.1.4 Heating equipment.

~~412.4.5~~311.2.1.5 Finishing.

[F] ~~412.4.6~~311.2.1.6 Fire suppression.

TABLE [F] 311.2.1.6
HANGAR FIRE SUPPRESSION REQUIREMENTS^{a,b,c}

[F] ~~412.4.6.1~~311.2.1.6.1 Hazardous operations.

[F] ~~412.4.6.2~~311.2.1.6.2 Separation of maximum single fire areas.

~~412.5.1~~312.7 Residential aircraft hangars. *Residential aircraft hangars* shall comply with Sections ~~412.5.1~~312.7.1 through ~~412.5.5~~312.7.5.

~~412.5.1~~312.7.1 Fire separation.

~~412.5.2~~312.7.2 Egress.

[F] ~~412.5.3~~312.7.3 Smoke alarms.

~~412.5.4~~312.7.4 Independent systems. .

~~412.5.5~~312.7.5 Height and area limits.

[F] ~~412.8.1~~510.10 Heliports and helistops. *Heliports and helistops* shall be permitted to be erected on buildings or other locations where they are constructed in accordance with Sections ~~412.8.1~~412.8.5, 510.10.1 through 510.10.5

[F] ~~412.8.1~~510.10.1 Size. *No change to text.*

[F] ~~412.8.2~~510.10.2 Design.

[F] ~~412.8.3~~510.10.3 Means of egress.

[F] ~~412.8.4~~510.10.4 Rooftop heliports and helistops.

[F] ~~412.8.5~~510.10.5 Standpipe system.

Reason: Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features. Aircraft related occupancies involves a broad number of applications. Aircraft control towers are listed as a B occupancy and items specific to them have been move to this location. Other elements of Section 412 include hangers and manufacturing which are part of the storage occupancies, as well as heliports and helistops that are addressed as facilities on a rooftop. Those requirements are moved to the storage parts of the code and rooftop structures which include them for clarification.

Cost Impact: Will not increase the cost of construction

These provisions are moved for clarification with no technical changes and should not affect the cost of construction.

G 60-15 : 412-COLLINS4814

G 61-15

412, 412.4, 412.4.1, 412.4.2, 412.4.3, 412.4.4, 412.4.5, [F] 412.4.6, [F] 412.4.6.1, [F] 412.4.6.2

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

2015 International Building Code

Delete without substitution:

SECTION ~~412~~ AIRCRAFT-RELATED OCCUPANCIES

Revise as follows:

~~412.4.3~~311.2.1 **Aircraft hangars.** Aircraft hangars shall be in accordance with Sections ~~412.4.1~~311.2.1.1 through ~~412.4.6~~311.2.1.6.

~~412.4.1~~311.2.1.1 **Exterior walls.**

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

~~412.4.2~~311.2.1.2 **Basements.**

~~412.4.3~~311.2.1.3 **Floor surface.**

~~412.4.4~~311.2.1.4 **Heating equipment.**

~~412.4.5~~311.2.1.5 **Finishing.**

[F] ~~412.4.6~~311.2.1.6 **Fire suppression.**

TABLE [F] ~~412.4.6~~ 311.2.1.6 HANGAR FIRE SUPPRESSION REQUIREMENTS^{a,b,c}

[F] ~~412.4.6.1~~311.2.1.6.1 **Hazardous operations.**

[F] ~~412.4.6.2~~311.2.1.6.2 **Separation of maximum single fire areas.**

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

By moving the provisions in Chapter 4 for aircraft hangers into the area limits in Chapter 3, the triggers and allowances for malls will be clear and obvious choices. Correlation of references to new code locations are not included in the proposal but need to be provided by the editorial staff.

Cost Impact: Will not increase the cost of construction

Simply moving the technical requirements from Chapter 4 to Chapter 3 does not change their application and will not increase the cost of construction.

G 61-15 : 412-COLLINS4967

G 62-15

413, 413.1, 413.2

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

2015 International Building Code

Delete without substitution:

~~SECTION 413- COMBUSTIBLE STORAGE~~

Revise as follows:

~~413-1311.2.1 General~~**High-piled stock or rack storage.** High-piled stock or rack storage in any occupancy group shall comply with the *International Fire Code*.

~~413-2311.2.2~~ **Attic, under-floor and concealed spaces.**

(The text of this section would be unchanged except to update section references.)

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

Provisions of the code for high-piles stock or rack storage are being moved to the occupancy sections which include the criteria for these conditions of storage and will provide a single location for users to find the requirements for this condition.

Cost Impact: Will not increase the cost of construction

The provisions for storage are not being changed and the new location should not create any additional cost of construction.

G 62-15 : 413-COLLINS4816

G 63-15

414, [F] 414.1, [F] 414.1.1, [F] 414.1.2, [F] 414.1.2.1, [F] 414.1.3, [F] 414.2, [F] 414.2.1, [F] 414.2.2, [F] 414.2.3, [F] 414.2.4, [F] 414.2.5, [F] 414.3, [F] 414.4, [F] 414.5, [F] 414.5.1, [F] 414.5.2, [F] 414.5.2.1, [F] 414.5.2.2, [F] 414.5.3, [F] 414.6, [F] 414.6.1, [F] 414.6.1.1, [F] 414.6.1.2, [F] 414.6.1.3

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

2015 International Building Code

Delete without substitution:

~~SECTION 414~~ ~~HAZARDOUS MATERIALS~~

Revise as follows:

[F] ~~414.1~~307.9 **General.** The provisions of Sections ~~414.1~~307.9.1 through ~~414.6~~307.9.6 shall apply to buildings and structures occupied for the manufacturing, processing, dispensing, use or storage of hazardous materials.

[F] ~~414.1.1~~307.9.1.1 **Other provisions.**

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

[F] ~~414.1.2~~307.9.1.2 **Materials.**

[F] ~~414.1.2.1~~307.9.1.2.1 **Aerosols.**

[F] ~~414.1.3~~307.9.1.3 **Information required.**

[F] ~~414.2~~307.9.2 **Control areas.**

[F] ~~414.2.1~~307.9.2.1 **Construction requirements.**

TABLE [F] ~~414.2.2~~ 307.9.2.2 DESIGN AND NUMBER OF CONTROL AREAS

[F] ~~414.2.2~~307.9.2.2 **Percentage of maximum allowable quantities.**

[F] ~~414.2.3~~307.9.2.3 **Number.**

[F] ~~414.2.4~~307.9.2.4 **Fire-resistance-rating requirements.**

[F] ~~414.2.5~~307.9.2.5 **Hazardous material in Group M display and storage areas and in Group S storage areas.**

TABLE [F] ~~414.2.5(1)~~ 307.9.2.5 (1) MAXIMUM ALLOWABLE QUANTITY OF FLAMMABLE AND COMBUSTIBLE LIQUIDS IN WHOLESALE AND RETAIL SALES OCCUPANCIES PER CONTROL AREA^a

TABLE [F] ~~414.2.5(2)~~ 307.9.2.5(2) MAXIMUM ALLOWABLE QUANTITY PER INDOOR AND OUTDOOR CONTROL AREA IN GROUP M AND S OCCUPANCIES NONFLAMMABLE SOLIDS AND NONFLAMMABLE AND NONCOMBUSTIBLE LIQUIDS^{d,e,f}

[F] ~~414.3~~307.9.3 **Ventilation.**

[F] ~~414.4~~307.9.4 **Hazardous material systems.**

[F] ~~414.5~~307.9.5 **Inside storage, dispensing and use.**

TABLE [F] ~~414.5.1~~ 307.9.5.1 EXPLOSION CONTROL REQUIREMENTS^{a, h}

[F] ~~414.5.1~~307.9.5.1 **Explosion control.**

[F] ~~414.5.2~~307.9.5.2 **Emergency or standby power.**

[F] ~~414.5.2.1~~307.9.5.2.1 **Exempt applications.**

[F] ~~414.5.2.2~~307.9.5.2.2 **Fail-safe engineered systems.**

[F] ~~414.5.3~~307.9.5.3 **Spill control, drainage and containment.**

[F] ~~414.6~~307.9.6 **Outdoor storage, dispensing and use.**

[F] ~~414.6.1~~307.9.6.1 **Weather protection.**

[F] ~~414.6.1.1~~307.9.6.1.1 **Walls.**

[F] ~~414.6.1.2~~307.9.6.1.2 **Separation distance.**

[F] 414.6.1-3307.9.6.1.3 Noncombustible construction.

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

Provisions of the code for manufacturing, processing, dispensing, use or storage are being moved to the occupancy sections which include the criteria for these conditions and will provide a single location for users to find the requirements for this condition.

Cost Impact: Will not increase the cost of construction

Because the technical provisions of the code are not being changed, but simply moved, there is no impact on the cost of construction.

G 63-15 : [F] 414-COLLINS4817

G 64-15

[F] 307.2, 307.6.1 (New), [F] 415.2, [F] 415.1, [F] 415.3, [F] 415.4, [F] 415.5, [F] 415.6, [F] 415.7, [F] 415.8, [F] 415.9, [F] 415.10, [F] 415.11

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

2015 International Building Code

Delete and substitute as follows:

~~SECTION 415- GROUPS H-1, H-2, H-3, H-4 AND H-5~~

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

~~CONTINUOUS GAS DETECTION SYSTEM.
DETACHED BUILDING.
EMERGENCY CONTROL STATION.
EXHAUSTED ENCLOSURE.
FABRICATION AREA.
FLAMMABLE VAPORS OR FUMES.
GAS CABINET.
GASROOM.
HAZARDOUS PRODUCTION MATERIAL (HPM).
HPM-FLAMMABLE LIQUID.
HPM-ROOM.
IMMEDIATELY DANGEROUS TO LIFE AND HEALTH (IDLH).
LIQUID.
LIQUID STORAGE ROOM.
LIQUID USE, DISPENSING AND MIXING ROOM.
LOWER FLAMMABLE LIMIT (LFL).
NORMAL TEMPERATURE AND PRESSURE (NTP).
PHYSIOLOGICAL WARNING THRESHOLD LEVEL.
SERVICE CORRIDOR.
SOLID.
STORAGE, HAZARDOUS MATERIALS.
USE (MATERIAL).
WORKSTATION.~~

Revise as follows:

~~[F] 415.1307.1.3~~ **Scope. General provisions of H-1, H-2, H-3, H-4 and H-5 occupancies** The provisions of Sections ~~415.1307.1.3.1~~ through ~~415.1307.1.3.3~~ shall apply to the Group H occupancy buildings where storage and use of hazardous materials occurs in excess of the maximum allowable quantities per *control area* listed in Section 307.1. Buildings and structures with an occupancy in Group H shall also comply with the applicable provisions of Section 414 and the *International Fire Code*. Specific Group H occupancies shall comply with Sections 307.3, 307.4, 307.5, 307.6 and 307.7 as applicable.

~~[F] 415.3307.1.3.1~~ Automatic fire detection systems.

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

~~[F] 415.4307.1.3.2~~ Automatic sprinkler system.

~~[F] 415.5307.1.3.3~~ Emergency alarms.

~~[F] 415.5.1307.1.3.3.1~~ Storage.

~~[F] 415.5.2307.1.3.3.2~~ Dispensing, use and handling.

~~[F] 415.5.3307.1.3.3.3~~ Supervision.

~~[F] 415.5.4307.1.3.3.4~~ Emergency alarm systems.

~~[F] 415.6307.1.3.4~~ Fire separation distance.

~~[F] 415.6.1307.1.3.4.1~~ Group H occupancy minimum fire separation distance.

~~[F] 415.6.1.1307.1.3.4.1.1~~ Group H-1.

~~[F] 415.6.1.2307.1.3.4.1.2~~ Group H-2.

~~[F] 415.6.1.3307.1.3.4.1.3~~ Groups H-2 and H-3.

~~[F] 415.6.1.4307.1.3.4.1.4~~ Explosive materials.

~~TABLE [F] 415.6.2 307.1.3.4.2 DETACHED BUILDING REQUIRED~~

~~[F] 415.6.2307.1.3.4.2~~ Detached buildings for Group H-1, H-2 or H-3 occupancy.

[F] 415.6-2-1307.1.3.4.2.1 Wall and opening protection.

[F] 307.2 Definitions. The following terms are defined in Chapter 2:

AEROSOL

Level 1 aerosol products.

Level 2 aerosol products.

Level 3 aerosol products.

AEROSOL CONTAINER.

BALED COTTON.

BALED COTTON, DENSELY PACKED.

BARRICADE.

Artificial barricade.

Natural barricade.

BOILING POINT.

CLOSED SYSTEM.

COMBUSTIBLE DUST.

COMBUSTIBLE FIBERS.

COMBUSTIBLE LIQUID.

Class II.

Class IIIA.

Class IIIB.

COMPRESSED GAS.

CONTINUOUS GAS DETECTION SYSTEM.

CONTROL AREA.

CORROSIVE.

CRYOGENIC FLUID.

DAY BOX.

DEFLAGRATION.

DETACHED BUILDING.

DETONATION.

DISPENSING.

EMERGENCY CONTROL STATION.

EXHAUSTED ENCLOSURE.

EXPLOSION.

EXPLOSIVE.

High explosive.

Low explosive.

Mass-detonating explosives.

UN/DOTn Class 1 explosives.

Division 1.1.

Division 1.2.

Division 1.3.

Division 1.4.

Division 1.5.

Division 1.6.

FABRICATION AREA.

FIREWORKS.

Fireworks, 1.3G.

Fireworks, 1.4G.

FLAMMABLE GAS.

FLAMMABLE LIQUEFIED GAS.

FLAMMABLE LIQUID.

Class IA.

Class IB.

Class IC.

FLAMMABLE MATERIAL.

FLAMMABLE SOLID.

FLAMMABLE VAPORS OR FUMES.

FLASH POINT.

GAS CABINET.

GASROOM.

HANDLING.

HAZARDOUS MATERIALS.

HAZARDOUS PRODUCTION MATERIAL (HPM).

HEALTH HAZARD.

HIGHLY TOXIC.

HPM FLAMMABLE LIQUID.

HPM ROOM.

IMMEDIATELY DANGEROUS TO LIFE AND HEALTH (IDLH).

INCOMPATIBLE MATERIALS.

INERT GAS.

LIQUID.

LIQUID STORAGE ROOM.

LIQUID USE, DISPENSING AND MIXING ROOM.

LOWER FLAMMABLE LIMIT (LFL).
NORMAL TEMPERATURE AND PRESSURE (NTP).
 OPEN SYSTEM.
 OPERATING BUILDING.
 ORGANIC PEROXIDE.
 Class I.
 Class II.
 Class III.
 Class IV.
 Class V.
 Unclassified detonable.
 OXIDIZER.
 Class 4.
 Class 3.
 Class 2.
 Class 1.
 OXIDIZING GAS.
 PHYSICAL HAZARD.
PHYSIOLOGICAL WARNING THRESHOLD LEVEL.
 PYROPHORIC.
 PYROTECHNIC COMPOSITION.
SERVICE CORRIDOR.
SOLID.
STORAGE, HAZARDOUS MATERIALS.
 TOXIC.
 UNSTABLE (REACTIVE) MATERIAL.
 Class 4.
 Class 3.
 Class 2.
 Class 1.
USE (MATERIAL).
 WATER-REACTIVE MATERIAL.
 Class 3.
 Class 2.
 Class 1.
WORKSTATION.

[F] 415-7307.3.2 Special provisions for Group H-1 occupancies.

[F] 415-7-1307.3.2.1 Floors in storage rooms.

[F] 415-8307.4.1 Special provisions for Group H-2 and H-3 occupancies.

[F] 415-8-1307.4.1.1 Multiple hazards.

[F] 415-8-2307.4.1.2 Separation of incompatible materials.

[F] 415-8-3307.4.1.3 Water reactives.

[F] 415-8-4307.4.1.4 Floors in storage rooms.

[F] 415-8-5307.4.1.5 Waterproof room.

[F] 415-9307.4.2 Group H-2 occupancy requirements.

[F] 415-9-1307.4.2.1 Flammable and combustible liquids.

[F] 415-9-1-1307.4.2.1.1 Mixed occupancies.

[F] 415-9-1-1-1307.4.2.1.1.1 Height exception.

[F] 415-9-1-2307.4.2.1.2 Tank protection.

[F] 415-9-1-3307.4.2.1.3 Tanks.

[F] 415-9-1-4307.4.2.1.4 Leakage containment.

[F] 415-9-1-5307.4.2.1.5 Leakage alarm.

[F] 415-9-1-6307.4.2.1.6 Tank vent.

[F] 415-9-1-7307.4.2.1.7 Room ventilation.

[F] 415-9-1-8307.4.2.1.8 Explosion venting.

[F] 415-9-1-9307.4.2.1.9 Tank openings other than vents.

[F] 415-9-2307.4.2.2 Liquefied petroleum gas facilities.

[F] 415-9-3307.4.2.3 Dry cleaning plants.

[F] ~~415.10~~307.5 Groups H-3 and H-4. Group H-3 occupancies shall be constructed in accordance with Section 307.4.1. Groups H-3 and H-4 shall be constructed in accordance with the applicable provisions of this ~~code~~section and the *International Fire Code*.

[F] ~~415.10-1307.5.1~~ Flammable and combustible liquids.

[F] ~~415.10-2307.5.2~~ Gas rooms.

[F] ~~415.10-3307.5.3~~ Floors in storage rooms.

[F] ~~415.10-4307.5.4~~ Separation-highly toxic solids and liquids.

Add new text as follows:

307.6.1 Provisions of H-4 occupancies Group H-4 occupancies shall be constructed in accordance with Section 308.5.1

Revise as follows:

[F] ~~415.11~~307.7.1 Group H-5. In addition to the requirements set forth elsewhere in this code, Group H-5 shall comply with the provisions of Sections ~~415.11-1307.7.1.1~~ through ~~415.11-1307.7.1.11~~ and the *International Fire Code*.

[F] ~~415.11-1307.7.1.1~~ Fabrication areas.

[F] ~~415.11.1-1307.7.1.1.1~~ Hazardous materials.

[F] ~~415.11.1.1-1307.7.1.1.1.1~~ Aggregate quantities.

TABLE [F] ~~415.11.1.1-1307.7.1.1.1.1~~
QUANTITY LIMITS FOR HAZARDOUS MATERIALS IN A SINGLE FABRICATION AREA IN GROUP H-5^a

[F] ~~415.11.1.1-2307.7.1.1.1.2~~ Hazardous production materials.

[F] ~~415.11.1-2307.7.1.1.2~~ Separation.

[F] ~~415.11.1-3307.7.1.1.3~~ Location of occupied levels.

[F] ~~415.11.1-4307.7.1.1.4~~ Floors.

[F] ~~415.11.1-5307.7.1.1.5~~ Shafts and openings through floors.

[F] ~~415.11.1-6307.7.1.1.6~~ Ventilation.

[F] ~~415.11.1-7307.7.1.1.7~~ Transporting hazardous production materials to fabrication areas.

[F] ~~415.11.1-8307.7.1.1.8~~ Electrical.

[F] ~~415.11.1.8-1307.7.1.1.8.1~~ Workstations.

[F] ~~415.11-2307.7.1.2~~ Corridors.

[F] ~~415.11-3307.7.1.3~~ Service corridors.

[F] ~~415.11.3-1307.7.1.3.1~~ Use conditions.

[F] ~~415.11.3-2307.7.1.3.2~~ Mechanical ventilation.

[F] ~~415.11.3-3307.7.1.3.3~~ Means of egress.

[F] ~~415.11.3-4307.7.1.3.4~~ Minimum width.

[F] ~~415.11.3-5307.7.1.3.5~~ Emergency alarm system. .

[F] ~~415.11.3.5-1307.7.1.3.5.1~~ Service corridors.

[F] ~~415.11.3.5-2307.7.1.3.5.2~~ Corridors and interior exit stairways and ramps.

[F] ~~415.11.3.5-3307.7.1.3.5.3~~ Liquid storage rooms, HPM rooms and gas rooms. .

[F] ~~415.11.3.5-4307.7.1.3.5.4~~ Alarm-initiating devices.

[F] ~~415.11.3.5-5307.7.1.3.5.5~~ Alarm signals.

[F] ~~415.11-4307.7.1.4~~ Storage of hazardous production materials.

[F] ~~415.11-5307.7.1.5~~ HPM rooms, gas rooms, liquid storage room construction.

[F] ~~415.11.5-1307.7.1.5.1~~ HPM rooms and gas rooms.

[F] ~~415.11.5-2307.7.1.5.2~~ Liquid storage rooms.

[F] ~~415.11.5-3307.7.1.5.3~~ Floors.

[F] ~~415.11.5-4307.7.1.5.4~~ Location.

[F] ~~415.11.5-5307.7.1.5.5~~ Explosion control.

[F] ~~415.11.5-6307.7.1.5.6~~ Exits..

[F] ~~415.11.5-7307.7.1.5.7~~ Doors.

[F] ~~415.11.5.8~~307.7.1.5.8 Ventilation.

[F] ~~415.11.5.9~~307.7.1.5.9 Emergency alarm system.

[F] ~~415.11.6.3~~307.7.1.6 Piping and tubing.

[F] ~~415.11.6.1~~307.7.1.6.1 HPM having a health-hazard ranking of 3 or 4. .

[F] ~~415.11.6.2~~307.7.1.6.2 Location in service corridors.

[F] ~~415.11.6.3~~307.7.1.6.3 Excess flow control.

[F] ~~415.11.6.4~~307.7.1.6.4 Installations in corridors and above other occupancies.

[F] ~~415.11.6.5~~307.7.1.6.5 Identification.

[F] ~~415.11.7.3~~307.7.1.7 Continuous gas detection systems.

[F] ~~415.11.7.1~~307.7.1.7.1 Where required.

[F] ~~415.11.7.1.1~~307.7.1.7.1.1 Fabrication areas.

[F] ~~415.11.7.1.2~~307.7.1.7.1.2 HPM rooms.

[F] ~~415.11.7.1.3~~307.7.1.7.1.3 Gas cabinets, exhausted enclosures and gas rooms.

[F] ~~415.11.7.1.4~~307.7.1.7.1.4 Corridors.

[F] ~~415.11.7.2~~307.7.1.7.2 Gas detection system operation.

[F] ~~415.11.7.2.1~~307.7.1.7.2.1 Alarms.

[F] ~~415.11.7.2.2~~307.7.1.7.2.2 Shutoff of gas supply.

[F] ~~415.11.8~~307.7.1.8 Manual fire alarm system.

[F] ~~415.11.9.3~~307.7.1.9 Emergency control station.

[F] ~~415.11.9.1~~307.7.1.9.1 Location.

[F] ~~415.11.9.2~~307.7.1.9.2 Staffing.

[F] ~~415.11.9.3~~307.7.1.9.3 Signals.

[F] ~~415.11.10.3~~307.7.1.10 Emergency power system.

[F] ~~415.11.10.1~~307.7.1.10.1 Required electrical systems.

[F] ~~415.11.10.2~~307.7.1.10.2 Exhaust ventilation systems.

[F] ~~415.11.11.3~~307.7.1.11 Automatic sprinkler system protection in exhaust ducts for HPM.

[F] ~~415.11.11.1~~307.7.1.11.1 Metallic and noncombustible nonmetallic exhaust ducts.

[F] ~~415.11.11.2~~307.7.1.11.2 Combustible nonmetallic exhaust ducts.

[F] ~~415.11.11.3~~307.7.1.11.3 Automatic sprinkler locations.

Reason: Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features. Provisions of the code for manufacturing, processing, dispensing, use or storage are being moved to the occupancy sections which include the criteria for these conditions and will provide a single location for users to find the requirements for this condition.

Cost Impact: Will not increase the cost of construction
Because the technical provisions of the code are not being changed, but simply moved, there is no impact on the cost of construction.

G 64-15 : [F] 415.10.4-COLLINS5973

G 65-15

416, [F] 416.1, [F] 416.2, [F] 416.2.1, [F] 416.2.2, [F] 416.3, [F] 416.3.1, [F] 416.4, [F] 416.5

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

2015 International Building Code

Delete without substitution:

~~SECTION 416 APPLICATION OF FLAMMABLE FINISHES~~

Revise as follows:

[F] 416-1307.1.3 General Application of flammable finishes The provisions of this section shall apply to the construction, installation and use of buildings and structures, or parts thereof, for the application of flammable finishes. Such construction and equipment shall comply with the *International Fire Code*.

[F] 416-2307.1.3.1 Spray rooms.

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

[F] 416-2-1307.1.3.1.1 Surfaces.

[F] 416-2-2307.1.3.1.2 Ventilation.

[F] 416-3307.1.3.2 Spraying spaces.

[F] 416-3-1307.1.3.2.1 Surfaces.

[F] 416-4307.1.3.3 Spray booths.

[F] 416-5307.1.3.4 Fire protection.

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

Flammable finishes are specifically part of the hazardous materials requirements and with this change are moved to Section 307 where all the criteria are located for identifying such materials. With this change once the code user is clear that the materials are hazardous, the requirements will be located in the same section making it clear what is necessary as a result.

Cost Impact: Will not increase the cost of construction

Because there are no changes to the technical requirements of the code for the spray applications of flammable materials, there will be no change in the cost of construction as a result of this change.

G 65-15 : [F] 416-COLLINS4818

G 66-15

417, [F] 417.1, [F] 417.2, [F] 417.3, [F] 417.4

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

2015 International Building Code

Delete without substitution:

~~SECTION 417- DRYING ROOMS~~

-

Revise as follows:

~~[F] 417-1307.6.2.1~~ **General-Drying rooms** A drying room or dry kiln installed within a building shall be constructed entirely of *approved* noncombustible materials or assemblies of such materials regulated by the *approved* rules or as required in the general and specific sections of this chapter for special occupancies and where applicable to the general requirements of the *International Mechanical Code*.

~~[F] 417-2307.6.2.1.1~~ **Piping clearance.**

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

~~[F] 417-3307.6.2.1.2~~ **Insulation.**

~~[F] 417-4307.6.2.1.3~~ **Fire protection.**

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

Drying rooms often involve the use of materials with hazardous characteristics and must be addressed by their classification as such and the quantities of such materials when they exceed the exempt quantities. By moving the provisions from Chapter 4 to the hazardous materials classifications, the code user will better understand the link with these provisions.

Cost Impact: Will not increase the cost of construction

Because there is no technical change to the code requirements, there will be no increase in the cost of construction.

G 66-15 : [F] 417-COLLINS4820

G 67-15

418, [F]307.1.3 (New), [F] 418.1, [F] 418.2, [F] 418.3, [F] 418.4, [F] 418.5, [F] 418.6

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

2015 International Building Code

Delete and substitute as follows:

~~SECTION 418-~~ ~~ORGANIC COATINGS~~

Add new text as follows:

[F]307.1.3 Organic coatings. Manufacturing of organic coatings shall be done only in buildings in compliance with Sections 307.1.3.1 through 307.1.3.6.

Revise as follows:

~~[F] 418-1307.1.3.1~~ Building features.

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

~~[F] 418-2307.1.3.2~~ Location.

~~[F] 418-3307.1.3.3~~ Process mills.

~~[F] 418-4307.1.3.4~~ Tank storage.

~~[F] 418-5307.1.3.5~~ Nitrocellulose storage.

~~[F] 418-6307.1.3.6~~ Finished products.

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

Organic coatings are specifically part of the hazardous materials requirements and with this change are moved to Section 307 where all the criteria are located for identifying such materials. With this change once the code user is clear that the materials are hazardous, the requirements will be located in the same section making it clear what is necessary as a result.

Cost Impact: Will not increase the cost of construction

Because there are not changes to the technical requirements of the code for organic coatings, there will be no change in the cost of construction as a result of this change.

G 67-15 : 418-COLLINS5972

G 68-15

419, 419.1, 419.1.1, 419.2, 419.3, 419.3.1, 419.3.2, 419.4, [F] 419.5, 419.6, 419.7, 419.8, 419.9

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

2015 International Building Code

Delete without substitution:

~~SECTION 419- LIVE/WORK UNITS~~

Revise as follows:

~~419-1510.10~~ **General Live/Work units.** A live/work unit shall comply with Sections ~~419-1510.10.1~~ through ~~419-9510.10.9~~.

Exception: Dwelling or sleeping units that include an office that is less than 10 percent of the area of the *dwelling unit* are permitted to be classified as *dwelling units* with accessory occupancies in accordance with Section 508.2.

~~419-1-1510.10.1~~ **Limitations.**

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

~~419-2510.10.2~~ **Occupancies.**

~~419-3510.10.3~~ **Means of egress.**

~~419-3-1510.10.3.1~~ **Egress capacity.**

~~419-3-2510.10.3.2~~ **Spiral stairways.**

~~419-4510.10.4~~ **Vertical openings. .**

[F] ~~419-5510.10.5~~ **Fire protection.**

~~419-6510.10.6~~ **Structural.**

~~419-7510.10.7~~ **Accessibility. .**

~~419-8510.10.8~~ **Ventilation.**

~~419-9510.10.9~~ **Plumbing facilities.**

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

Live/work units, which perhaps a special subclassification of residential occupancy is in fact at part of the special provisions in Chapter 5 for mixed uses that are not separated. Section 510 is titled special provisions and is where the live/work provisions should also be found.

Cost Impact: Will not increase the cost of construction

No technical changes are made to the requirements for live/work and will not change how the code applies and will cause no increase in cost of construction.

G 68-15 : 419.1-COLLINS4822

G 69-15

420, 420.1, 420.2, 420.3, 420.4, 420.4.1, [F] 420.5, [F] 420.6, 308.3.5 (New), 308.3.6 (New), 308.3.7 (New), 308.3.8 (New), 308.3.8.1 (New), 310.3 (New), 310.4 (New), 310.5 (New)

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

2015 International Building Code

Delete and substitute as follows:

~~SECTION 420- GROUPS I-1, R-1, R-2, R-3 AND R-4~~

~~**420.1 General.** Occupancies in Groups I-1, R-1, R-2, R-3 and R-4 shall comply with the provisions of Sections 420.1 through 420.6 and other applicable provisions of this code.~~

~~**420.2 Separation walls.** Walls separating *dwelling units* in the same building, walls separating *sleeping units* in the same building and walls separating *dwelling or sleeping units* from other occupancies contiguous to them in the same building shall be constructed as *fire partitions* in accordance with Section 708.~~

~~**420.3 Horizontal separation.** Floor assemblies separating *dwelling units* in the same buildings, floor assemblies separating *sleeping units* in the same building and floor assemblies separating *dwelling or sleeping units* from other occupancies contiguous to them in the same building shall be constructed as *horizontal assemblies* in accordance with Section 711.~~

~~**420.4 Smoke barriers in Group I-1, Condition 2.** Smoke barriers shall be provided in Group I-1, Condition 2, to subdivide every story used by persons receiving care, treatment or sleeping and to provide other stories with an occupant load of 50 or more persons, into no fewer than two smoke compartments~~

~~. Such stories shall be divided into smoke compartments with an area of not more than 22,500 square feet (2092 m²) and the distance of travel from any point in a smoke compartment to a smoke barrier door shall not exceed 200 feet (60 960 mm). The smoke barrier shall be in accordance with Section 709.~~

~~**420.4.1 Refuge area.** Refuge areas shall be provided within each smoke compartment. The size of the refuge area shall accommodate the occupants and care recipients from the adjoining smoke compartment. Where a smoke compartment is adjoined by two or more smoke compartments, the minimum area of the refuge area shall accommodate the largest occupant load of the adjoining compartments. The size of the refuge area shall provide the following:~~

- ~~1. Not less than 15 net square feet (1.4 m²) for each care recipient.~~
- ~~2. Not less than 6 net square feet (0.56 m²) for other occupants.~~

~~Areas or spaces permitted to be included in the calculation of the refuge area are corridors, lounge or dining areas and other low-hazard areas.~~

~~**[F] 420.5 Automatic sprinkler system.** Group R occupancies shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.2.8. Group I-1 occupancies shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.2.6. Quickresponse or residential automatic sprinklers shall be installed in accordance with Section 903.3.2.~~

~~**[F] 420.6 Fire alarm systems and smoke alarms.** Fire alarm systems and smoke alarms shall be provided in Group I-1, R-1, R-2 and R-4 occupancies in accordance with Sections 907.2.6, 907.2.8, 907.2.9 and 907.2.10, respectively. Single or multiple station smoke alarms shall be provided in Groups I-1, R-2, R-3 and R-4 in accordance with Section 907.2.11.~~

Add new text as follows:

308.3.5 Separation walls and horizontal assemblies. Walls or floor assemblies separating I-1 dwelling units in the same building, walls separating I-1 sleeping units in the same building and walls separating I-1 dwelling or sleeping units from other occupancies contiguous to them in the same building shall be constructed as fire partitions in accordance with Section 708 and horizontal assemblies in accordance with Section 711.

308.3.6 Automatic sprinkler system Group I-1 occupancies shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.2.6. Quickresponse or residential automatic sprinklers shall be installed in accordance with Section 903.3.2.

308.3.7 Fire alarm systems and smoke alarms 308.3.7 Fire alarm systems and smoke alarms. Fire alarm systems and smoke alarms shall be provided in Group I-1 occupancies in accordance with Sections 907.2.6.1. Single or multiple station smoke alarms shall be provided in Groups I-1 in accordance with Section 907.2.11.2.

308.3.8 Smoke barriers in Group I-1, Condition 2 Smoke barriers shall be provided in Group I-1, Condition 2, to subdivide every story used by persons receiving care, treatment or sleeping and to provide other stories with an occupant load of 50 or more persons, into no fewer than two smoke compartments.

Such stories shall be divided into smoke compartments with an area of not more than 22,500 square feet (2092 m²) and the distance of travel from any point in a smoke compartment to a smoke barrier door shall not exceed 200 feet (60 960 mm). The smoke barrier shall be in accordance with Section 709.

308.3.8.1 Refuge area Refuge areas shall be provided within each smoke compartment. The size of the refuge area shall accommodate the occupants and care recipients from the adjoining smoke compartment. Where a smoke compartment is adjoined by two or more smoke compartments, the minimum area of the refuge area shall accommodate the largest occupant load of the adjoining compartments. The size of the refuge area shall provide the following:

1. Not less than 15 net square feet (1.4 m²) for each care recipient.
2. Not less than 6 net square feet (0.56 m²) for other occupants.

Areas or spaces permitted to be included in the calculation of the refuge area are corridors, lounge or dining areas and other low-hazard areas.

310.3 Separation walls and horizontal assemblies Walls or floor assemblies separating R-1 dwelling units in the same building, walls separating R-1, R-2, R-3 and R-4 sleeping units in the same building and walls separating R-1, R-2, R-3 and R-4 dwelling or sleeping units from other occupancies contiguous to them in the same building shall be constructed as fire partitions in accordance with Section 708 and horizontal assemblies in accordance with Section 711.

310.4 Automatic sprinkler system Group R-1, R-2, R-3 and R-4 occupancies shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.2.8. Quickresponse or residential automatic sprinklers shall be installed in accordance with Section 903.3.2.

310.5 Fire alarm systems and smoke alarms Fire alarm systems and smoke alarms shall be provided in Group R-1, R-2 and R-4 occupancies in accordance with Sections 907.2.8, 907.2.9 and 907.2.11 respectively. Single or multiple-station smoke alarms shall be provided in Groups R-2, R-3 and R-4 in accordance with Section 907.2.11.

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

I-1, R-1, R-2, R-3 and R-4 have similarities but differences as well and putting them all in one section can be confusing. This change moves them into two parts of Chapter 3 where the I-1 Group is classified and the provisions for compartments are more appropriately identified. The R occupancies are moved into the R Group where the requirements for separation are more easily found and applied appropriately.

Cost Impact: Will not increase the cost of construction

No technical changes are made by this code, simply moving provisions from one part of the code to another, not increasing the cost of construction.

G 69-15 : 420-COLLINS4823

G 70-15

421, [F] 421.1, [F] 421.2, [F] 421.3, [F] 421.4, [F] 421.4.1, [F] 421.4.2, [F] 421.5, [F] 421.6, [F] 421.6.1, [F] 421.6.2, [F] 421.6.3, [F] 421.6.4, [F] 421.7, [F] 421.8

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

2015 International Building Code

Delete without substitution:

~~SECTION 421-~~ ~~HYDROGEN FUEL GAS ROOMS~~

Revise as follows:

[F] ~~421-1509.5~~ **General Hydrogen fuel gas rooms.** Where required by the *International Fire Code*, hydrogen fuel gas rooms shall be designed and constructed in accordance with Sections ~~421-1509.5.1~~ through ~~421-7509.5.7~~.

[F] ~~421-2509.5.1~~ **Definitions.**

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

[F] ~~421-3509.5.2~~ **Location.**

[F] ~~421-4509.5.3~~ **Design and construction.**

[F] ~~421-4-1509.5.3.1~~ **Pressure control.**

[F] ~~421-4-2509.5.3.2~~ **Windows.**

[F] ~~421-5509.5.4~~ **Exhaust ventilation.**

[F] ~~421-6509.5.5~~ **Gas detection system.**

[F] ~~421-6-1509.5.5.1~~ **System design.**

[F] ~~421-6-2509.5.5.2~~ **Gas detection system components.**

[F] ~~421-6-3509.5.5.3~~ **Operation.**

[F] ~~421-6-4509.5.5.4~~ **Failure of the gas detection system.**

[F] ~~421-7509.5.6~~ **Explosion control.**

[F] ~~421-8509.5.7~~ **Standby power.**

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

Hydrogen fuel gas rooms are listed as incidental uses in Table 509 of the IBC and the IFC when not an H occupancy. This change simply moves it from Chapter 4 and puts it into the requirements for incidental uses in Chapter 5 making the application of the code easier to understand and easier for appropriate application for the user.

Cost Impact: Will not increase the cost of construction

This change will simply clarify how these rooms, once identified as incidental must be constructed, and will not increase the cost of construction.

G 70-15 : [F] 421-COLLINS4825

G 71-15

422, 422.1, 422.2, 422.3, 422.3.1, 422.3.2, 422.3.3, [F] 422.4, [F] 422.5

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

2015 International Building Code

Delete without substitution:

~~SECTION 422-~~ ~~AMBULATORY CARE FACILITIES~~

Revise as follows:

~~422-1304.2~~ **General Ambulatory care facilities.** Occupancies classified as *ambulatory care facilities* shall comply with the provisions of Sections ~~422-1 304.2.1~~ through ~~422-5 304.2.4~~ and other applicable provisions of this code.

~~422-2304.2.1~~ **Separation.**

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

~~422-3304.2.2~~ **Smoke compartments.**

~~422-3-1304.2.2.1~~ **Means of egress.**

~~422-3-2304.2.2.2~~ **Refuge area.**

~~422-3-3304.2.2.3~~ **Independent egress.**

[F] ~~422-4304.2.3~~ **Automatic sprinkler systems.**

[F] ~~422-5304.2.4~~ **Fire alarm systems.**

Reason: Chapter 4 of the IBC includes a hodge-podge of various criteria for "special use and occupancy." However, these are often exceptions to specific limits or allowances from having to meet such limits, or even specific requirements for specific occupancy groups. The issue in general is that they are "gotcha's" built into the code. This series of code changes moves these special criteria into the chapters and sections where these issues are typically addressed, removing any doubt in the mind of the code user as to how these criteria are to be integrated into the design and construction of a building that includes these features. Ambulatory facilities are classified as a B occupancy. Being a relatively new occupancy having the specific requirements located in Chapter 4 with no reference to it in Chapter 3 leaves many questions in the code users mind. Moving it here will clearly identify these types of care facilities as a business and include the specific criteria for it in that same section.

By moving the provisions in Chapter 4 for ambulatory care facilities into the the occupancy classification in Chapter 3, the triggers and allowances for ambulatory care will be clear and obvious choices. Correlation of references to new code locations are not included in the proposal but need to be provided by the editorial staff.

Cost Impact: Will not increase the cost of construction

By moving the provisions for ambulatory care into the occupancy classification it will make the code simpler to understand and apply and will not increase the cost of construction.

G 71-15 : [F] 422-COLLINS4869

G 72-15

423, 423.1, 423.1.1, 423.2, 423.3, 423.4

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

2015 International Building Code

Delete without substitution:

~~SECTION 423-~~ ~~STORM SHELTERS~~

Revise as follows:

~~423.1504.5~~ **General** Storm shelters. In addition to the requirements of this section and other applicable requirements in this code, storm shelters shall be constructed in accordance with ICC 500.

~~423.1.1504.5.1~~ **Scope**.

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

~~423.2504.5.2~~ **Definitions**.

~~423.3504.5.3~~ **Critical emergency operations**.

~~423.4504.5.4~~ **Group E occupancies**.

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

Moving the provisions for storm shelters from Chapter 4 into Section 504 will more closely align such structures for their typical location above or below ground. With other changes for structures below ground (underground structures) this will maintain the common location of buildings, their height and their relationship with grade consistent and make it more understandable for code users.

Cost Impact: Will not increase the cost of construction

Moving the provisions for storm shelters from Chapter 4 to Chapter 5 will not affect the cost of construction.

G 72-15 : 423-COLLINS4872

G 73-15

424, 424.1, 602.6 (New), 424.2, [F] 424.3, 424.4, 424.5

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

2015 International Building Code

Delete without substitution:

~~SECTION 424-~~ ~~CHILDREN'S PLAY STRUCTURES~~

Delete and substitute as follows:

~~424.1 Children's play structures.~~ Children's play structures installed inside all occupancies covered by this code that exceed 10 feet (3048 mm) in height and 150 square feet (14 m²) in area shall comply with Sections 424.2 through 424.5.

602.6 Children's play structures

Children's play structures installed inside all occupancies covered by this code that exceed 10 feet (3048 mm) in height and 150 square feet (14 m²) in area shall comply with Sections 602.6.1 through 602.6.4.

Revise as follows:

~~424.2~~602.6.1 Materials.

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

~~[F] 424.3~~602.6.2 Fire protection.

~~424.4~~602.6.3 Separation.

~~424.5~~602.6.4 Area limits.

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

The requirements for children's play area are based solely on the materials they are constructed of and their relationship with the structure in which they are located. Moving these requirements into Chapter 6 where other materials performance and their relationship with the building is appropriate and more easily understood by code users.

Cost Impact: Will not increase the cost of construction

Moving these provisions with no change will not affect the cost of construction.

G 73-15 : 424-COLLINS4879

G 74-15

425, 425.1, 304.5 (New)

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

2015 International Building Code

Delete and substitute as follows:

~~SECTION 425 HYPERBARIC FACILITIES~~

Revise as follows:

~~425.1308.7~~ Hyperbaric facilities.

(The text of this section would be unchanged except to update section references.).

Add new text as follows:

304.5 Hyperbaric facilities Hyperbaric facilities shall meet the requirements contained in Chapter 14 of NFPA 99.

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

By moving the provisions in Chapter 4 for hyperbaric facilities into Chapter 3, the typical applications within Group I-2 facilities and Group B outpatient facilities will be captured for understanding by the code user. This change also references the criteria for reporting in the International Fire Code.

Cost Impact: Will not increase the cost of construction

Simply moving the provisions from Chapter 4 to Chapter 3 will have no effect on the cost of construction.

G 74-15 : 425-COLLINS4882

G 75-15

[F] 426, 426.1, [F] 426.1.1, [F] 426.1.2, [F] 426.1.3, [F] 426.1.4, [F] 426.1.5, [F] 426.1.6, [F] 426.1.7

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

2015 International Building Code

Delete without substitution:

~~SECTION [F] 426-~~
~~COMBUSTIBLE DUSTS, GRAIN PROCESSING AND STORAGE~~

Revise as follows:

426.1[F] 307.4.1 Combustible dusts, grain processing and storage. The provisions of Sections ~~426.1-1~~307.4.1.1 through ~~426.1-7~~307.4.1.7 shall apply to buildings in which materials that produce combustible dusts are stored or handled. Buildings that store or handle combustible dusts shall comply with the applicable provisions of NFPA 61, NFPA 85, NFPA 120, NFPA 484, NFPA 654, NFPA 655 and NFPA 664 and the *International Fire Code*.

[F] ~~426.1-1~~307.4.1.1 Type of construction and height exceptions.

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

[F] ~~426.1-2~~307.4.1.2 Grinding rooms.

[F] ~~426.1-3~~307.4.1.3 Conveyors.

[F] ~~426.1-4~~307.4.1.4 Explosion control.

[F] ~~426.1-5~~307.4.1.5 Grain elevators.

[F] ~~426.1-6~~307.4.1.6 Coal pockets.

[F] ~~426.1-7~~307.4.1.7 Tire rebuilding.

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

The handling and use of combustible dusts and grains is another example of special use and occupancy that is better found in Chapter 3 where the specifics of the hazards are classified and their application within the code determined. The wholesale provisions from 426 are moved to Section 307.4 for another part of the complicated H-2 occupancy conditions.

Cost Impact: Will not increase the cost of construction

Simply moving the provisions from one section of the code to another will not change the cost of construction.

G 75-15 : 426-COLLINS4880

G 76-15

402.7.6 (New)

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

2015 International Building Code

Add new text as follows:

402.7.6 Fire command center For covered mall buildings exceeding 50,000 square feet (4645 m²) a fire command center complying with Section 911 shall be provided in a location approved by the fire department.

Reason: The IFC alludes to a fire command center for covered mall buildings in Section 408.11.1. However, the trigger requirement for a covered mall building is not apparent. Base code requirements for covered mall buildings have significant triggers occurring at 50,000 sf. These include emergency voice alarm systems, and emergency power. Section 402.7.5 has requirements for fire department access to controls for sprinklers, HVAC, and "other detection, suppression or control elements shall be identified for use by the fire department." In addition Section 402.7.2 requires smoke control in covered malls with atriums over two stories.

For larger buildings, preplanning the use of fire protection equipment such as hose stations, and the above mentioned equipment will aid in fire department response. Providing the necessary information and equipment controls in one accessible location such as a fire command center, can only aid the response. Without a fire command center there is no requirement to consolidate equipment controls to aid emergency response. This proposal will formalize the requirement alluded to in the fire code for mall buildings over 50,000 sf. and provide a single location for emergency equipment controls and responders to coordinate their efforts.

Cost Impact: Will increase the cost of construction

This proposal will increase the cost of construction by adding a fire command center to certain mall buildings.

G 76-15 : 402.7.6 (New)-
DIGIOVANNI3816

G 77-15

402.8.6.1

Proponent: Robert Davidson, representing Myself (rjd@davidsoncodeconcepts.com)

2015 International Building Code

Revise as follows:

402.8.6.1 Exit passageways. Where *exit passageways* provide a secondary *means of egress* from a tenant space, ~~doorways to the exit passageway~~ passageways shall be ~~protected by 1-hour fire door assemblies that are self- or automatic-closing by smoke detection~~ constructed in accordance with Section ~~716.5.9.3~~ 1024.

Reason: The purpose of this proposal is to point the user to all of the code requirements for exit passageways. The 1 hour fire-resistance rating is maintained, for openings Section 1024.5 points the user to Section 716 and applying that portion of the code maintains the requirement for the 1 hour rated fire doors, (see Table 716.5), and maintains the requirement for the smoke activated closure, (see Section 716.5.9.3, Item 3).

There has been cases of confusion in that a user looks at Sections 402.8.6.1 and 402.8.7 and interprets that these are the only sections needed to be complied with for an exit passageway in this occupancy. For example, the application of Section 1024.6 for penetration limitations. With the suggest change the level of protection is unchanged and application of the exit passageway requirements are clarified.

Cost Impact: Will not increase the cost of construction

Since the modification clarifies application of the code there should be a reduction in unnecessary costs associated with correcting errors in construction.

G 77-15 : 402.8.6.1-DAVIDSON5504

G 78-15

402.8.7.1 (New)

Proponent: Gene Boecker, representing Code Consultants, Inc. (geneb@codeconsultants.com)

2015 International Building Code

Add new text as follows:

402.8.7.1 Utility systems in exit passageways The following utility systems and equipment are permitted in mall exit passageways:

1. Electrical wiring in conduit not greater than 480 volts phase-to-phase and 277 volts phase-to-neutral.
2. Exposed low-voltage wiring.
3. Enclosed junction boxes.
4. Fire alarm equipment and wiring.
5. Noncombustible waste piping.
6. Cold/hot water piping.
7. Automatic fire sprinkler piping.
8. Storm water piping.

All penetrations of fire barriers shall be protected in accordance with Section 714.

Reason: The covered mall building provisions (Section 402.8.7) allow for building utility service rooms to open into exit passageways. However, the current text does not specifically address the distribution of utilities within exit passageways of malls.

For maintenance reasons, utilities are typically distributed within the service corridors at the rear of the tenant space which, in most cases, also serves as the exit passageway. Section 402.8.7 permits openings from the service rooms into these exit passageways for other than means of egress but does not address the distribution of those utilities once they leave the service room.

Because the covered mall provisions for service rooms allow for service rooms to open into exit passageways, similar low-hazard service equipment should be allowed to be distributed in the exit passageways provided that the penetration is properly protected, egress heights are maintained and egress widths are maintained. By referring to Section 714, proper penetration protection of the fire barrier will occur. Egress heights and widths are addressed elsewhere in the code and would not need to be clarified or repeated herein.

Cost Impact: Will not increase the cost of construction

Because the distribution of utilities is currently allowed in a number of cases (one of the legacy codes specifically allowed it) the proposal will not increase costs. The alternatives would require additional costs for horizontal shaft construction and separate service rooms for utility connections.

G 78-15 : 402.8.7.1 (New)-
BOECKER5456

G 79-15

403.1

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

2015 International Building Code

Revise as follows:

403.1 Applicability. *High-rise buildings* shall comply with Sections 403.2 through 403.6.

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

1. Airport traffic control towers in accordance with Section 412.3.
2. *Open parking garages* in accordance with Section 406.5.
3. The portion of a building containing a Group A-5 occupancy in accordance with Section 303.6. This exception does not apply to uses that are located on an occupied roof.
4. Special industrial occupancies in accordance with Section 503.1.1.
5. Buildings with primary occupancy of:
 - 5.1. A Group H-1 occupancy;
 - 5.2. A Group H-2 occupancy in accordance with Section 415.8, 415.9.2, 415.9.3 or 426.1; or,
 - 5.3. A Group H-3 occupancy in accordance with Section 415.8.

Reason: There is concern about the impact of exceptions 3 and 5.

For exception 3, there are instances where a swimming pool deck is located on the roof of a high-rise building. Being outdoors, those areas could be considered an A-5 occupancy. There is concern about eliminating the high-rise provisions, such as fire alarm coverage, standpipe system coverage, etc, for these areas. In certain jurisdictions, these areas can be used for parties and nightclub uses, which bring with them a higher level of hazard that justifies the application of high-rise provisions, as applicable. This proposal attempts to ensure that the exception does not include roof top uses such as swimming pool decks.

For exception 5, there is concern about any such building that is a portion of a high-rise building. The way that exception 5 reads, if any of these occupancies are collocated with a high-rise building, then the high-rise provisions would not be applicable to the high-rise building. While there is no concern with a H-1 occupancy required to be a separate building by Section 415.7, or a Group H-2 or H-3 occupancy required to be in a detached building per Section 415.8, there is concern about the other H-2 occupancies that may be collocated with a high-rise building. Specifically, LPG facilities described in Section 415.9.2 are not defined, and may be within a high-rise building. Also, NFPA 58 allows bulk LPG facilities to be attached to other structures. The dry cleaning plants described in Section 415.9.3 could be found in larger hotels that have on-site uniform maintenance. Finally, there are larger high-rise complexes that have on-site engineering maintenance staff with the capability of producing combustible dusts in designated maintenance areas. The way exception 5 reads, having any of these H-2 occupancies within or attached to the high-rise building, would seem to say that the high-rise provisions no longer apply. By adding the phrase regarding the primary occupancy, having a minor part of a building be an H-2 occupancy would not negate the applicability to high-rise provisions for that building.

Cost Impact: Will increase the cost of construction

Depending on previous interpretations, this proposal may increase construction costs for certain buildings or portions thereof that were not previously constructed in accordance with the high-rise provisions.

G 79-15 : 403.1-DIGIOVANNI3817

G 80-15

403.2.1.1

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

2015 International Building Code

Revise as follows:

403.2.1.1 Type of construction. The following reductions in the minimum *fire-resistance rating* of the building elements in Table 601 shall be permitted as follows:

1. For buildings not greater than 420 feet (128 000 mm) in *building height*, the *fire-resistance rating* of the building elements in Type IA construction shall be permitted to be reduced to the minimum *fire-resistance ratings* for the building elements in Type IB.
Exception: The required fire-resistance rating of columns supporting floors shall not be reduced.
2. In other than Group F-1, H, M and S-1 occupancies, the *fire-resistance rating* of the building elements in Type IB construction shall be permitted to be reduced to the *fire-resistance ratings* in Type IIA.
3. The *building height* and *building area* limitations of a building containing building elements with reduced *fire-resistance ratings* shall be permitted to be the same as the building without such reductions.

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

During the last code development cycle the committee approved a code change proposal that clarified the allowance for H Group uses within a high-rise buildings. During the hearing, committee members correctly questioned why Group H was not included within Section 403.2.1.1 Exception 2 when Groups of a lesser fire hazard potential were included. Since Section 403.2.1.1 was not part of the proposal before the committee, there was no way to address the issue during last cycle.

This proposal addresses the issue identified by the committee and adds Group H to Section 403.2.1.1 Exception 2 wherein Groups F-1, M, and S-1 are currently restricted from lowering their type of construction.

Cost Impact: Will increase the cost of construction

The cost of construction for a mixed occupancy high-rise containing an H Group occupancy will be increased by elimination of the ability to reduce the construction type.

G 80-15 : 403.2.1.1-KULIK4892

G 81-15

403.5.2

Proponent: Raymond Grill, Arup, representing Arup (ray.grill@arup.com)

2015 International Building Code

Revise as follows:

403.5.2 Additional interior exit stairway. For buildings other than Group R-2 and their ancillary spaces that are more than 420 feet (128 000 mm) in *building height*, one additional *interior exit stairway* meeting the requirements of Sections 1011 and 1023 shall be provided in addition to the minimum number of *exits* required by Section 1006.3. The total width of any combination of remaining *interior exit stairways* with one *interior exit stairway* removed shall be not less than the total width required by Section 1005.1. *Scissor stairways* shall not be considered the additional *interior exit stairway* required by this section.

Exception: An additional *interior exit stairway* shall not be required to be installed in buildings having elevators used for occupant self-evacuation in accordance with Section 3008.

Reason: Ancillary spaces used as amenity space (e.g., rooftop terrace, pool, fitness center, clubhouse, etc.) that serve residential units are primarily used by the same occupants of the residential units, which should not drive the requirement for a redundant stair.

Cost Impact: Will not increase the cost of construction

This code proposal is intended to clarify application of the code. If anything, the cost impact of the change is that cost of construction will be reduced.

G 81-15 : 403.5.2-GRILL5342

G 82-15

403.5.2

Proponent: Raymond Grill, Arup, representing Arup (ray.grill@arup.com)

2015 International Building Code

Revise as follows:

403.5.2 Additional interior exit stairway. For buildings other than Group R-1 and R-2 that are more than 420 feet (128 000 mm) in *building height*, one additional *interior exit stairway* meeting the requirements of Sections 1011 and 1023 shall be provided in addition to the minimum number of *exits* required by Section 1006.3. The total width of any combination of remaining *interior exit stairways* with one *interior exit stairway* removed shall be not less than the total width required by Section 1005.1. *Scissor stairways* shall not be considered the additional *interior exit stairway* required by this section.

Exception: An additional *interior exit stairway* shall not be required to be installed in buildings having elevators used for occupant self-evacuation in accordance with Section 3008.

Reason: The requirement for the additional stair in building over 420 was incorporated to address the perceived issue of counter flow in stairs during emergency responder response.

R-1 occupancies have the same occupant loading as R-2 occupancies (200 sf per person). R-2 occupancies should be considered the same as R-2 occupancies for the purpose of this requirement.

Cost Impact: Will not increase the cost of construction

This code change will reduce the construction cost for R-1 occupancies over 420 feet in height.

G 82-15 : 403.5.2-GRILL5345

G 83-15

403.5.2

Proponent: Jonathan Siu, City of Seattle, Department of Planning and Development, representing Washington Association of Building Officials Technical Code Development Committee (jon.siu@seattle.gov)

2015 International Building Code

Revise as follows:

403.5.2 Additional interior exit stairway. For buildings other than Group R-2 that are more than 420 feet (128 000 mm) in *building height*, one additional *interior exit stairway* meeting the requirements of Sections 1011 and 1023 shall be provided in addition to the minimum number of *exits* required by Section 1006.3. The total ~~width capacity~~ of any combination of remaining *interior exit stairways* with one *interior exit stairway* removed shall be not less than the total ~~width capacity~~ required by Section 1005.1. *Scissor stairways* shall not be considered the additional *interior exit stairway* required by this section.

Exception: An additional *interior exit stairway* shall not be required to be installed in buildings having elevators used for occupant self-evacuation in accordance with Section 3008.

Reason: This proposal is a clarification to reflect what we believe was intended when this section was placed into the IBC. In the 2015 code, egress "width" and "capacity" were carefully separated in Chapter 10. "Width" refers to a minimum dimension stated in the code for a particular egress component. "Capacity" now refers to a dimension that is calculated based on an occupant load. It appears that the code change that made this separation did not address this section, and the failure to do so results in a question as to what was intended. We believe that the intent is to maintain the capacity of the remaining stairs. This is not an issue for most buildings that we have dealt with, but if the building has large assembly spaces higher up in the building, it can result in another stair being required.

Cost Impact: Will not increase the cost of construction

This proposal is a clarification of the code. If a jurisdiction has been interpreting the code in a way that is consistent with this proposal, there will be no change in cost of construction. If a jurisdiction has been applying the code differently, then there may be an increase in the cost of construction.

G 83-15 : 403.5.2-SIU4266

G 84-15

403.5.2

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

2015 International Building Code

Revise as follows:

403.5.2 Additional interior exit stairway. For buildings other than Group R-2 that are more than 420 feet (128 000 mm) in *building height*, one additional *interior exit stairway* meeting the requirements of Sections 1011 and 1023 shall be provided in addition to the minimum number of *exits* required by Section 1006.3. The total width of any combination of remaining *interior exit stairways* with one *interior exit stairway* removed shall be not less than the total width required by Section 1005.1. *Scissor stairways* shall not be considered the additional *interior exit stairway* required by this section.

Exception~~Exceptions:~~ ~~1. An~~ additional *interior exit stairway* shall not be required to be installed in buildings having elevators used for occupant self-evacuation in accordance with Section 3008.

2. An additional *interior exit stairway* shall not be required for redundancy to stairways serving only those portions of the building less than 420 feet (128 000 mm) in building height.

Reason: The intent of these codes sections was to provide additional means of egress for the super high-rise structures (i.e., over 420-feet tall). It was not the intent of the code to establish the additional exit stairway provisions for connected podiums, other towers, and other portions of the same building that are less than 420 feet in building height. The code language as written could be interpreted to require the additional exit stairway for these other building areas.

For larger facilities, project designs have included multiple towers connected to a podium, which are considered a single building in building height and area. By adding new Exception No. 2 to Sections 403.5.2, the interpretation to require the additional exit stairway for other building areas or towers with building heights less than 420 feet becomes more uniform.

Cost Impact: Will not increase the cost of construction

This proposal will not increase the cost of construction, as no additional building elements or more stringent means of construction are being added to the existing code by this proposal.

G 84-15 : 403.5.2-DIGIOVANNI3819

G 85-15

403.5.3, 403.5.3.1 (New), 403.5.3.1.1 (New), 403.5.3.1

Proponent: Dave Frable, US General Services Administration, representing US General Services Administration

2015 International Building Code

Revise as follows:

403.5.3 Stairway door operation. Stairway doors other than the *exit discharge* doors shall meet one of the following conditions:

1. Re-entry from the stairway enclosure to the interior of the building shall be permitted to be locked from the stairway side provided.
2. Stairway doors that are locked from the stairway side shall be capable of being unlocked simultaneously without unlatching upon a signal from the fire command center to allow re-entry.
3. Selected re-entry shall be provided in accordance with Section 403.5.3.1

Add new text as follows:

403.5.3.1 Stairway door re-entry Stairway doors shall be permitted to be equipped with hardware that prevents re-entry into the interior of the building, provided that all of the following criteria are met:

1. There shall be not less than two levels where it is possible to leave the stair enclosure to access another exit.
2. There shall be not more than four stories intervening between stories where it is possible to leave the stair enclosure to access another exit.
3. Re-entry shall be possible on the top story or next-to-top story served by the stair enclosure, and such story shall allow access to another exit.
4. Stairway doors allowing re-entry shall be identified as such on the stair side of the door leaf.
5. Stairway doors not allowing re-entry shall be provided with a sign on the stairway side indicating the location of the nearest door opening, in each direction of travel, that allows re-entry or exit.

403.5.3.1.1 Stairway re-entry signage Where the provisions of 403.5.3.1 are used, signage on the stair door leaves shall be required as follows:

1. Stairway doors allowing re-entry shall be identified as such on the stair side of the door leaf.
2. Stairway doors not allowing re-entry shall be provided with a sign on the stair side indicating the location of the nearest door opening, in each direction of travel that allows re-entry or exit.

Revise as follows:

~~403.5.3-1~~**403.5.3.2 Stairway communication system.** A telephone or other two-way communications system connected to an *approved constantly attended station* shall be provided at not less than every fifth floor in each *stairway* where the doors to the *stairway* are locked.

Reason: The intent of this code change is to re-arrange the subject section and provide another option for designers of high-rise buildings when considering building security and locking stairway doors from the stairway side of the enclosure. This code change proposal recognizes stairway re-entry provisions that are currently permitted in the 2015 edition of the National Fire Protection Association (NFPA), Life Safety Code.

Cost Impact: Will increase the cost of construction

The intent of this code change may increase the cost of construction due to additional signage requirements. However, the communication will not be required if this option is used.

G 85-15 : 403.5.3-FRABLE5493

G 86-15

403.5.3.1

Proponent: Dave Frable, representing US General Services Administration (dave.frable@gsa.gov)

2015 International Building Code

Delete without substitution:

~~**403.5.3.1 Stairway communication system.** A telephone or other two-way communications system connected to an approved constantly attended station shall be provided at not less than every fifth floor in each stairway where the doors to the stairway are locked.~~

Reason: In a companion proposal, we have proposed to is to re-arrange the provisions of stairway reentry and to provide another option for designers of high-rise buildings when considering building security and locking stairway doors from the stairway side of the enclosure. This code change proposal recognizes stairway re-entry provisions that are currently permitted in the 2015 edition of the National Fire Protection Association (NFPA), Life Safety Code. In the companion proposal Section 403.5.3.1 is retained. This proposal is to delete Section 403.5.3.1. The intent of the communication system is to provide occupants a means to notify an attended location that the stairway prevents its continued use. However, the subject communication system has no operating instructions and it appears to provide a false sense of assurance that the stairway doors will be unlocked in a timely manner since in all likelihood the person being notified is not within the vicinity of the controls within the building to unlock the stairway doors.

Cost Impact: Will not increase the cost of construction

The intent of this code change will reduce cost of construction due to the elimination of the stairway communication system.

G 86-15 : 403.5.3.1-FRABLE5508

G 87-15

403.6.1

Proponent: Brad Schiffer, representing self (brad@taxi-usa.com)

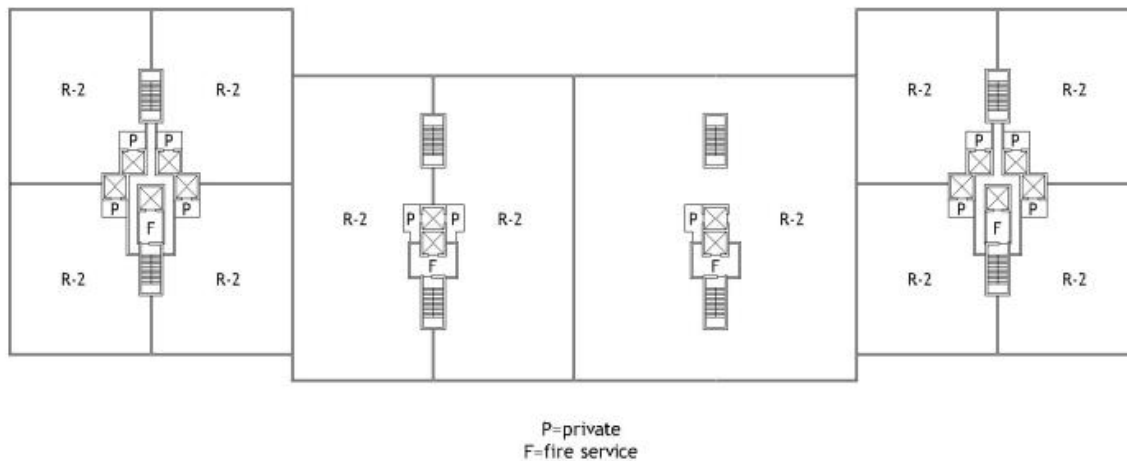
2015 International Building Code

Revise as follows:

403.6.1 Fire service access elevator. In buildings with an occupied floor more than 120 feet (36 576 mm) above the lowest level of fire department vehicle access, no fewer than two fire service access elevators, or all elevators, whichever is less, shall be provided in accordance with Section 3007. Each fire service access elevator shall have a capacity of not less than 3,500 pounds (1588 kg) and shall comply with Section 3002.4.

Exception: One fire service access elevator is required in Group R-2 occupancies with a hoistway group serving not more than six dwelling units.

Reason: Residential buildings with private elevators have multiple elevator groups serving each level. These elevator groups have the private elevators serving the units with a service elevator meeting the Fire Service Access Elevator requirements. Requiring two Fire Service Access Elevators causes at least one of the private elevators to become a Fire Service Access Elevator. This also requires that private elevator to provide Phase 1 recall. These cores serve a small occupant load.



Cost Impact: Will not increase the cost of construction

Due to the removal of an additional Fire Service Access Elevator this will decrease building costs.

G 87-15 : 403.6.1-SCHIFFER4483

G 88-15

404.2

Proponent: Jeff Hugo, National Fire Sprinkler Association, representing National Fire Sprinkler Association (hugo@nfsa.org)

2015 International Building Code

Revise as follows:

404.2 Use. The floor of the *atrium* shall not be used for other than low fire hazard uses and only *approved* materials and decorations in accordance with the *International Fire Code* shall be used in the *atrium* space.

Exception: The *atrium* floor area is permitted to be used for any *approved* use where the individual space, regardless of the ceiling height of the atrium, is provided with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

Reason: This proposal clarifies that the sprinkler exception in Section 404.3 cannot be used when the floor of the atrium is used for other than a low fire hazard use. While NFPA 13 does not limit the height of when sprinklers are used, the exception in 404.3 is mistakenly applied when using this section.

Cost Impact: Will not increase the cost of construction
No technical change made to code.

G 88-15 : 404.2-HUGO4517

G 89-15

404.2, [F] 404.3

Proponent: Robert Davidson, representing Myself (rjd@davidsoncodeconcepts.com)

2015 International Building Code

Revise as follows:

404.2 Use. ~~The floor of the atrium shall not be used for other than low fire hazard uses and only~~ Only approved materials and decorations in accordance with the *International Fire Code* shall be used in the *atrium* space.

Exception: ~~The atrium floor area is permitted to be used for any approved use where the individual space is provided with an automatic sprinkler system in accordance with Section 903.3.1.1.~~

[F] 404.3 Automatic sprinkler protection. An approved automatic sprinkler system shall be installed throughout the entire building. The floor of the atrium shall not be used for any activities that exceed the designed capability of the automatic sprinkler system. Where a smoke control system is present the use and arrangement of the atrium floor shall be consistent with the design of the smoke control system.

Exceptions:

1. That area of a building adjacent to or above the *atrium* need not be sprinklered provided that portion of the building is separated from the *atrium* portion by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.
2. ~~Where the ceiling of the atrium is more than 55 feet (16 764 mm) above the floor, sprinkler~~ Sprinkler protection at the ceiling of the *atrium* is not required: provided the following criteria are met:
 - 2.1. The ceiling of the atrium is more than 55 feet (16764 mm) above the floor, and
 - 2.2. The floor of the atrium shall not be used for other than low fire hazard uses.

Reason: The purpose of this proposal is to improve the code language to obtain the intended goal of the sections involved. There is no intention of a major technical change or increase in requirements.

The existing Section 404.2 has two requirements, low fire hazard use restriction for the atrium and compliance with the fire code for materials and decorations. Then there is an exception when a sprinkler system is present, however, Section 404.3 mandates a sprinkler system to be present anytime there is an atrium. So the exception would always apply unless exception 2 in Section 404.3 is applied.

The other problem with the language in 404.2 and that the exception could be read to give exception to the fire code provisions on materials and decorations and this creates a conflict with the fire code.

The proposed changes are to simply have Section 404.2 maintain the language setting up the relationship with the fire code for materials and decorations. The floor use of the atrium is then related directly to the designed capabilities of the sprinkler system and a smoke control system if one is present, both of which is a normal part of the design process for fire protection systems, (i.e., what is the expected fuel load of the atrium). This is done with the language proposed to be added to Section 404.3.

The final modification is to take the language restricting the use of the atrium to low fire hazard uses and attach that requirement to Section 404.3, Exception 2 where the atrium ceiling protection is eliminated.

The intent of the current language is maintained, but technical application of the requirements are clarified with this proposal.

Cost Impact: Will not increase the cost of construction

Since there is no increase in code requirements there will not be an increase in costs.

G 89-15 : 404.2-DAVIDSON5297

G 90-15

404.5

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

2015 International Building Code

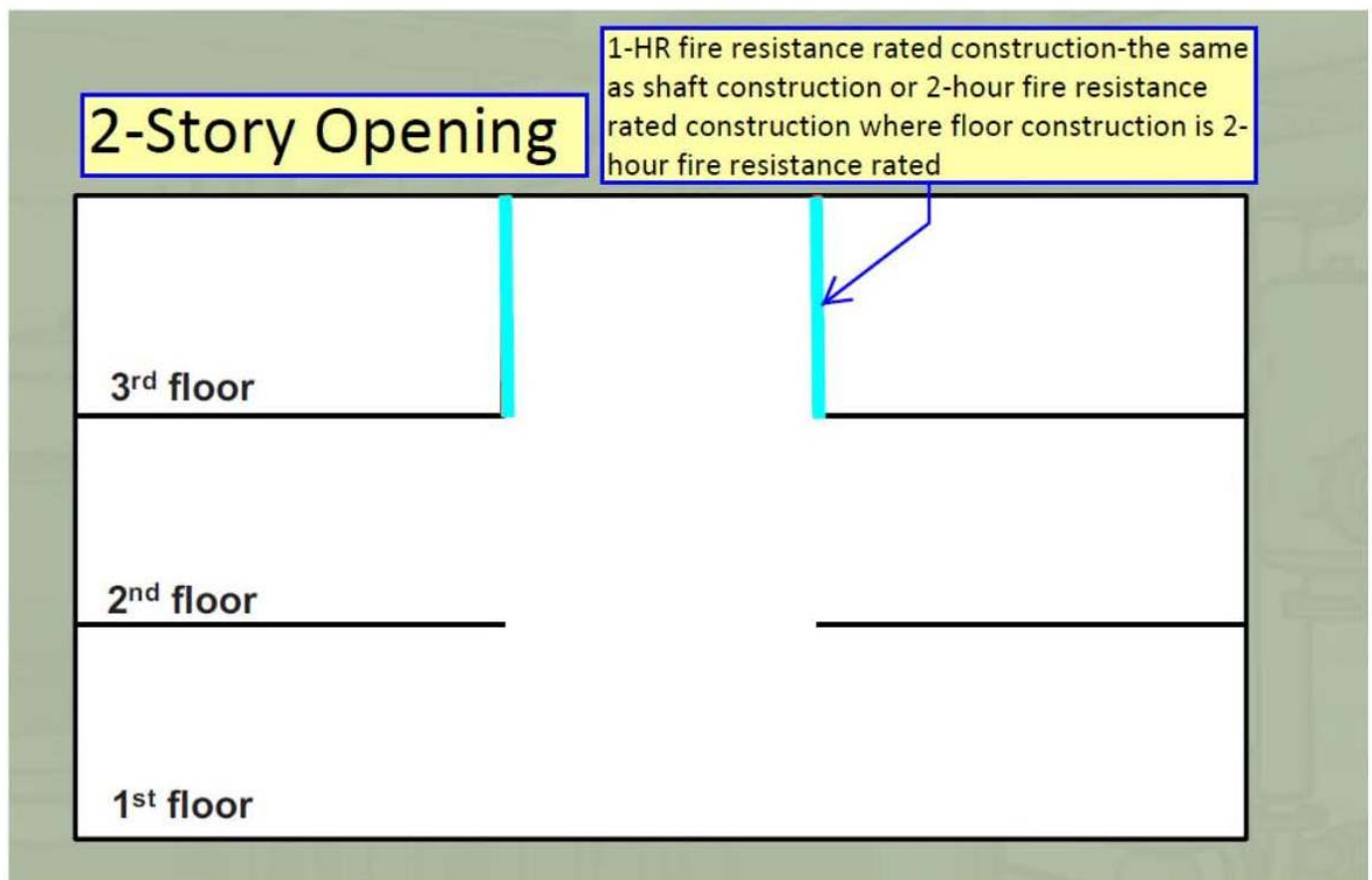
Revise as follows:

404.5 Smoke control. A smoke control system shall be installed in accordance with Section 909.

Exception~~Exceptions:~~ A smoke control system is not required in the following conditions:

1. In other than Group I-2, and Group I-1, Condition 2, ~~smoke control is not required for atriums~~ that connect only two stories.
2. Where an atrium connects three stories in other than Group I-2 or Group I-1 condition 2 occupancies, smoke control is not required where:
 - 2.1. Either the second or third story is atmospherically separated from the atrium by a fire barrier; and
 - 2.2. The fire barrier is constructed as a shaft enclosure and is of not less than 1-hour fire-resistive construction or the required rating of the floor assemblies, whichever is greater.
3. Where an atrium connects two stories in a Group I-2 or Group I-1 condition 2 occupancies, smoke control is not required where:
 - 3.1. The second story is atmospherically separated from the atrium by a fire barrier; and
 - 3.2. The fire barrier is constructed as a shaft enclosure and is of not less than 1-hour fire-resistive construction or the required rating of the floor assemblies, whichever is greater.

Reason: To introduce natural light to the first or second floors in a multi-story building, a light-well is typically introduced. Also, often the entry lobbies to buildings have a high ceiling extending through two or three stories and atmospherically separated at the top level with fire resistance rated fire barriers. While this scheme has been approved administratively and as an alternate method with varying requirements, this proposal would bring consistency to the application. This proposal requires atmospheric separation such that not more than two stories are connected to each other and in case of I-2 occupancy groups one story with a high ceiling lobby entry area would be permitted to extend thru the second floor and be atmospherically separated from the second story. When the highest story is separated from the floor opening, it creates a larger reservoir for smoke to collect. The reason this proposal limits the separations to the upper floors (not permitted on the first story) is because if separation is provided at the first floor, three level including the interior area of the first floor separated by the fire barrier would create a 3 story opening. Please refer to the attached drawings for further clarification. This approach is consistent with provisions of Section 712.1.9 pertaining to two story openings. Also, section 712.1.13.1 allows horizontal fire door assemblies to limit number of floor openings and this proposal provides safeguards equivalent to horizontal fire door assemblies by separating the floor openings on at least one level. Since this exception is introduced in the atrium section, the building will have sprinkler protection throughout.



Cost Impact: Will not increase the cost of construction
This proposal does not increase the cost of construction.

G 90-15 : 404.5-SABOUNCHI4603

G 91-15

404.5

Proponent: Raymond Grill, Arup, representing Arup (ray.grill@arup.com)

2015 International Building Code

Revise as follows:

404.5 Smoke control. A smoke control system shall be installed in accordance with Section 909.

~~Exception~~Exceptions:

1. In other than Group I-2, and Group I-1, Condition 2, smoke control is not required for *atriums* that connect only two *stories*.
2. In other than Group I-2 and Group I-1, Condition 2, smoke control is not required for atriums where levels above the lowest level are separated from the atrium in accordance with Section 404.6.

Reason: In the event of a fire on the lowest level of the atrium, the atrium space will provide a heat and smoke sink that would enhance the safety of occupants at the base of the atrium. Heated products of combustion will rise and will allow more time for egress. The separation of upper levels in accordance with 404.6 precludes exposure to occupants on upper levels.

Smoke removal after the event can be performed in the same manner as in any other building without an atrium. There is no greater exposure presented.

In other sections of the code, multiple interconnected levels are allowed without smoke control. Section 712.1.3.1 allows an unlimited number of levels in Group B and M occupancies to be interconnected by escalators when draft stops and sprinklers are provided around the floor opening. Section 1019.3 allows exit access stairs to interconnect an unlimited number of stories in Group B and M occupancies to be interconnected without shaft enclosures if draft stops and sprinklers are provided around the openings. The code allows escalators and exit access stairs to interconnect up to 4 stories in other occupancies without shaft enclosures provided draft stops and sprinklers are provided around the floor openings.

The proposed exception would present less of a fire safety risk than is currently allowed by the code.

Cost Impact: Will not increase the cost of construction

The proposed exception could significantly reduce the cost of construction and reduce the ongoing maintenance cost of the building since a system requiring regular testing would no longer be required.

G 91-15 : 404.5-GRILL4975

Proponent: Stephen Thomas, representing Smoke Guard (sthomas@coloradocode.net)

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~~ smoke barrier constructed in accordance with Section 707 or a ~~horizontal assembly constructed in accordance with Section 711, or both 709.~~

Exceptions:

1. A ~~fire~~ smoke 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~~ smoke 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 ~~smoke fire~~ smoke 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.

709.4.2 Smoke-barrier walls enclosing atriums, areas of refuge or elevator lobbies. *Smoke-barrier* walls used to enclose atriums in accordance with Section 404.6, areas of refuge in accordance with Section 1009.6.4, or to enclose elevator lobbies in accordance with Section 405.4.3, 3007.6.2, or 3008.6.2, shall form an effective membrane enclosure that terminates at a *fire barrier* wall having a level of *fire protection rating* not less than 1 hour, another *smoke barrier* wall or an outside wall. A smoke and draft control door assembly as specified in Section 716.5.3.1 shall not be required at each elevator hoistway door opening or at each exit doorway between an area of refuge and the exit enclosure.

Reason: This proposal replaces the fire barrier separation between an atrium and adjacent spaces with a smoke barrier. The purpose of the atrium separation is to assist the smoke control system in containing the smoke to just the atrium area. A fire barrier is not totally designed to contain smoke. However, a smoke barrier is designed to contain smoke. The fire-resistance rating and continuity of the assembly does not change. Only the smoke resistance requirements are added to the assembly to assist in containing the smoke within the atrium. Since smoke barriers are defined as both horizontal and vertical assemblies, the language regarding horizontal assemblies has been deleted. A change to Section 709.4.2 has also been included to include atrium separations in the continuity requirements for smoke barriers.

Cost Impact: Will not increase the cost of construction

It is not believed that the cost of construction will not change. The walls are essentially constructed the same with the exception of smoke protection at openings and penetrations. The reduction in the opening protection between a fire barrier and smoke barrier will balance out the cost of the smoke protection.

G 93-15

404.6

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

2015 International Building Code

Revise as follows:

404.6 Enclosure of atriums. *Atrium* spaces shall be separated from adjacent spaces by a 1-hour *fire barrier* constructed in accordance with Section 707 or a *horizontal assembly* constructed in accordance with Section 711, or both.

Exceptions:

1. A *fire barrier* is not required where a glass wall forming a smoke partition is provided. The glass wall shall comply with all of the following:
 - 1.1. Automatic sprinklers are provided along both sides of the separation wall and doors, or on the room side only if there is not a walkway on the *atrium* side. The sprinklers shall be located between 4 inches and 12 inches (102 mm and 305 mm) away from the glass and at intervals along the glass not greater than 6 feet (1829 mm). The sprinkler system shall be designed so that the entire surface of the glass is wet upon activation of the sprinkler system without obstruction;
 - 1.2. The glass wall shall be installed in a gasketed or similarly sealed frame in a manner that the framing system deflects without breaking (loading) the glass before the sprinkler system operates; and
 - 1.3. Where glass doors are provided in the glass wall, they shall be either *self-closing* or automatic-closing.
2. A *fire barrier* is not required where a glass-block wall assembly complying with Section 2110 and having a $3/4$ -hour *fire protection rating* is provided.
3. A *fire barrier* is not required between the *atrium* and the adjoining spaces of any three floors of the *atrium* provided such spaces are accounted for in the design of the smoke control system.

Reason: The term "gasket" is generally defined as "*a shaped piece or ring of rubber or other material sealing the junction between two surfaces...*". In this instance, it refers to a pre-manufactured (shaped) piece that is compressed to form a sealed junction between the glass and the frame that is meant to restrict the passage of gases between them.

The word "gasketed" does not allow for structural or wet-set glazed systems to be used. However, these tested assemblies are approved for rated glass, and do not utilize gaskets.

For example, PLO/WA90-01 uses PVC tape, sealant, and angle stops. The frame is still being loaded but no gaskets are used. The current language is overly restrictive given that there are proven technologies available that produce the same outcomes. This allows the use of other materials that address unique designs or systems not currently anticipated in the code.

Additionally, traditional "gaskets" in frames have been prohibited in many Group I-3 (detention) occupancies. This is because gaskets can potentially be removed and used as weapons by the inmates.

Therefore, it is important to clarify that the use of other approved methods to affix and/or seal the glass to the frame are acceptable methods of compliance. This proposal is intended to include products based on new technology.

Cost Impact: Will not increase the cost of construction

This proposal does not increase construction costs as it only offers an option to the current requirement, without removing or changing the current requirements.

G 93-15 : 404.6-DIGIOVANNI3820

G 94-15

404.6

Proponent: John Terry, State of New Jersey- DCA, representing State of New Jersey - Department of Community Affairs- Division of Codes and Standards (jterry@dca.nj.gov)

2015 International Building Code

Revise as follows:

404.6 Enclosure of atriums.

Atrium spaces shall be separated from adjacent spaces by a 1-hour *fire barrier* constructed in accordance with Section 707 or a *horizontal assembly* constructed in accordance with Section 711, or both.

Exceptions:

1. A *fire barrier* is not required where a glass wall forming a smoke partition is provided. The glass wall shall comply with all of the following:
 - 1.1. Automatic sprinklers are provided along both sides of the separation wall and doors, or on the room side only if there is not a walkway on the *atrium* side. The sprinklers shall be located between 4 inches and 12 inches (102 mm and 305 mm) away from the glass and at intervals along the glass not greater than 6 feet (1829 mm). The sprinkler system shall be designed so that the entire surface of the glass is wet upon activation of the sprinkler system without obstruction;
 - 1.2. The glass wall shall be installed in a gasketed 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~~ up to 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 where the atrium is not required to be provided with a smoke control system.

Reason: As currently written, the code allows three floors to be open to an atrium provided the volume of the three floors is accounted for in the design of the smoke control system. Technically, the current text is silent regarding one or two floors being open to the atrium without separation. Replacing the word "and" with "up to" corrects the wording to allow one, two or three floors to be open to the atrium provided the volume of the space is accounted for in the design of the smoke control system. But what if the atrium is in a building not required to be provided with a smoke control system? It has been interpreted that a two-story atrium, in other than Group I-2 and Group I-1 Condition 2, would be allowed to have the adjacent spaces unprotected without a smoke control system. Still others have interpreted the need for a smoke control in a two-story building when the adjacent spaces are open as a result of the current exception #3. By adding exception #4, it will be made clear that the requirements for the non-separated space to be accounted for in the design of the smoke control system applies only for atriums required to be provided with smoke control systems in the first place.

Cost Impact: Will not increase the cost of construction
This code change will have no impact on the cost of construction.

G 94-15 : 404.6-TERRY3407

G 95-15

406, 406 (New), Chapter 35

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

2015 International Building Code

Revise as follows:

406.1 General. ~~Motor-vehicle-related~~ All motor-vehicle-related occupancies shall comply with Section 406.1. Private garages and carports shall also comply with Section 406.3. Open public parking garages shall also comply with Sections 406.4 and 406.6. Motor fuel-dispensing facilities shall also comply with Section 406.7. Repair garages shall also comply with Section 406.8.

Add new text as follows:

406.1.1 Automatic garage door openers and vehicular gates. Where provided, automatic garage door openers shall be listed and labeled in accordance with UL 325. Where provided, automatic vehicular gates shall comply with Section 3110.

406.1.2 Clear height The clear height of each floor level in vehicle and pedestrian traffic areas shall be not less than 7 feet (2134 mm). Canopies under which fuels are dispensed shall have a clear height in accordance with Section 406.7.2.

Exception: A lower clear height is permitted for a parking tier in mechanical-access open parking garages where approved by the building official.

406.1.3 Accessible parking spaces. Where parking is provided, accessible parking spaces shall be provided in accordance with Section 1106.

406.1.4 Floor surfaces. Floor surfaces shall be of concrete or similar approved noncombustible and nonabsorbent materials. The area of floor used for the parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids to a drain or toward the main vehicle entry doorway. The surface of vehicle fueling pads in motor fuel-dispensing facilities shall be in accordance with Section 406.7.1.

Exceptions:

1. Asphalt parking surfaces shall be permitted at ground level for public parking garages and private carports.
2. Floors of Group S-2 parking garages shall not be required to have a sloped surface.
3. Slip-resistant, nonabsorbent, interior floor finishes having a critical radiant flux not more than 0.45 W/cm², as determined by NFPA 253, shall be permitted in repair garages.

406.1.5 Sleeping rooms. Openings between a motor vehicle-related occupancy and a room used for sleeping purposes shall not be permitted.

406.1.6 Fuel dispensing. The dispensing of fuel shall only be permitted in motor fuel dispensing facilities in accordance with Section 406.7.

406.1.7 Electric vehicle charging stations. Electric vehicle charging stations shall be installed in accordance with NFPA 70. Electric vehicle charging system equipment shall be listed and labeled in accordance with UL 2202. Electric vehicle supply equipment shall be listed and labeled in accordance with UL 2594. Accessibility to electric vehicle charging stations shall be provided in accordance with Chapter 11.

406.1.8 Mixed occupancies and separation. Mixed uses shall be allowed in the same building as public parking garages and repair garages in accordance with 508.1. Mixed uses in the same building as an open parking garage are subject to Sections 402.4.2.3, 406.5.11, 508.1, 510.3, 510.4 and 510.7.

406.1.9 Equipment and appliances. Equipment and appliances shall be installed in accordance with Sections 406.1.9.1 through 406.1.9.3 and the *International Mechanical Code*, *International Fuel Gas Code* and NFPA 70.

406.1.9.1 Elevation of ignition sources. Equipment and appliances having an ignition source and located in hazardous locations and public garages, private garages, repair garages, automotive motor fuel-dispensing facilities and parking garages shall be elevated such that the source of ignition is not less than 18 inches (457 mm) above the floor surface on which the equipment or appliance rests. For the purpose of this section, rooms or spaces that are not part of the living space of a dwelling unit and that communicate directly with a private garage through openings shall be considered to be part of the private garage.

Exception: Elevation of the ignition source is not required for appliances that are listed as flammable vapor ignition resistant.

406.1.9.1.1 Parking garages. Connection of a parking garage with any room in which there is a fuel-fired appliance shall be by means of a vestibule providing a two-doorway separation, except that a single door is permitted where the sources of ignition in the appliance are elevated in accordance with Section 406.1.9.

Exception: This section shall not apply to appliance installations complying with Sections 406.1.9.2 or 406.1.9.3.

406.1.9.2 Public garages. Appliances located in public garages, motor fueling-dispensing facilities, repair garages or other areas frequented by motor vehicles, shall be installed not less than 8 feet (2438 mm) above the floor. Where motor vehicles are capable of passing under an appliance, the appliance shall be installed at the clearances required by the appliance manufacturer and not less than 1 foot (305 mm) higher than the tallest vehicle garage door opening.

Exception: The requirements of this section shall not apply where the appliances are protected from motor vehicle impact and installed in accordance with Section 406.1.9.1 and NFPA 30A.

406.1.9.3 Private garages. Appliances located in private garages and carports shall be installed with a minimum clearance of 6 feet (1829 mm) above the floor.

Exception: The requirements of this section shall not apply where the appliances are protected from motor vehicle impact and installed in accordance with Section 406.1.9.1.

Revise as follows:

406.3 Private garages and carports. Private garages and carports shall comply with Sections ~~406.3.1 through 406.3.6~~ 406.1 and 406.3.

406.3.1 Classification. Private garages and carports shall be classified as Group U occupancies. Each private garage shall be not greater than 1,000 square feet (93 m²) in area. Multiple private garages are permitted in a building where each private garage is separated from the other private garages by 1-hour *fire barriers* in accordance with Section 707, or 1-hour *horizontal assemblies* in accordance with Section 711, or both.

Delete without substitution:

~~**406.3.2 Clear height.** In private garages and carports, the clear height in vehicle and pedestrian traffic areas shall be not less than 7 feet (2134 mm). Vehicle and pedestrian areas accommodating van-accessible parking shall comply with Section 1106.5.~~

Revise as follows:

~~**406.3.406.3.2 Separation.** For other than private garages adjacent to dwelling units, the separation of private garages from other occupancies shall comply with Section 508. Separation of private garages from *dwelling units* shall comply with Sections 406.3.4.1 through 406.3.4.3~~ 406.3.2.1 and 406.3.2.2.

~~**406.3.4-1406.3.2.1 Dwelling unit separation.** The private garage shall be separated from the *dwelling unit* and its *attic* area by means of gypsum board, not less than 1/2 inch (12.7 mm) in thickness, applied to the garage side. Garages beneath habitable rooms shall be separated from all habitable rooms above by not less than a 5/8-inch (15.9 mm) Type X gypsum board or equivalent and 1/2-inch (12.7 mm) gypsum board applied to structures supporting the separation from habitable rooms above the garage. Door openings between a private garage and the *dwelling unit* shall be equipped with either solid wood doors or solid or honeycomb core steel doors not less than 1 3/8 inches (34.9 mm) in thickness, or doors in compliance with Section 716.5.3 with a fire protection rating of not less than 20 minutes. Doors shall be *self-closing* and self-latching.~~

~~**406.3.4-1406.3.2.2 Ducts.** Ducts in a private garage and ducts penetrating the walls or ceilings separating the *dwelling unit* from the garage, including its *attic* area, shall be constructed of sheet steel of not less than 0.019 inch (0.48 mm) in thickness and shall have no openings into the garage.~~

~~**406.3.5406.3.3 Carports.** Carports shall be open on at least two sides. Carport floor surfaces shall be of an approved noncombustible material. Carports not open on at least two sides shall be considered a garage and shall comply with the requirements for private garages.~~

~~**Exception:** Asphalt surfaces shall be permitted at ground level in carports.~~

~~The area of floor used for parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids to a drain or toward the main vehicle entry doorway.~~

Delete without substitution:

~~**406.3.3 Garage floor surfaces.** Garage floor surfaces shall be of approved noncombustible material. The area of floor used for parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids to a drain or toward the main vehicle entry doorway.~~

Revise as follows:

~~**406.3.5-1406.3.3.1 Carport separation.** No change to text.~~

Delete without substitution:

~~**406.3.4.2 Openings prohibited.** Openings from a private garage directly into a room used for sleeping purposes shall not be permitted.~~

~~**406.3.6 Automatic garage door openers.** Automatic garage door openers, where provided, shall be listed in accordance with UL-325.~~

Revise as follows:

406.4 Public parking garages. Parking garages, other than *private garages*, shall be classified as public parking garages and shall comply with the provisions of Sections 406.4.2 through 406.4.8 Section 406.1, Section 406.4 and shall be classified as either an *open parking garage* or an enclosed parking garage. *Open parking garages* shall also comply with Section 406.5. Enclosed parking garages shall also comply with Section 406.6. See Section 510 for special provisions for parking garages.

Delete without substitution:

~~**406.4.1 Clear height.** The clear height of each floor level in vehicle and pedestrian traffic areas shall be not less than 7 feet (2134 mm). Vehicle and pedestrian areas accommodating van-accessible parking shall comply with Section 1106.5.~~

Revise as follows:

~~**406.4.2406.4.1 Guards.** Guards shall be provided in accordance with Section 1015. Guards serving as *vehicle barriers* shall comply with Sections 406.4.3406.4.2 and 1015.~~

~~**406.4.3406.4.2 Vehicle barriers.** *Vehicle barriers* not less than 2 feet 9 inches (835 mm) in height shall be placed where the vertical distance from the floor of a drive lane or parking space to the ground or surface directly below is greater than 1 foot (305 mm). *Vehicle barriers* shall comply with the loading requirements of Section 1607.8.3.~~

~~**Exception:** *Vehicle barriers* are not required in vehicle storage compartments in a mechanical access parking garage.~~

~~**406.4.4406.4.3 Ramps.** Vehicle ramps shall not be considered as required *exits* unless pedestrian facilities are provided. Vehicle ramps that are utilized for vertical circulation as well as for parking shall not exceed a slope of 1:15 (6.67 percent).~~

Delete without substitution:

~~**406.4.5 Floor surface.** Parking surfaces shall be of concrete or similar noncombustible and nonabsorbent materials.~~

~~The area of floor used for parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids to a drain or toward the main vehicle entry doorway.~~

Exceptions:

- 1- ~~Asphalt parking surfaces shall be permitted at ground level.~~
- 2- ~~Floors of Group S-2 parking garages shall not be required to have a sloped surface.~~

~~406.4.6 Mixed occupancy separation.~~ Parking garages shall be separated from other occupancies in accordance with Section 508.1.

~~406.4.7 Special hazards.~~ Connection of a parking garage with any room in which there is a fuel-fired appliance shall be by means of a vestibule providing a two-doorway separation.

~~Exception:~~ A single door shall be allowed provided the sources of ignition in the appliance are not less than 18 inches (457 mm) above the floor.

~~406.4.8 Attached to rooms.~~ Openings from a parking garage directly into a room used for sleeping purposes shall not be permitted.

Revise as follows:

406.5 Open parking garages. *Open parking garages* shall comply with Sections ~~406.5.1 through 406.5.11~~ 406.1, 406.4 and 406.5.

406.5.4.1 Single use. Where the *open parking garage* is used exclusively for the parking or storage of private motor vehicles, with no other uses in the building, the area and height shall be permitted to comply with Table 406.5.4, along with increases allowed by Section 406.5.5.

Exception: The grade-level tier is permitted to contain an office, waiting and toilet rooms having a total combined area of not more than 1,000 square feet (93 m²). Such area need not be separated from the *open parking garage*.

In *open parking garages* having a spiral or sloping floor, the horizontal projection of the structure at any cross section shall not exceed the allowable area per parking tier. In the case of an *open parking garage* having a continuous spiral floor, each 9 feet 6 inches (2896 mm) of height, or portion thereof, shall be considered a tier.

~~The clear height of a parking tier shall be not less than 7 feet (2134 mm), except that a lower clear height is permitted in mechanical access open parking garages where approved by the building official.~~

406.6 Enclosed parking garages. Enclosed parking garages shall comply with Sections ~~406.6.1 through 406.6.3~~ 406.1, 406.4 and 406.6.

406.7 Motor fuel-dispensing facilities. Motor fuel-dispensing facilities shall comply with the *International Fire Code* and Sections ~~406.7.1~~ 406.1 and ~~406.7.2~~ 406.7.

406.8 Repair garages. Repair garages shall be constructed in accordance with the *International Fire Code* and Sections ~~406.8.1 through 406.8.6~~ 406.1 and 406.8. This occupancy shall not include motor fuel-dispensing facilities, as regulated in Section 406.7.

Delete without substitution:

~~406.8.1 Mixed uses.~~ Mixed uses shall be allowed in the same building as a repair garage subject to the provisions of Section 508.1.

Revise as follows:

406.8.206.8.1 Ventilation. Repair garages shall be mechanically ventilated in accordance with the *International Mechanical Code*. The ventilation system shall be controlled at the entrance to the garage.

Delete without substitution:

~~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/cm², as determined by NFPA 253, shall be permitted.

~~406.8.4 Heating equipment.~~ Heating equipment shall be installed in accordance with the *International Mechanical Code*.

Add new standard(s) as follows:

UL2202-09 (2012) - Standard for Electric Vehicle (EV) Charging System Equipment, 2013, UL LLC, 333 Pfingsten Road, Northbrook, IL 60062.

UL2594-13 - Standard for Electric Vehicle Supply Equipment, 2013, UL LLC, 333 Pfingsten Road, Northbrook, IL 60062.

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

This proposal relocates all the general requirements that apply to all motor-vehicle related occupancies into the general section, Section 406.1, and also provides in the beginning of Section 406 directions as to what sections apply to private garages and carports, open and enclosed parking garages, motor fuel-dispensing facilities, and repair garages.

The general global requirements are:

1. Automatic garage door openers and vehicular gates (originally in Section 406.3.6) – This equipment is not required to be installed, but where provided in any occupancy, minimum safeguards should be provided. UL 325 is applicable for certifying products for use in both residential and commercial applications, and addresses fire, shock, and entrapment hazards. The reference to Section 3110 provides the user with direction to the use of automatic vehicular gates, where provided.
2. Clear height (originally in Sections 406.3.2, 406.4.1, and 406.5.4.1) – A minimum clear height should be provided in any occupancy for people and vehicles.
3. Accessible parking spaces – This provides a link to the requirements in Chapter 11 for accessible parking spaces, where provided.
4. Floor surface (originally in Sections 406.3.3, 406.3.5, 406.4.5, and 406.8.3) – Where vehicles are parked, the floor surface should be both noncombustible and nonabsorbent. Motor Fuel-Dispensing Facilities and Repair garages have unique floor surface requirements.
5. Sleeping rooms (originally in Sections 406.3.4.2 and 406.4.8) – In all motor vehicle related occupancies, no openings directly into a sleeping room should be permitted due to the production of carbon monoxide by the vehicles.
6. Fuel dispensing (originally in Section 406.5.11) – In all motor vehicle related occupancies, except for motor fuel dispensing facilities, the dispensing of fuel should not be permitted.

7. Electric vehicle charging stations – The installation of electric vehicle charging stations is rapidly increasing. This new provision would provide minimum requirements to provide minimum safeguards for the installation of these stations, where provided in any motor vehicle related occupancy.

8. Mixed uses (originally in Sections 406.4.6, 406.5.3, and 406.8.1) - Mixed occupancies requirements are applied to Open parking, Enclosed parking, and Repair Garages. The general requirement for open and enclosed parking garages in Section 406.4.6 references Section 508.1, whereas the requirement specifically for Open parking garages in Section 406.5.3 references several additional sections. Private Garages has its own specific mixed use requirement. Motor-Fuel dispensaries direct the user to the IFC and 407.1 and 407.2. A combined requirement clarifies the application.

9. Equipment and appliances – Sections 304.3 and 304.3.1 of the IMC provide specific requirements for the installation of equipment and appliances in any motor vehicle related occupancy. Section 304.3.1 of the IMC has additional exceptions for the installation of fuel-fired appliances in parking garages than Section 406.4.7 of the IBC. This new requirement correlates the IBC with the IMC.

10. Hydrogen-generating appliances and refueling systems - This new provision would provide minimum requirements to provide minimum safeguards for the installation of these appliances and systems, where provided in any motor vehicle related occupancy. Specific requirements, including ventilation, are provided in Chapter 7 of the IFGC for the installation of hydrogen-generating appliances and refueling systems.

Cost Impact: Will not increase the cost of construction

Cost impact. This code change proposal will not increase the cost of construction. The proposal attempts to clarify the code, but does not make any technical changes to code requirements.

Analysis: A review of the standards proposed for inclusion in the code, UL2202-09 (2012) - Standard for Electric Vehicle (EV) Charging System Equipment, 2013, and UL2594-13 - Standard for Electric Vehicle Supply Equipment, 2013, 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.

G 95-15 : 406-KULIK4756

G 96-15

202 (New), 406.2

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

2015 International Building Code

Add new text as follows:

SECTION 202 DEFINITIONS

REPAIR GARAGE A building, structure or portion thereof used for servicing or repairing motor vehicles.

406.2 Definitions. The following terms are defined in Chapter 2:

MECHANICAL-ACCESS OPEN PARKING GARAGES.

OPEN PARKING GARAGE.

PRIVATE GARAGE.

RAMP-ACCESS OPEN PARKING GARAGES.

REPAIR GARAGE

Reason: The term "repair garage" is used in the building code (primarily Section 406.8), but is not defined in the building code. Including the definition from the fire code will assist the user of the building code for these facilities.

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

Cost Impact: Will not increase the cost of construction

This code proposal will not increase the cost of construction. This proposal provides clarity by defining a term already used in the building code with a definition already established in the fire code.

G 96-15 : 406.2-KULIK4796

G 97-15

406.3

Proponent: William King, City of Alexandria, representing Virginia Building Code Officials Association
(william.king@alexandriava.gov)

2015 International Building Code

Revise as follows:

406.3 Private garages and carports. Private garages and carports shall comply with Sections 406.3.1 through 406.3.6.

Exception: Private garages conforming to the requirements of public parking garage in accordance with Section 406.4.

-

Reason: Based upon the current definition of private garage, a parking garage for an apartment building would be a private garage and subject to limitations including a size limitation of 1,000 sf unless separated with fire barriers. In highly urbanized jurisdictions, parking for apartment complexes are provided either separate parking garages or underground parking. This parking is exclusively for the use of the tenants so would qualify as a private garage. These structures are currently constructed as either open or enclosed parking garages due to the number of cars and the scale of the structures. Limiting the size of these larger parking structures appears to be an unintended consequence of this new definition and without this exception large scale parking garages used just by the building's tenants would effectively be prohibited. This exception would restore the options that were previously available and widely utilized. Given the occupants familiarity with garages that they park in every day, these private garages would provide a higher level of occupant safety than an equivalent public garage if designed to the same standard.

Cost Impact: Will not increase the cost of construction

Given that the current code would require private parking garages to be subdivided into 1,000 sf sections with fire barriers and associated opening protectives. This exception would remove all of this additional construction therefor reducing the cost of construction.

G 97-15 : 406.3-KING3250

G 98-15

406.3.1

Proponent: Jay Hyde, representing Sacramento Valley Association of Building Officials (jhyde@mognot.com)

2015 International Building Code

Revise as follows:

406.3.1 Classification. Private garages and carports shall be classified as Group U occupancies. Each private garage shall be not greater than 1,000 square feet (93 m²) in area. Multiple private garages are permitted in a building where each private garage is separated from the other private garages by 1-hour *fire barriers* in accordance with Section 707, or 1-hour *horizontal assemblies* in accordance with Section 711, or both.

Exception: The area of a private garage that is accessory to an R-3 occupancy shall not be greater than 3,000 square feet (279 m²).

Reason: the 2012 edition of the International Building Code reduced the allowable size of all private garages to 1,000 square feet in area. Section 406.3.1 substantially upgraded the separation requirements between a private garage and the remainder of the building, including for R-3 occupancies. Many R-3 dwellings are designed with large garages, often to house the collections of automobile collectors. It does not seem reasonable to classify these garages as an S2 enclosed parking garage with its accompanying ventilation requirements required by Section 406.2.

Cost Impact: Will not increase the cost of construction

May decrease the cost due to the elimination of a ventilation system clearly designed for a multiple occupant parking facility.

G 98-15 : 406.3.1-HYDE5262

G 99-15

406.5.1

Proponent: Maureen Traxler, Seattle Dept of Planning & Development, representing Washington Association of Building Officials Technical Code Development Committee (maureen.traxler@seattle.gov)

2015 International Building Code

Revise as follows:

406.5.1 Construction. *Open parking garages* shall be of Type I, II or IV construction. *Open parking garages* shall meet the design requirements of Chapter 16. For *vehicle barriers*, see Section 406.4.3.

Exception: Open parking garages are permitted to be of Type III or V construction if they comply with the allowable heights and areas specified in Sections 504 and 506 as modified by Section 507.

Reason: As the code is currently written, all open parking garages are required to comply with Section 406.6, which prohibits Types III and V construction. There are two major differences in the way open and enclosed garages are treated--open parking garages are allowed increased height and area; and open parking garages are not required to provide mechanical ventilation. This proposal allows open parking garages that meet the height and area limitations of Chapter 5 to be of Type III or V construction. These garages are allowed to substitute the openess required by Section 406.5.2 for the mechanical ventilation that would otherwise be required. Section 406.6.1 tells us that parking garages that don't meet the openess requirements for open parking garages are limited to chapter 5's height and area provisions. This proposal addresses garages that meet both the openess requirements and the Chapter 5 provisions.

Cost Impact: Will not increase the cost of construction

This change will not increase the cost of construction because it will allow parking garages to be constructed of less-costly materials without mechanical ventilation systems.

G 99-15 : 406.5.1-TRAXLER4747

G 100-15

TABLE 406.5.4

Proponent: Anthony Apfelbeck, City of Altamonte Springs Building/Fire Safety Division, representing City of Altamonte Springs (ACApfelbeck@altamonte.org)

2015 International Building Code

Revise as follows:

**TABLE 406.5.4
OPEN PARKING GARAGES AREA AND HEIGHT**

TYPE OF CONSTRUCTION	AREA PER TIER (square feet)	HEIGHT (in tiers)		
		Ramp access	Mechanical access	
			Automatic sprinkler system	
			No	Yes
IA	Unlimited	Unlimited	Unlimited	Unlimited
IB	Unlimited	12 tiers	12 tiers	18 tiers
IIA	50,000	10 tiers	10 tiers	15 tiers
IIB	50,000	8 tiers	8 tiers	12 tiers
IV	50,000	4 tiers	4 tiers	4 tiers

For SI: 1 square foot = 0.0929 m².

Reason: A review of the code commentary and the hazard presented by ramp access vs mechanical access does not appear to provide any justification for a more restrictive height limitation on Ramp Access vs Mechanical Access. Nor does evidence provide any justification as why a mechanical access system should not receive a similar credit for automatic sprinklers as a ramp access system. This proposal eliminates the distinction between ramp access and mechanical systems.

Cost Impact: Will not increase the cost of construction

Application of the mechanical access height limits to the ramp access will reduce the cost of construction in some limited applications by providing increased flexibility of design.

G 100-15 : T406.5.4-APFELBECK4057

G 101-15

TABLE 406.5.4

Proponent: Stephen Skalko, representing Precast/Prestressed Concrete Institute (svskalko@cox.net)

2015 International Building Code

Revise as follows:

**TABLE 406.5.4
OPEN PARKING GARAGES AREA AND HEIGHT**

TYPE OF CONSTRUCTION	AREA PER TIER (square feet)	HEIGHT (in tiers)		
		Ramp access	Mechanical access	
			Automatic sprinkler system	
			No	Yes
IA	Unlimited	Unlimited	Unlimited	Unlimited
IB	Unlimited	12 tiers	12 tiers	18 tiers
IIA	117,000-50,000	10 tiers	10 tiers	15 tiers
IIB	78,000-50,000	8 tiers	8 tiers	12 tiers
IV	50,000	4 tiers	4 tiers	4 tiers

For SI: 1 square foot = 0.0929 m².

Reason: During the development of the International Building Code the drafting committees commonly used the least stringent fire safety provisions from one of the legacy codes (i.e. BOCA National Building Code, Standard Building Code, Uniform Building Code) in establishing the requirements. However, for open parking garages the least stringent values in the Standard Building Code (SBC) were not used. The SBC permitted open parking structures of non-combustible construction with less fire resistance (i.e. SBC Type IV construction, IBC Type II construction) to be built up to 400,000 sqft in area per tier. This area value, which was placed in the SBC in the early 1980's, was based on the use of noncombustible materials for construction of the open parking structure, the open sided features for the parking structure which reduced the risk of adverse impact from vehicle fires and the documented low fire risk vehicles pose to the stability of open parking structures[1],[2].

Additional studies of fire experience in open parking structures in the United States since those earlier ones still supports the conclusion that vehicle fires pose a low fire risk to the parking structure. The more recent analysis of parking garage structure fires (i.e NFPA[3], Parking Market Research Company [4]) by the Fire Safety

Committee of the Parking Consultants Council concluded that in about 98.7% of the fires no structural damage occurred due to the parking structure fires studied[5]. This suggests that the present values in Table 406.5.4 for Open Parking Garages of IBC Type II construction are more stringent than necessary based on the low risk of fire damage to the structural elements from vehicle fires and should be permitted to increase.

Parking garages are classified as Group S-2, Low-hazard occupancies in Section 311.3 of the IBC, whether open or enclosed. For enclosed parking garages Table 506.2 permits sprinklered multi-story garages to be 117,000 square feet in area for Type IIA construction and 78,000 square feet for Type IIB construction. Table 406.5.4 recognizes the benefit of having open sides in the parking garage to reduce the risk from fire in lieu of providing sprinkler protection. Based on the low fire risk from vehicle fires and the open sided features of these garages this proposal will permit open parking garages of Type II construction to be built to the same areas permitted for sprinklered enclosed parking garage.

Bibliography: [1] Harris, Dr. Leslie, Market Research Associates, Survey of Fire Experience in Automobile Parking Structures in the United States and Canada, January 31, 1972.

[2] Harris, Dr. Leslie, Market Research Associates, 1979 Update of the Survey of Fire Experience in Automobile Parking Structures in the United States and Canada, January 31, 1979.

[3] Ahrens, Marty, National Fire Protection Association, Structure and Vehicle Fires in General Vehicle Parking Garages, January 2006

[4] Dendra, Dale F., Parking Market Research Company, McLean, VA, Parking Garage Fires (A Statistical Analysis of Parking Garage Fires in the United States 1986-1988), April 1992

[5] Parking Consultants Council Fire Safety Committee, Parking Structure Fire Facts, December 2008

Cost Impact: Will not increase the cost of construction

Open parking garages of Type II construction that exceed 50,000 square feet must be built to requirements of at least Type IB construction. Permitting larger open parking garages of Type IIA and IIB construction will result in a reduction in cost through savings in material and construction methods required for buildings that meet Type IB construction.

G 102-15

406.6.2

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

2015 International Building Code

Revise as follows:

406.6.2 Ventilation. A mechanical *ventilation system and an exhaust system* shall be provided in accordance with Sections 404 and 502.13 of the International Mechanical Code.

Reason: Section 404 of the IMC provides specific requirements for the ventilation of an enclosed parking garage. There are additional requirements for the exhaust system for enclosed parking garages in Section 502.13 of the IMC. Identifying the specific sections will assist in ensuring all mechanical requirements for parking garages are used. This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

Cost Impact: Will not increase the cost of construction

This code change proposal will not increase the cost of construction. The proposal attempts to clarify the code, but does not make any technical changes to code requirements.

G 102-15 : 406.6.2-KULIK4799

G 103-15

406.6.2

Proponent: Jay Hyde, representing Sacramento Valley Association of Building Officials (jhyde@mognot.com)

2015 International Building Code

Revise as follows:

406.6.2 Ventilation. A mechanical *ventilation* system shall be provided in accordance with the *International Mechanical Code*.

Exception: Mechanical ventilation shall not be required for enclosed parking garages that are accessory to Group R-3 occupancies.

Reason: The 2015 International Building Code reduced the allowable area of a Private Garage to 1,000 sq. ft. Larger garages are frequently required by automobile collectors. These garages would not be subject to uncontrolled use by unrelated individuals. The ventilation required to remove exhaust fumes from multiple vehicles running at the same time seems excessive for a R3 residence, regardless of the size of the garage.

Cost Impact: Will not increase the cost of construction

It may reduce cost of construction by allowing unventilated garages serving R3 occupancies.

G 103-15 : 406.6.2-HYDE5789

G 104-15

407.2.1

Proponent: John Williams, CBO, Chair, representing Adhoc Health Care Committee (AHC@iccsafe.org)

2015 International Building Code

Revise as follows:

407.2.1 Waiting and similar areas. Waiting areas ~~and similar, public-use areas, or group meeting~~ spaces constructed as required for *corridors* shall be permitted to be open to a *corridor*, only where all of the following criteria are met:

1. The spaces are not occupied as care recipient's sleeping rooms, treatment rooms, incidental uses in accordance with Section 509, or hazardous uses.
2. The open space is protected by an automatic fire detection system installed in accordance with Section 907.
3. The *corridors* onto which the spaces open, in the same *smoke compartment*, are protected by an automatic fire detection system installed in accordance with Section 907, or the *smoke compartment* in which the spaces are located is equipped throughout with quick-response sprinklers in accordance with Section 903.3.2.
4. The space is arranged so as not to obstruct access to the required *exits*.

Reason: The terminology "similar spaces" is vague and prone to interpretation. This change will allow for clarification of the original intent of the language. By amending this terminology to "public use areas" or "group meeting spaces" it will allow spaces such as family gathering areas, child play areas in children's wards, conservatories/game room/social interaction areas in long term recovery that are constructed as required for corridors and meet all of the established requirements to be permitted to be open to a corridor. Allowing these areas to be open to the corridor will provide better oversight and security of these areas thus allowing for quicker responses by staff to issues that develop in these areas. With the ban of smoking within hospitals there is not a risk of smoking within these areas and having these areas open to the corridor will allow staff to quickly sense and respond to any smoking that does occur. Being public spaces the need for privacy is not an issue. This change mirrors what is currently permitted in a nursing home environment and provide for a more open and inviting atmosphere.

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

Cost Impact: Will not increase the cost of construction
This is a clarification; therefore, there is no change in cost.

G 105-15

407.2.6

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

2015 International Building Code

Revise as follows:

407.2.6 Nursing home cooking facilities. In Group I-2, Condition 1, occupancies, rooms or spaces that contain a cooking facility with domestic cooking appliances shall be permitted to be open to the corridor where all of the following criteria are met:

1. The number of care recipients housed in the smoke compartment ~~is~~shall not be greater than 30.
2. The number of care recipients served by the cooking facility ~~is~~shall not be greater than 30.
3. Only one cooking facility area ~~is~~shall be permitted in a smoke compartment.
4. The types of domestic cooking appliances permitted ~~are~~shall be limited to ovens, cooktops, ranges, warmers and microwaves.
5. The corridor ~~is~~shall be a clearly identified space delineated by construction or floor pattern, material or color.
6. The space containing the domestic cooking facility shall be arranged so as not to obstruct access to the required exit.
7. ~~A domestic~~ Domestic cooking hoods installed and constructed in accordance with Section 505 of the *International Mechanical Code* ~~is~~shall be provided over the cooktop or range cooktops and ranges.
8. ~~The domestic cooking hood provided over the cooktop or range~~ Cooktops and ranges shall be equipped with an automatic fire-extinguishing system of a type recognized for protection of domestic cooking equipment. ~~Preengineered automatic extinguishing systems shall be tested~~ protected in accordance with UL 300A and ~~listed and labeled for the intended application. The system shall be installed in accordance with this code, its listing and the manufacturer's instructions~~ Section 904.13.
9. ~~A manual actuation device for the hood suppression system shall be installed in accordance with Sections 904.12.1 and 904.12.2.~~
10. ~~An interlock device shall be provided such that upon activation of the hood suppression system, the power or fuel supply to the cooktop or range will be turned off.~~
10. A shut-off for the fuel and electrical power supply to the cooking equipment shall be provided in a location that is accessible only to staff.
11. A timer shall be provided that automatically deactivates the cooking appliances within a period of not more than 120 minutes.
12. A portable fire extinguisher shall be ~~installed~~ provided. ~~Installation shall be in accordance with Section 906 of and the~~ *International Fire Code* extinguisher shall be located within a 30-foot (9144 mm) distance of travel from each domestic cooking appliance.

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

During the 2015 code cycle requirements were added to allow domestic cooking appliances to be installed in areas of Group I-2, Condition 1 occupancies that are open to the corridor when certain conditions were met. That included protecting cooktops and ranges with UL 300A compliant extinguishing systems in the hood. This proposal accomplishes the following:

1. Introduces mandatory language into Section 407.2.6
2. Allows an option for cooktops and ranges with listed ignition resistant burners to be provided in lieu of a UL 300A extinguishing system. These types of systems are investigated to verify that pans and cooking materials do not exceed 350 degrees C (662 degrees F). Recent work by the Fire Protection Research Foundation confirms that burners meeting these specifications are highly unlikely to ignite cooking materials. See: <http://www.nfpa.org/research/fire-protection-research-foundation/reports-and-proceedings/other-research-topics/analytical-modeling-of-pan-and-oil-heating-on-an-electric-coil-cooktop>

There will be a Group B corresponding code change proposal to IFC Section 904.13. The ICC Fire Code Action Committee (FCAC) supports this proposal and will be submitting the Group B proposal that follows:

904.13 Domestic cooking systems in Group I-2 Condition 1. In Group I-2 Condition 1, occupancies where cooking facilities are installed in accordance with Section 407.2.6 of this code, cooktops and ranges shall be protected in accordance with one of the following. ~~the domestic cooking hood provided over the cooktop or range shall be equipped with an automatic fire-extinguishing system of a type recognized for protection of domestic cooking equipment. Preengineered automatic extinguishing systems shall be tested in accordance with UL 300A and listed and labeled for the intended application. The system shall be installed in accordance with this code, its listing and the manufacturer's instructions.~~

1. Cooktops and ranges shall include heating elements or burners that have been tested and listed to not allow cooking pan temperatures to exceed 662 degrees F (350 degrees C), or
2. The domestic cooking hood provided over the cooktop or range shall be equipped with an automatic fire-extinguishing system complying with both of the following:
 - a. The automatic fire-extinguishing system shall be of a type recognized for protection of domestic cooking equipment. ~~Preengineered automatic extinguishing systems shall be tested in accordance with UL 300A and listed and labeled for the intended application. The system shall be installed in accordance with this code, its listing and the manufacturer's instructions, and~~
 - b. Manual actuation and system interconnection for the hood suppression system shall be installed in accordance with Sections 904.12.1 and 904.12.2, respectively.

~~904.13.1 Manual system operation and interconnection. Manual actuation and system interconnection for the hood suppression system shall be installed in accordance with Sections 904.12.1 and 904.12.2, respectively.~~

~~904.13.2 Portable fire extinguishers for domestic cooking equipment in Group I-2 Condition 1. A portable fire extinguisher complying with Section 906 shall be installed within a 30-foot (9144 mm) distance of travel from domestic cooking appliances.~~

Cost Impact: Will not increase the cost of construction

This code change proposal will not increase the cost of construction. It includes editorial revisions and adds an option to the existing requirements to use ignition prevention cooktops.

G 106-15

407.4.1.1

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

2015 International Building Code

Revise as follows:

407.4.1.1 Locking devices. Locking devices that restrict access to a care recipient's room from the *corridor* and that are operable only by staff from the *corridor* side shall not restrict the *means of egress* from the care recipient's room.

Exceptions:

1. This section shall not apply to rooms in psychiatric treatment and similar care areas.
2. Locking arrangements in accordance with Section 1010.1.9.6 or 1010.1.9.7.

Reason: Clarifying / explicitly allowing delayed egress locking systems in this application in the unlikely event a delayed egress locking system is desirable for this application.

Delayed egress locking systems are currently not precluded from this application by the "shall be permitted" language and requirements of 1010.1.9.7.

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

Cost Impact: Will not increase the cost of construction

No cost impact unless the building owner chooses to install this locking arrangement.

G 106-15 : 407.4.1.1-KULIK3664

G 107-15

407.5

Proponent: John Williams, CBO, Chair, representing Adhoc Health Care Committee (AHC@iccsafe.org)

2015 International Building Code

Revise as follows:

407.5 Smoke barriers. *Smoke barriers* shall be provided to subdivide every *story* used by persons receiving care, treatment or sleeping ~~and, into~~ not fewer than two smoke compartments. ~~Smoke barriers shall be provided to divide~~ subdivide other *stories* with an *occupant load* of 50 or more persons, into no fewer than two *smoke compartments*. The smoke barrier shall be in accordance with Section 709.

407.5.1 Smoke compartment size. ~~Such~~ Stories shall be divided into smoke compartments with an area of not more than 22,500 square feet (2092 m²) in Group I-2, Condition 1, and not more than 40,000 square feet (3716 m²) in Group I-2, Condition 2 occupancies ~~and~~.

407.5.2 Exit access travel distance. The distance of travel from any point in a smoke compartment to a smoke barrier door shall be not greater than 200 feet (60 960 mm).

Reason: This proposal clarifies the requirements for at least two compartments on a floor by separating section into separate sentences and sections.

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

Cost Impact: Will not increase the cost of construction

This proposal is for clarification only, therefore, there are no changes to construction requirements or the cost of construction.

G 107-15 : 407.5-WILLIAMS4234

G 108-15

407.5

Proponent: John Williams, CBO, Chair, representing Adhoc Health Care Committee (AHC@iccsafe.org)

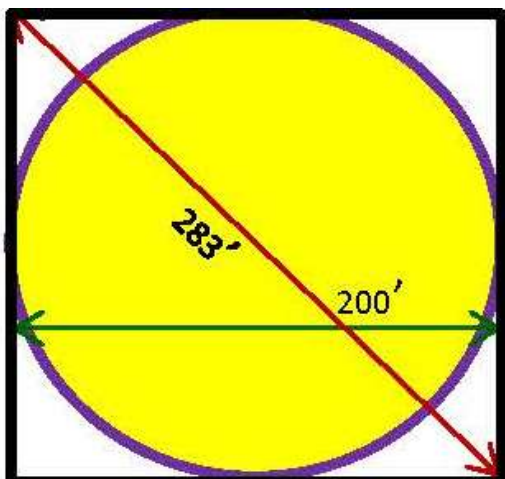
2015 International Building Code

Revise as follows:

407.5 Smoke barriers. *Smoke barriers* shall be provided to subdivide every *story* used by persons receiving care, treatment or sleeping and to divide other *stories* with an *occupant load* of 50 or more persons, into no fewer than two *smoke compartments*. Such stories shall be divided into *smoke compartments* with an area of not more than 22,500 square feet (2092 m²) in Group I-2, Condition 1, and not more than ~~40,000~~31,400 square feet (~~3746~~2197 m²) in Group I-2, Condition 2, and the distance of travel from any point in a *smoke compartment* to a *smoke barrier* door shall be not greater than 200 feet (60 960 mm). The *smoke barrier* shall be in accordance with Section 709.

Reason: 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 original square footage for Group I-2, smoke compartments was based on the product of the 150 foot travel distance which equals 22,500 square feet. During the 2015 code change cycle the Ad hoc Committee on Healthcare (AHC) presented the reason statement below to justify the increase of space within the Group I-2, Condition 2 facilities to allow for additional smoke compartment sizing to accommodate for the required increase of patient care and treatment areas to 40,000 sf. This size was, like the previous size, based on the limiting factor of the travel distance being the product of a 200 foot travel distance. Over the last couple of years interested parties have called to question the rationality of the 40,000 sf since due to room and corridor configurations it is not possible to achieve a smoke compartment of 40,000 sf. To collaborate with these interested parties the AHC has attempted to achieve a more realistic smoke compartment size based on the 200 foot travel distance. Since the travel distance is the true limiting factor using this distance in a more restrictive geometrical fashion – that of the area of a circle instead of a square – will therefore provide the true restriction for the actual square footage based on the actual travel distance from a given point. The area of a circle with a diameter of 200 feet is approximately 31,416 square feet. The AHC therefore recommends that the square footage for smoke zones be changed to better reflect this more restrictive requirement of the travel distance by changing the 40,000 sf to 31,400 sf.



This graphic indicates the more restrictive nature of the circular geometrical shape and although not a typical construction shape using this geometrical shape to determine the allowable square footage for a smoke compartment will more appropriately reflect the restrictive nature of the 200 foot travel distance. By providing the additional square footage over the previous 22,500 square feet this change will still meet the intent of the original request to increase the square footage and provide the additional area needed to meet the increased requirements of patient treatment areas while yet more appropriately reflecting the desired restriction of the 200 foot travel distance.

ORIGINAL REASON STATEMENT FOR 40,000 SF SMOKE ZONE:

Reason: This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 5 open meetings and over 80 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>

This code change addresses outdated code material. Historically, smoke compartment size has been driven by the allowable travel distance within the smoke compartment. Past code changes have increased the travel distance without a corresponding change in smoke compartment size. Secondly, the size of the functional patient areas has increased, but the occupant load has remained the same or has been reduced. Therefore, we are asking for an increase in smoke compartment size to accommodate the operational needs of the modern hospital.

A summary of the history of smoke compartment requirements is as a requirement is as follows:

- October 1984 BCMC – Maximum length and width equals 150 feet.
- 1987 BOCA – 610.5 – Maximum length and width equals 150 feet
- 1992 BOCA Supplement – 610.4 – 22,500 square feet, with maximum travel distance of 150 feet.
- Code Change No. B20-95 – 22,500 square feet, with maximum travel distance proposed to be increased to 200 feet.
- 1996 BOCA – 409.4 - 22,500 square feet, with maximum travel distance of 200 feet.
- 2000 IBC – 407.4 - 22,500 square feet, with maximum travel distance of 200 feet.

Originally, there was no limit to smoke compartment size, other what was imposed by travel distance. The 22,500 square foot requirement was based on the old travel distance requirement of 150 feet, and used it to extrapolate an area (150ft x 150ft = 22,500 square feet). This proposal uses the same logic and applies the current 200 foot travel distance maximum (200ft x 200ft), resulting in a 40,000 square foot smoke compartment. This proposal would maintain the existing requirement that each floor be divided into two smoke compartments. Practically the requirement for 200' travel distance within smoke compartments will still drive smaller smoke compartment sizes in some cases.

Over the past 20 years, there has been a steady increase in the size of patient treatment rooms in hospitals. The primary reason for the increase is the equipment and utilities

necessary for the treatment of a patient, such as patient monitoring, gases, and diagnostics equipment, while maintaining space for staff access to the patient. In response, the widely adopted and enforced "Guidelines for the Design and Construction of Health Care Facilities" from the FGI Institute have also increased, making these operational considerations actual code requirements. In the case of the inpatient units, the adoption of a single bed in a patient room has had the largest impact on square footage, while not significantly increasing the number of occupants on the unit.

The concept of an "individual patient space" is becoming the standard design in other types throughout the hospital. Many emergency departments are opting for private patient exam spaces with hard walls, primarily for infection control and patient privacy considerations. Similarly, radiology areas are being driven by technology and clearance issues which go beyond the required minimums, and have impacts on square footages to achieve clearances. In some units, there has also been an increase in the types of required support spaces, including ratios of equipment storage per treatment room, the increased importance of computer equipment rooms, and various staff areas. However, support spaces have remained largely the same, while the main increases have been in the size of the patient treatment areas themselves. While these spaces have been increasing in size, the smoke compartment size requirements have been left unchanged in the building codes.

When studying the contemporary sizes of functions such as emergency departments, radiology operations, and bed units, the larger size allows for greater visualization from the staff to the patient, which is a crucial aspect of planning a patient area. This operational consideration could more easily be achieved before the increase in patient areas, but the same operational considerations require an increase to the smoke zone size to match contemporary requirements, delivery of care and technologies. Attached is a study of space programs which compare the 2010 Guideline requirements with the 1996-97 Guidelines. In short, today's hospital takes more square footage to care for the same amount of patients. These programs demonstrate the need to increase to 40,000 square foot smoke compartment. See program analysis at the following link.

<http://www.iccsafe.org/cs/AHC/Pages/WG-General.aspx>

Cost Impact: Will increase the cost of construction

The increase will vary depending on the design and size of each facility. By reducing the size of the smoke compartment, it could increase the number of smoke barriers required.

G 108-15 : 407.5-WILLIAMS4235

G 109-15

407.5

Proponent: Vickie Lovell, InterCode Incorporated, representing Fire Safe North America (vickie@intercodeinc.com)

2015 International Building Code

Revise as follows:

407.5 Smoke barriers. *Smoke barriers* shall be provided to subdivide every *story* used by persons receiving care, treatment or sleeping and to divide other *stories* with an *occupant load* of 50 or more persons, into no fewer than two *smoke compartments*. Such stories shall be divided into *smoke compartments* with an area of not more than 22,500 square feet (2092 m²) in Group I-2, ~~Condition 1, and not more than 40,000 square feet (3716 m²) in Group I-2, Condition 2, and the~~ The distance of travel from any point in a *smoke compartment* to a *smoke barrier* door shall be not greater than 200 feet (60 960 mm). The *smoke barrier* shall be in accordance with Section 709.

Exceptions

1. A smoke compartment in Group I-2, Condition 2, is permitted to have an area of not more than 35,000 square feet (3252 m²) provided all patient rooms within that smoke compartment are configured for one single bed per room.
2. A smoke compartment in Group I-2, Condition 2, is permitted to have an area of not more than 40,000 square feet (3716 m²) used primarily as a radiology suite. For the purposes of this exception, a radiology suite is a dedicated space that includes the area for MRI, general radiology, PET, CT, fluoroscopy, interventional radiology or gamma camera procedures and their needed support and staff areas, without any patient sleeping rooms.

Reason: The discussions of the Ad Hoc Healthcare group in the 2015 development cycle indicated that the larger smoke compartments were needed due to healthcare construction and design moving exclusively to one patient per room. In support of that, they had their spreadsheets that detailed exactly how many square feet every different room within a smoke compartment required to create a properly functioning unit, and then added up all of those square feet. Except for a radiology suite, which their spreadsheet indicated would now require the increase to 40,000 sq. ft., 35,000 sq. ft. would be sufficient for the other documented unit types (inpatient beds, emergency department with pediatrics, intensive care unit) as is recommended in this proposal.

In addition, knowing that the IBC is used in other countries as a model code, and in other countries the norm may be 2 patients (or more) per room, this would clearly indicate that the new, larger smoke compartments are only to be considered if and when a hospital goes to the 1 patient-per-room layout.

**International Code Council
Ad-Hoc Committee for Healthcare**

Inpatient Bed Unit - Generic Program

Item	Space Name	2010 Guideline Planning			1996-97 Guideline Planning			Actual Occupants	Comments
		Module (SF)	Qty.	Total SF	Module (SF)	Qty.	Total SF		
1	Patient Area								
2	Patient Room	300	29	8,700	200	15	3,000	29	2010: 1 Bed per room. 1996-97: 2 Bed per room.
3	Patient Seclusion Room	not applicable			200	1	200		
4	Isolation Patient Room	350	4	1,400	120	4	480	4	
5	Specialty Treatment Room	350	1	350	120	1	120	1	
6	Work Alcove	68	2	136	68	2	136		
7									
8	Staff Areas								
9	Nurses Station 1	276	1	276	276	1	276		
10	Nurses Station 2	297	1	297	not required on smaller floor			10	Staff Nurses Actual (max)
11	Nurses Station 3	237	2	474	237	2	474	1	Staff Nurse Manager
12	Nurses Station 4	350	1	350	not required on smaller floor			1	Staff Unit Secretary
13	Nurse Supervisor / Phys Charting	475	1	475	475	1	475	4	Staff Physicians/Fellows/Residents (Transient)
14	Staff Storage / Locker Room	229	1	229	229	1	229	4	Staff EVS/Physical Plant/Kitchen/Materials Management (Transient)
15	Documentation Area	93	5	465	93	5	465	3	Staff Nurse Aids
16	Multipurpose Room	386	1	386	386	1	386		
17	Staff Lounge / Toilet	326	1	326	264	1	264		
18	Interdisciplinary Room	374	1	374	not required				
19	Unit Support	465	1	465	465	1	465		
20									
21	Support Spaces								
22	Environmental Services	78	2	156	78	1	78		
23	Soiled Holding / Workroom	355	1	355	355	1	355		
24	Clean Supply	202	2	404	202	2	404		
25	Medication Dispensing	259	2	518	259	2	518		
26	Equipment & Supply Storage	666	1	666	666	1	666		Includes storage for linen, emergency equipment, stretchers and wheelchairs
27	Nourishment Station	205	1	205	205	1	205		
28	Equipment Alcoves	404	1	404	300	1	300		Throughout, for equipment staging off corridor
29	Visitor Lounge / Resource Center	416	1	416	not required			18	Represents family members on unit at any given time
30	Electrical	321	1	321	80	2	160		
31	Telecomm	319	2	638	not required				
32	Stair	184	3	552	184	3	552		
33	Utility Shafts	200	4	800	200	4	800		
34	Patient Toilet Rooms	not req'd at single patient room			64	3	192		
35									
36									
37	Subtotal: Net Square Feet			20,138			11,200		
38									
39	Circulation Factor (1.70)		14,030			7,803		Actual
40									
41	Total Design Gross Square Feet			34,168			19,003		
42									
43	Building Gross Factor 1.25 (N/A)			0			0		
44									
45	Total Building Gross Area			34,168			19,003		
46									University of PA Health System
47				2010 Calculated Occupant Load (250 sf/occupant)				137	Substantiation for larger square footage in
48				1996-97 Calculated Occupant Load (250 sf/occupant)				76	smoke compartments
49				Actual Occupant Load (From Above)				75	InpatientBedUnit

**International Code Council
Ad-Hoc Committee for Healthcare**

Emergency Department with Pediatrics - Generic Program

planning.dsh.ccm.org



Francis Cauffman

Item	Space Name	2010 Guideline Planning			1996-97 Guideline Planning			Actual Occupants	Comments
		Module (SF)	Qty.	Total SF	Module (SF)	Qty.	Total SF		
1	Reception/Waiting								
2	Walk-in Vestibule	120	1	120	120	1	120		
3	Ambulance Vestibule	140	1	140	140	1	140		
4	Reception/Greeter	120	1	120	not required			1	Greeter
5	Security Office	120	1	120	not required			1	Security Officer
6	Triage Exam	140	3	420	120	3	360	3	Patients
7	Triage Sub-Waiting	20	12	240	20	12	240	6	Waiting Occupants
8	Registration Stations	60	2	120	60	2	120	2	Staff
9	Registration: Clerical Work Area	120	1	120	120	1	120	2	Clerks
10	Adult Waiting	20	30	600	20	30	600	15	Waiting Occupants
11	Pediatric Waiting	20	15	300	20	15	300	8	Waiting Occupants
12	Pediatric Play	120	1	120	120	1	120	0	Service area to above
13	Toilets - Public	50	2	100	50	2	100		
14	Vending	60	1	60	60	1	60		
15	Co-Pay and Fiscal Advisor	110	1	110	not required			1	Financial Advisor
16	Consult/Reevaluation Room	110	1	110	110	1	110		
17	Wheelchair Storage	5	4	20	5	4	20		
18	Subtotal			2,820			2,410		
19									
20	Adult Clinical Care								
21	Treatment Space								
22	Standard Exam/Treatment	155	19	2,945	80	19	1,520	19	Patients
23	Exam/Treat - Isolation	155	2	310	120	2	240	0	Accounted for in Bays
24	Pediatric Exam	220	2	440	not required			0	Accounted for in Bays

25	ENT	155	1	155	120	1	120	0	Accounted for in Bays
26	OB/Gyn Exam	155	1	155	120	1	120	0	Accounted for in Bays
27	OB/Gyn TLT	50	1	50	50	1	50	0	Accounted for in Bays
28	Swing/Psych	180	2	360	120	2	240	0	Accounted for in Bays
29	Major Trauma/Resusc	275	3	825	250	3	750	1	Patient. Staff accounted elsewhere
30	Patient Toilet	50	4	200	50	4	200		
31	Direct Clinical Support								
32	Clinical Workstation	400	1	400	400	1	400	6	Nurse Staff
33	Clinical Touchdown	60	4	240	60	4	240	2	Attending, Fellow
34	MD Charting	50	6	300	50	6	300	2	Visiting Physician
35	Meds	100	2	200	100	2	200		
36	Nourishment	80	2	160	80	2	160		
37	Clinical Support	160	1	160	160	1	160		
38	Clean Supply	180	1	180	180	1	180		
39	Soiled Utility	120	1	120	120	1	120		
40	Equipment Storage	160	1	160	160	1	160		
41	Clean Linen storage	20	4	80	20	4	80		
42	Crash Cart Alcoves	10	2	20	10	2	20		
43	Stat Lab	80	1	80	not required				
44	Staff Toilets on Floor	50	2	100	50	2	100		
45	HAC	50	1	50	50	1	50		
46		Subtotal		10,750			7,950		
47	Dedicated Pediatric Hybrid								
48	Family Waiting	20	6	120	20	6	120	6	Waiting Occupants
49	Family Support Lounge	150	1	150	150	1	150		
50	Inpatient Short Stay								
51	Patient Room	220	6	1,320	120	6	720	12	Patient and Parent
52	Patient Room/Semiprivate	240	2	480	160	2	320	5	Patient and Parent
53	Patient Toilet Room	55	8	440	55	8	440		
54	Play and Activities	120	1	120	120	1	120	0	Accounted for in Patient Space
55	ED Exam/Treatment								
56	Exam/Treatment Rooms	160	3	480	120	3	360	6	Patient and Parent
57	Bariatric Pediatric	220	1	220	not required				2 Patient and Parent
58	Exam/OB	160	1	160	120	1	120		
59	Patient Toilet	50	3	150	50	3	150		
60	Major Trauma/Resusc	275	1	275	250	1	250	1	Patient. Staff accounted elsewhere
61	Clinical Support								
62	Clinical Workstation	240	1	240	240	1	240	2	Nurses
63	Clinical Touchdown	60	2	120	60	2	120	1	Pediatrician
64	MD Charting	50	2	100	50	2	100	2	Visiting Physician
65	Family Consult	110	1	110	110	1	110		
66	Meds	80	1	80	80	1	80		
67	Nourishment	80	1	80	80	1	80		
68	Clean Utility	160	1	160	160	1	160		
69	Soiled Utility	120	1	120	120	1	120		
70	Equipment Storage	80	2	160	80	2	160		
71	Peds Crash Cart	20	1	20	20	1	20		
72	Administrative Support								
73	MD office	120	1	120	120	1	120	1	Physician
74	Nurse Manager	120	1	120	120	1	120	1	Nurse Manager
75	Staff Lounge	140	1	140	140	1	140		
76	Conference	160	1	160	160	1	160		
77	Staff Toilets	50	2	100	50	2	100		
78	Decon Shower	100	1	100	100	1	100		
79	Housekeeping	50	1	50	50	1	50		
80		Subtotal		5,895			4,730		
81									
82	Offices/Administrative Support								
83	Nursing Offices	100	4	400	100	4	400	0	Nurses (included above)
84	MD Touchdown Office	180	1	180	180	1	180	1	Physician
85	Director's Office	120	1	120	120	1	120	1	Director
86	Squad Room	80	1	80	80	1	80	2	EMT
87	Backboard Shower	10	1	10	not required				
88	Decontam. Storage	60	1	60	not required				
89	Lounge Area - Staff	140	1	140	140	1	140	0	Accounted Above
90	Shared Staff Locker Room	8	40	320	8	40	320	0	Accounted Above
91	Conference/Continuing Education	200	1	200	200	1	200		
92	Toilet / Shower - Staff	65	1	65	65	1	65		
93	Toilet - Staff	50	3	150	50	3	150		
94	Housekeeping Closet	50	1	50	50	1	50		
95		Subtotal		1,775			1,705		
96									
97									
98	Subtotal: Net Square Feet			21,240			16,795		
99									
100	Circulation Factor (1.55)			11,682			9,237		Actual
101									
102	Total Design Gross Square Feet			32,922			26,032		
103									
104									
105	Total Building Gross Area			32,922			26,032		

2010 Calculated Occupant Load (250 sf/occupant) 132
1996-97 Calculated Occupant Load (250 sf/occupant) 104
Actual Occupant Load (From Above) 112

University of PA Health System
Substantiation for larger square
footage in smoke compartments
ED with Peds Hybrid

International Code Council
Ad-Hoc Committee for Healthcare
Radiology Suite - Generic Program

Item	Space Name	2010 Guideline Planning			1996-97 Guideline Planning			Actual Occupants	Comments
		Module (SF)	Qty.	Total SF	Module (SF)	Qty.	Total SF		
1	Patient Area								
2	Waiting	20	36	720	20	36	720	18	waiting
3	Registration	64	8	512	64	8	512	8	staff
4	Consult	110	3	330	110	3	330	0	included below
5	Public Toilets	62	3	186	62	3	186		
6	Patient Education	1	56	56	not required				
7									
8	MRI Suite								
9	MRI Scan Rooms (1.5T, 3T)	430	6	2,580	325	6	1,950	6	Patients
10	MRI Control	882	1	882	100	6	600	6	Staff
11	MRI Warm Zone Vestibule	280	3	840	280	3	840		
12	MRI Equipment	280	4	1,120	150	4	600		
13	MRI Prep	275	1	275	275	1	275		
14	Patient Toilets	62	2	124	50	2	100		
15	Mens Gowned Waiting / Changing	240	1	240	240	1	240	6	patients changing
16	Womens Gowned Waiting / Changing	285	1	285	285	1	285	6	patients changing
17	General Radiology Suite								
18	General Rad Room	260	5	1,300	180	5	900	5	patients
19	Bone Densitometry	140	3	420	140	3	420	3	patients
20	Control	475	1	475	475	1	475	3	staff
21	Mens Gowned Waiting / Changing	240	2	480	240	2	480	5	patients changing
22	Womens Gowned Waiting / Changing	240	2	480	240	2	480	5	patients changing
23	Patient Toilets	62	1	62	62	1	62		
24	PET/CT Suite								
25	PET/CT Scan Room	420	2	840	350	2	700	0	included in prep/injection areas
26	PET/CT Control	120	2	240	120	2	240	2	staff
27	PET/CT Equipment	48	2	96	48	2	96		
28	Hot Lab	255	1	255	255	1	255		
29	Hot Toilet	62	1	62	62	1	62		
30	Hot Injection	130	1	130	130	1	130	2	
31	Prep Room	313	1	313	313	1	313	2	prep bays
32	CT Suite								
33	CT Scan Room	420	3	1,260	250	3	750	3	patients
34	CT Control Room	520	1	520	360	1	360	3	staff
35	CT Prep	550	1	550	300	1	300	0	included above
36	Mens Gowned Waiting / Changing	215	1	215	215	1	215	3	patients changing
37	Womens Gowned Waiting / Changing	215	1	215	215	1	215	3	patients changing
38	Patient Toilets	62	2	124	62	2	124		
39	Fluoroscopy Suite								
40	Fluoroscopy Room	405	2	810	320	2	640	2	patients
41	Patient Toilets	62	2	124	62	2	124		
42	Fluoroscopy Control	325	1	325	180	1	180	2	staff
43	Interventional Radiology Suite								
44	IR Lab	368	2	736	350	2	700	2	patients
45	Scrub	110	1	110	110	1	110		
46	IR Prep / Recovery	950	1	950	750	1	750	5	patients
47	IR Exam	220	1	220	120	1	120		
48	Patient Toilet	62	1	62	50	1	50		
49	IR Workroom	230	1	230	180	1	180	4	nurses / physician / staff working in spaces above
50	Gamma Camera Suite								
51	Gamma Camera Scan Room	315	2	630	300	2	600		
52	Control Room	230	1	230	180	1	180		
53									
54	Staff Areas								
55	Reading Room	1,950	1	1,950	800	1	800	8	workstations
56	Conference Room	675	1	675	400	1	400	0	for staff accounted in department
57	Staff Lounge	625	1	625	375	1	375	0	for staff accounted in department
58	Staff Locker	470	1	470	470	1	470	0	for staff accounted in department
59	Staff Toilet	62	1	62	62	1	62		
60	Manager Office	110	1	110	110	1	110	1	manager
61	Radiology IT Office	80	3	240	80	3	240	3	Staff
62	MD Touchdown	200	2	400	200	2	400	4	Physicians
63									
64	Support Spaces								
65	Clean Supply	642	1	642	400	1	400		
66	Soiled Utility	273	1	273	200	1	200		
67	Moveable Equipment Storage	500	1	500	300	1	300		
68	Linen Storage	400	1	400	200	1	200		
69	Film / Scanning Room	170	1	170	350	1	350		Active films only. Inactive stored off-site. 2010: digital storage only. no films stored on site
70									
71									
72	Subtotal: Net Square Feet			27,131			21,156		
73									
74	Circulation Factor (1.49)			13,269			10,366		
75									
76	Total Design Gross Square Feet			40,400			31,522		
77									

77				
78	Building Gross Factor 1.25 (N/A)		0	0
79				
80	Total Building Gross Area		40,400	31,522

University of PA Health System
Substantiation for larger square
footage in smoke compartments
Radiology

2010 Calculated Occupant Load (250 sf/occupant)	162
1996-97 Calculated Occupant Load (250 sf/occupant)	126
Actual Occupant Load (From Above)	120

International Code Council
Ad-Hoc Committee for Healthcare
Critical Care Unit - Generic Program

Item	Space Name	2010 Guideline Planning			1996-97 Guideline Planning			Actual Occupants	Comments
		Module (SF)	Qty.	Total SF	Module (SF)	Qty.	Total SF		
1	Patient Area								
2	Patient Room	200	14	2,800	150	14	2,100	21	Includes toilet in room
3	Isolation Patient Room	350	2	700	150	1	150	4	
4	Consult Room	100	2	200	not required			0	Families included in patient room count
5	Visitor Waiting Room	200	1	200	not required				
6									
7	Staff Areas								
8	Nurses Station 1	100	1	100	100	1	100	2	
9	Nurses Station 2	125	1	125	125	1	125	2	
10	Nurses Station 3	160	2	320	160	2	320	2	
11	Nurses Station 4	100	1	100	100	1	100	2	
12	Documentation Stations	60	9	540	60	9	540		At every two patient rooms
13	Charting Stations	23	2	46	23	2	46	2	Alcove at nurses station
14	Office	100	1	100	100	1	100		
15	Multipurpose Room	200	1	200	200	1	200		
16	Staff Storage / Locker Room	100	1	100	100	1	100		
17	Staff Toilet	64	3	192	64	3	192		
18									
19	Support Spaces								
20	Soiled Utility	130	1	130	130	1	130		Unit Support: Storage or Utility as required by Guidelines
21	Clean Utility	130	1	130	130	1	130		
22	Pneumatic Tube Alcove	25	1	25	25	1	25		
23	Equipment Storage	320	1	320	200	1	200		20 square feet for 16 beds (2010 requirement only)
24	Wheelchair / Stretcher Storage	100	1	100	100	1	100		
25	Environmental Services Room	80	1	80	80	1	80		
26	Lounge / Resource Center	416	1	416	416	1	416		
27	Electrical	100	1	100	100	1	100		
28	Telecomm	200	1	200	200	1	200		
29									
30									
31	Subtotal: Net Square Feet			7,224			5,454		
32									
33	Circulation Factor (1.45)			3,251			2,454		Actual
34									
35	Total Design Gross Square Feet			10,475			7,908		
36									
37	Building Gross Factor 1.25 (N/A)			0			0		
38									
39	Total Building Gross Area			10,475			7,908		

2010 Calculated Occupant Load (250 sf/occupant)	42
1996-97 Calculated Occupant Load (250 sf/occupant)	32
Actual Occupant Load (From Above)	35

University of PA Health System
Substantiation for larger square
footage in smoke compartments
IntensiveCareUnit

Cost Impact: Will increase the cost of construction

This code change will increase the cost of construction as compared to the 2015 IBC, due to the need for some additional smoke barrier walls to create the smoke compartments smaller than the 40,000 sq. ft. smoke compartments. This code change will decrease the cost of construction as compared to the 2012 IBC, all previous editions of the IBC, all three of the legacy codes, and also as compared to the Life Safety Code (through 2015), due to the smoke compartments being larger than 22,500 sq. ft., and thus needing fewer smoke barrier walls than each of those codes could have required.

G 109-15 : 407.5-LOVELL 4195

Proponent: Amanda Hickman, InterCode Incorporated, representing Fire Safe North America (amanda@intercodeinc.com)

2015 International Building Code

Revise as follows:

407.5 Smoke barriers. *Smoke barriers* shall be provided to subdivide every *story* used by persons receiving care, treatment or sleeping and to divide other *stories* with an *occupant load* of 50 or more persons, into no fewer than two *smoke compartments*. Such *stories* shall be divided into *smoke compartments* with an area of not more than 22,500 square feet (2092 m²) in Group I-2, ~~Condition 1, and not more than 40,000 square feet (3716 m²) in Group I-2, Condition 2, and the~~ The distance of travel from any point in a *smoke compartment* to a *smoke barrier* door shall be not greater than 200 feet (60 960 mm). The *smoke barrier* shall be in accordance with Section 709.

Reason: In the event of a fire, hospitals have a population with special concerns and vulnerabilities. To maintain an effective fire and smoke management system in health care environments, multiple compartments subdivided with smoke barrier walls must be incorporated and maintained in the life safety design for hospitals.

A full evacuation is often neither practical nor in the best interest of hospital patients. Therefore, the International Building Code (IBC) and NFPA 101 Life Safety Code both require that the safety of patients in hospitals be provided through the use of a defend-in-place strategy using multiple fire safety features, including construction, compartmentation, fire detection and suppression, and a well-trained staff to assist in emergency relocation/evacuation of patients.

Smoke barriers are used to separate smoke compartments. Walls and floors designed and constructed as smoke barriers separate adjacent smoke compartments in a building. Smoke barriers are required to be constructed with a minimal fire resistance rating of 1 hour. This will ensure that they are not quickly breached in the event of a fire, especially if sprinkler operation is delayed, shielded, or prevented altogether, such as due to a water supply impairment. As the name implies, smoke barriers are also intended to restrict the movement of smoke. Ensuring the ability of smoke barriers to survive exposure to a fire and to restrict smoke movement in a fire incident is critical to the defend-in-place concept used in health care. A key part of this strategy is to use smoke compartments formed by smoke barriers to create temporary, safe areas for patients. The International Building Code requires that areas used for patients must be divided into a minimum of two smoke compartments. Patients in smoke compartments not directly involved in a fire are protected at least temporarily, and can be moved horizontally on gurneys if necessary across smoke barriers into an adjacent smoke compartment. This will buy valuable time, depending on the circumstances, to avoid the need for total evacuation.

Code changes in the 2015 Edition of the International Building Code resulted in the approval of two new code changes that changed smoke compartments in hospitals. Smoke compartments in I-2 occupancies are now less protected.

- Section 717.5.5 (new exception #2 in the 2015 IBC) permits smoke barriers in smoke compartments to eliminate smoke dampers in smoke barriers in sprinklered I-2 buildings, if the HVAC system is fully ducted; and
- Section 407.5 (2015 IBC) permits the area of smoke compartments in I-2, condition 2, to be nearly doubled in size, expanded in area from 22,500 sq. ft. to 40,000 sq. ft.

The Section 407.5 change represents two major changes to current requirements without substantial justification and without consideration of implementation of both changes to the protection of smoke compartments. Fire Safe North America (FSNA) was strongly opposed to both of the changes in the protection of smoke compartments and testified in opposition. (The Air Movement and Control Association Intl (AMCA) has submitted a code change this cycle that further clarifies when a smoke damper can be eliminated from the duct system.)

Regarding the increased size of the smoke compartment, there was no correlation to the measurement of travel distances in a 40,000 sq. ft. compartment size. While travel distances are measured along a path of travel, the compartment sizes are measured in straight line distances. This major adjustment in smoke compartment size would potentially expose a greater number of patients to a fire incident, and establish the need for staff to relocate this higher number of patients to an adjacent area of safety, imposing an unacceptable level of safety for those patients. Current text has no limitations on the number of patients or the number of associated staff who may be located in any one smoke compartment. The change was based on the assumption that the size of functional patient areas has increased with no corresponding increase in patient population, but the code does not require such a limitation.

The proposal that significantly increased the allowable area of a smoke compartment in hospitals from 22,500 sq. ft. to 40,000 sq. ft. did not adequately address numerous issues in their substantiation, and was not resolved satisfactorily. The following contains excerpts from testimony from those who were opposed to these changes, including the National Association of State Fire Marshals, Fire Safe North America, International Association of Fire Fighters, the International Firestop Council, the Air Movement and Control Association International, and others:

1. The substantiation provided for increasing smoke compartment size in hospitals from 22,500 sq. ft. to 40,000 sq. ft. was only based on a study showing that the size of functional patient areas is increasing in most hospitals (for example, to private patient rooms from semiprivate rooms) from the "Facilities Management Guidelines", and not on any technical substantiation addressing specific concerns of patient safety.
2. The new code section does not address the concerns related to increasing the travel time for egressing patients out of one smoke compartment into another one, and the fire and smoke safety impact on those patients and staff.
3. The new code section has no limitations on the maximum number of patients that may be located in any one 40,000 sq. ft. smoke compartment. Without limitations on patient or occupancy limits, a larger smoke compartment size than what was previously permitted, could expose a higher number of patients, visitors, and hospital staff to a fire incident.
4. The new code section could be interpreted to allow existing hospitals to increase smoke compartment sizes in order to reduce maintenance costs by decommissioning some of their smoke barriers without actually reducing the number of patients within their smoke compartments.

An important point of interest is that an identical proposal to increase the size of a smoke compartment to 40,000 sq. ft. was proposed to the 2015 Life Safety Code, published and distributed worldwide by the National Fire Protection Association. Although approved narrowly by the Technical Committee, it was disapproved by the NFPA membership during the NFPA Association Members Meeting in Las Vegas in June, 2014. As a result, the change to 40,000 sq. ft. that is in the 2015 IBC and is not the 2015 Life Safety Code. There remains a conflict between the two regulatory documents, which causes problems for hospitals that need to comply with CMS regulations, as they require conformance with NFPA 101, including the 22,500 sq. ft. limitation on smoke compartment size.

This proposal seeks to restore the size of the smoke compartments in hospitals to 22,500 sq. ft. which will make the Life Safety Code and the IBC consistent with one another.

Cost Impact: Will increase the cost of construction

This code change will increase the cost of construction as compared to the 2015 IBC, due to cost of constructing additional smoke barrier walls to make smoke compartments smaller than the currently required 40,000 sq. ft. smoke compartments.

G 111-15

407.5.2

Proponent: John Williams, CBO, Chair, representing Adhoc Health Care Committee (AHC@iccsafe.org)

2015 International Building Code

Revise as follows:

407.5.2 Independent egress. A means of egress shall be provided from each smoke compartment created by smoke barriers without having to return through the smoke compartment from which means of egress originated. Smoke compartments that do not contain an exit shall be provided with direct access to not less than two adjacent smoke compartments.

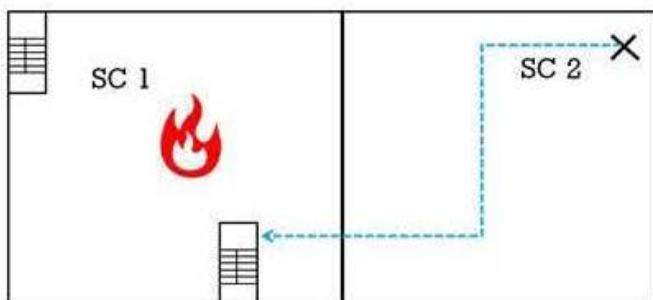
Reason: The ICC Ad Hoc Committee on Healthcare (AHC) has just completed its 4th year. The AHC was established by the ICC Board to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. This is a joint effort between ICC and the American Society for Healthcare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

This code change is intended to more appropriately handle arrangement of the means of egress in a defend in place environment (i.e. hospitals and nursing homes.) The intent is to ensure that the arrangement of smoke compartments and exits prevents a situation where you have a "dead end smoke compartment." This requirement already exists within the federal Medicare requirements. This proposes rule (and the existing section) does not require a stair in every smoke compartment.

In Example 1, an occupant in smoke compartment 2 (SC2) would be forced to travel into smoke compartment 1 to access one of the two required exits for the floor. This is compliant with the current requirement that the occupant does not "return through the smoke compartment of egress origin." The smoke compartment where the mean of egress originates is smoke compartment 2. The dashed path does not leave smoke compartment 2, then RETURN back into smoke compartment 2. While this example meets current code, it creates an unacceptable hazard by creating a "dead end smoke compartment."

The proposed language would require that one of the stairs be located in smoke compartment 2, or, that the floor plate be rearranged to create access to two adjacent smoke compartments from compartment SC2.

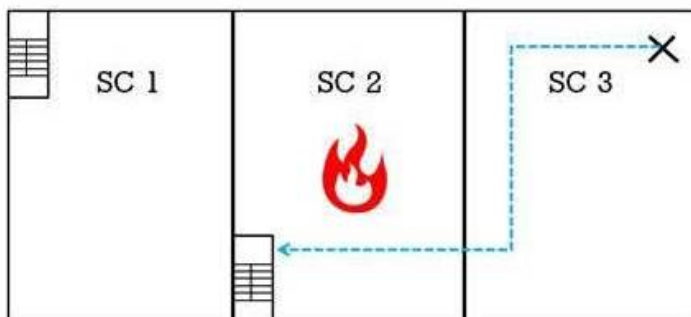
Example 1



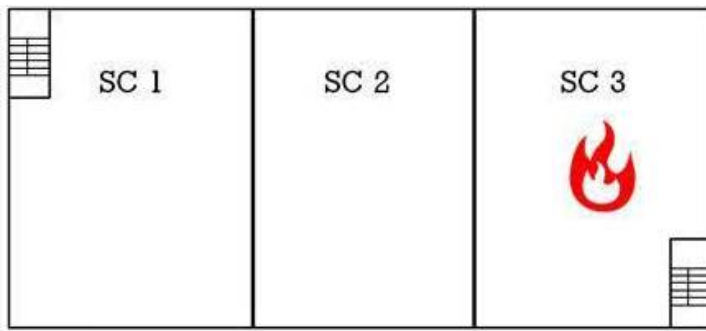
A similar condition exists in Example 2. An occupant in smoke compartment 3 would be required to travel through smoke compartment 2 to access an exit. If smoke compartment #2 has a fire, then the exiting is compromised. In this example, SC3 would be non-compliant with the proposed rule because it 1) does not have a stair, or, 2) it does not have access to two directly adjacent smoke compartments.

There is an easy fix to this problem: relocate the stair to smoke compartment #3 (see Example 3). That way, smoke compartments 1 and 3 have access directly to the stair, and smoke compartment #2 has access to at least two directly adjacent smoke compartments.

Example 2



Example 3



Cost Impact: Will not increase the cost of construction

This change will typically not increase the cost of construction, in that it does not affect how many exits are provided. It does limit the location on the floor plate, which could have cost implications. In worse case an additional smoke compartment would be required, which would definitely increase construction cost. Practically, since this is a federal requirement already there will be no perceived increase to facilities.

G 111-15 : 407.5.2-WILLIAMS4238

G 112-15

407.6 (New), 709.5.1

Proponent: John Williams, CBO, Chair, representing Adhoc Health Care Committee (AHC@iccsafe.org)

2015 International Building Code

Add new text as follows:

407.6 Automatic closing doors Automatic closing doors with hold-open devices shall comply with Sections 709.5 and 716.5.

Revise as follows:

709.5.1 Group I-2 and ambulatory care facilities. In Group I-2 and ambulatory care facilities, where doors protecting openings in smoke barriers are installed across a corridor and have hold-open devices, the doors shall be automatic-closing ~~by smoke detection~~ in accordance with Section 716.5.9.3 and, Such doors 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.

Reason: This proposal has two main functions: The first is to provide a pointer in the I-2 specific section to the requirements for automatic closing doors in healthcare facilities. The hold open feature is one that is used quite frequently, yet the specific requirements are often missed. The pointer in Chapter 4 will remind designers to comply with BOTH sections.

The second change clarifies that not all cross corridor doors need to be provided with automatic closers. The context of this section is doors in smoke barriers, so we have added language to focus the requirement.

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

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

Cost Impact: Will not increase the cost of construction

This proposal is a clarification of requirements; therefore, there is no increase in cost.

G 112-15 : 407.6 (New)-WILLIAMS4236

G 113-15

408.9

Proponent: James Peterkin, Heery International, representing Self (jpeterki@heery.com)

2015 International Building Code

Revise as follows:

408.9 Windowless buildings: For the purposes of this section, a windowless building or portion of a building is one with nonopenable windows, windows not readily breakable or without windows. ~~Windowless~~

~~To facilitate smoke removal in post-fire salvage and overhaul operations, windowless buildings shall be provided with an engineered smoke control system to provide a tenable environment.~~ mechanical ventilation for exiting from the smoke compartment in the area removal of fire origin in accordance with Section 909 products of combustion using mechanical air-handling equipment providing one exhaust air change every 15 minutes for each windowless smoke compartment. Return and exhaust air shall be moved directly to the outside without re-circulation to other portions of the building.

Reason: The mechanical ventilation requirements for an I-3 occupancy should be similar to that required in a high rise building. The ventilation system replaces the lack of breakable windows. Requiring a smoke control system in accordance with 909 to maintain a "tenable environment" is a problem since the only method for maintaining a tenable environment is an "Exhaust" method under Section 909.8. This section stipulates that this method is used to control smoke in large enclosed volumes such as in atriums and malls. I-3 occupancies are generally designed with inmate cells opening into a day room. These are usually a single story with a mezzanine (not a two story space). Trying to maintain a smoke interface layer 6 ft. above the highest occupied space in accordance with the design requirements of 909.8 (NFPA 92) is extremely difficult since there is no volume of space for smoke collection. In addition, the fire load within these compartments is generally very low (fire retardant furnishings) and these spaces are under constant surveillance by security personnel. The fire loss data does not indicate a need for maintaining tenable conditions in these occupancies which are required to be protected by automatic sprinkler systems.

Cost Impact: Will not increase the cost of construction

The cost of a smoke control systems that must be designed to maintain tenable conditions significantly increases the cost of prison. Dedicated smoke control systems also increase the annual maintenance and testing costs over a manually operated ventilation system

G 113-15 : 408.9-PETERKIN5235

G 114-15

410.3.4

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

2015 International Building Code

Revise as follows:

410.3.4 Proscenium wall. Where the *stage* height is greater than 50 feet (15 240 mm), all portions of the *stage* shall be completely separated from the seating area by a proscenium wall with not less than a 2-hour *fire-resistance rating* extending continuously from the foundation to the roof.

Exception: Where the *stage* is located in a building of Type I construction, *proscenium walls*:

1. Where located above a minimum 2-hour *horizontal assembly* shall be permitted to extend from the top of this *horizontal assembly*.
2. Where located beneath a minimum 2-hour *horizontal assembly* are permitted to terminate at the underside of this *horizontal assembly*.
3. Are not permitted to terminate at a *horizontal assembly* where the provisions of Item 2 of Section 403.2.1.1 have been applied.

Reason: Stages with heights of greater than 50 feet are more commonly occurring in venues throughout the country. Additionally, these venues are also increasingly designed with either/both basements (beneath) and/or additional floors above the actual theater levels.

Basements help these venues to attract popular traveling "Broadway-style" shows that utilize large floor lifts from beneath the stage as part of their productions. In many cases, these basements are enlarged to include additional uses such as; office, storage rooms, and other back-of-house spaces.

Levels above the stage are more frequently occurring due to the proliferation of these venues being incorporated into the footprint of high-rise hotel towers, beneath "green" roof gardens (occupiable), and/or beneath additional meeting room/spaces (such as those used in urban-area convention centers).

Currently, Section 410.3.4 requires 2-hour proscenium walls to be continuously constructed from the foundation to the roof of a structure containing a stage with a height greater than 50 feet. Where venues are constructed with floors above and/or below such theaters, this provision requires proscenium walls to continue entirely through those floor levels regardless of the use and/or risks associated with them. This fails to recognize that venues having large stages are no longer limited to single-story buildings.

The proposed amendment would allow the proscenium to terminate at minimum 2-hour fire-resistance-rated horizontal assemblies above and/or below the space containing the stage.

Cost Impact: Will not increase the cost of construction

This proposal does not add to the cost of construction, and the added exception allows an option to existing code, but does not limit the use of the existing code provisions.

G 114-15 : 410.3.4-DIGIOVANNI3823

G 115-15

412.3, 412.3.1 (New), 412.3.1.1, TABLE 412.3.1, 412.3.1.2 (New), 412.3.1.3 (New), 412.3.2 (New), 412.3.2, 412.3.3, 412.3.4, 412.3.4.1, 412.3.3 (New), [F] 412.3.5, 412.3.3.2 (New), 412.3.3.3 (New), 412.3.6, 412.3.4.1 (New), 412.3.7, 412.3.7.1, 412.3.8

Proponent: Christopher Moran, Jensen Hughes, representing Airport Traffic Control Tower Fire/Life Safety Technical Working Group (cmoran@haifire.com); Eric Rosenbaum, representing Airport Traffic Control Tower Fire/Life Safety Technical Working Group

2015 International Building Code

412.3 Airport traffic control towers. The provisions of Sections 412.3.1 through 412.3.8 shall apply to airport traffic control towers occupied only for the following uses:

1. Airport traffic control cab.
2. Electrical and mechanical equipment rooms.
3. Airport terminal radar and electronics rooms.
4. Office spaces incidental to the tower operation.
5. Lounges for employees, including sanitary facilities.

Add new text as follows:

412.3.1 Construction. The construction of airport traffic control towers shall comply with the provisions of Sections 412.3.1.1 through 412.3.1.3.

**TABLE 412.3.1.1
HEIGHT LIMITATIONS FOR AIRPORT TRAFFIC CONTROL TOWERS**

TYPE OF CONSTRUCTION	HEIGHT ^a (feet)
IA	Unlimited
IB	240
IIA	100
IIB	85
IIIA	65

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m².

a. Height to be measured from grade plane to cab floor.

Revise as follows:

412.3.1.1 Type of construction. Airport traffic control towers shall be constructed to comply with the height limitations of Table 412.3.1.1.

Add new text as follows:

412.3.1.2 Structural integrity of interior exit stairways and elevator hoistway enclosures. Enclosures for interior exit stairways and elevator hoistway enclosures shall comply with Section 403.2.3.

412.3.1.3 Sprayed fire-resistant materials (SFRM). The bond strength of the SFRM installed in airport traffic control towers shall be in accordance with Section 403.2.4.

412.3.2 Means of egress and evacuation. The means of egress in airport traffic control towers shall comply with Sections 412.3.2.1 through 412.3.2.3.

Revise as follows:

412.3.2.1 Stairways. Stairways in airport traffic control towers shall be in accordance with Section 1011. ~~Stairways~~ Exit stairways shall be smokeproof enclosures complying with one of the alternatives provided in Section 909.20.

Exception: Stairways in airport traffic control towers are not required to comply with Section 1011.12.

412.3.2.2 Exit access. No change to text.

412.3.2.3 Number of exits. No change to text.

412.3.2.3.1 Interior finish. No change to text.

Add new text as follows:

412.3.3 Emergency Systems. The detection, alarm and emergency systems of airport traffic control towers shall comply with Sections 412.3.3.1 through 412.3.3.3.

Revise as follows:

[F] 412.3.3.1 Automatic fire smoke detection systems. Airport traffic control towers shall be provided with an automatic fire

smoke detection system installed in accordance with Section 907.2907.2.22.

Add new text as follows:

412.3.3.2 Fire command center. The fire command center of an airport control tower shall comply with Section 911.

Exceptions:

1. Location. The fire command center is permitted to be located in the airport control tower or an adjacent contiguous building where building functions are interdependent.

2. Size. The room shall be not less than 150 square feet (14 m²) in area with a minimum dimension of 10 feet (3048 mm).

3. Required features. The following features shall not be required in an airport traffic control tower fire command center.

3.1. Emergency voice/alarm control unit.

3.2. Public address system.

3.3. Status indicators and controls for the air distributions centers.

3.4. Generator supervision devices, manual start and transfer features.

3.5. Elevator emergency or standby power switches where emergency or standby power is provided.

412.3.3.3 Smoke removal Smoke removal in airport traffic control towers shall be provided in accordance with Section 403.4.7.

Revise as follows:

~~412.3.6~~**412.3.4 Automatic sprinkler system.** *No change to text.*

Add new text as follows:

412.3.4.1 Fire pump room. Fire pumps shall be located in rooms that are separated from all other areas of the building by 2-hour fire barriers constructed in accordance with Section 707 or 2-hour horizontal assemblies constructed in accordance with Section 711, or both.

Exception: Separation is not required for fire pumps physically separated in accordance with NFPA 20.

Revise as follows:

~~412.3.7412.3.5 Elevator protection.~~**Protection of elevator wiring and cables.** ~~Wires or Wiring and cables that provide normal or standby power, serving elevators in airport traffic control signals, communication with the car, lighting, heating, air conditioning, ventilation and fire detecting systems to elevator towers shall be protected by construction having a fire-resistance rating of not less than 1 hour, or shall be circuit integrity cable having a fire-resistance rating of not less than 1 hour in accordance with Section 3007.8.1.~~

~~412.3.7.1~~**412.3.5.1 Elevators for occupant evacuation.** *No change to text.*

~~412.3.8~~**412.3.6 Accessibility.** Airport traffic control towers need not shall be accessible except as specified in the provisions of Chapter 11-Section 1104.4.

Reason: All of the proposed changes are the recommendation of the Air Traffic Control Tower Fire Life Safety Task Group, and reflect the current approach to fire protection and life safety in airport traffic control towers (ATCT). The fire safety criteria applicable to ATCTs are originally based on an agreement between the operator of and controllers utilizing the ATCTs. Many of the changes relate to providing extra protection for the controllers and fire service.

ATCTs create a unique hazard. ATCTs typically have a limited number of occupants. In addition, occupants must be awake and alert. The hazard associated with ATCTs is affected by the building's limited uses, height, and the potential delay in evacuation because of the handoff of flights.

The occupied levels of an ATCT are typically located at the top of the structure that typically contains support equipment and services but has limited occupancy. In addition, the area of ATCTs has been increasing, even though the number of floors located on top of the shaft is still typically limited.

Based on the previous revision to the ATCT section, all high-rise requirements were no longer applicable. The sections added are specifically chosen from a review of code requirements that are applicable to high rise buildings. The limited sections applied to ATCTs reflect the limited area of the ATCT, especially the shaft; communications protocol; power applications; construction methods; fire and ATCT shut down history; and that the typical locations of ATCT is in secluded areas.

Section 412.3.1 – The proposed revisions add a construction sub-section for ATCTs. This subsection would include the original requirement regarding construction types and also include proposed criteria for the structural integrity of interior exit stairways and elevator hoistway enclosures and sprayed fire-resistant materials in limited seismic circumstances.

Section 412.3.1.2 – The proposed revision provides additional protection for the controllers when egressing the facility. Adding structural integrity criteria to the exit enclosures provides additional protection in an occupancy where delayed evacuations may be required.

Section 412.3.1.3 – The proposed revision provides additional structural protection by increasing the minimum bond strengths for sprayed fire-resistant materials. This raises the minimum bond strength from 150 psf to 430 psf for all ATCTs, with additional increases based on the height of the ATCT. The proposed requirement provides additional protection of the structural frame where delayed evacuations may be required.

Section 412.3.2 – The proposed revisions add a means of egress subsection. This proposed subsection provides consistency in Section 412.3 by organizing the various ATCT requirements into subsections.

Section 412.3.3 – The proposed revisions add an emergency systems subsection which includes the existing automatic fire detections systems requirements. New provisions of this subsection would include fire command centers and smoke removal.

Section 412.3.3.1 – The terminology of this section was changed to match that of section 907.2.22 and IFC section 914.8.1. This section is referenced from IFC section 914.8.1.

Section 412.3.3.2 is proposed to provide a control location for fire fighter operations due to the unique aspects of fighting fires in ATCTs. It is proposed that the fire command center be located in either the tower footprint or the adjacent base building (where provided). The base building supports the tower operations and is built contiguous to the ATCT. The majority of the requirements were taken from Section 911 with a few exceptions. The emergency voice/alarm communication system and public address system controls were removed as ATCTs are not provided with these systems. The fire alarm control unit would be located in the fire command center and provide status indicators for all associated systems. Status indicators and controls for the air distribution system was also removed due to the limited HVAC system sizes provided in ATCTs. Generator supervision devices, manual start and transfer features were also removed as the fire alarm system will monitor the generator conditions. The requirement for elevator power selector switches was removed as ATCTs are typically designed with a single elevator.

Section 412.3.3.3 is proposed to provide a method to aid fire fighter and salvage operations and get the ATCT back to operational status faster. The addition of smoke removal will reduce the down time of the tower and provide a method to remove smoke in a structure that has many compartments.

Section 412.3.4.1 is proposed to provide additional protection for the fire pump and require a minimum of 2 hour fire resistance rated separations from surrounding areas. As

ATCTs are not considered a high-rise building, the 1-hour exception for fire pump room enclosures could be used. The intent of this section is to clarify that 2-hour separations should be provided for ATCTs.

Section 412.3.5 has been revised to address changes in code language to the 2015 Edition and reference appropriate criteria.

Section 412.3.6 is proposed to be revised due to confusion based on the wording of the current requirement. In some cases, the current wording has been taken to mean that accessibility requirements do not apply to ATCTs. The revision clarifies that ATCTs are required to be accessible except as exempted by Section 1104.4.

Cost Impact: Will increase the cost of construction

This code change will increase the cost of construction from the current code requirements; however, reflects building practices of ATCTs.

G 115-15 : 412.3-MORAN5043

G 116-15

412.3.4, 412.3.4.1, 412.3.4.2 (New)

Proponent: Christopher Moran, JENSEN HUGHES, representing Airport Traffic Control Tower Fire/Life Safety Technical Working Group (cmoran@haifire.com); Eric Rosenbaum, JENSEN HUGHES, representing Airport Traffic Control Tower Fire/Life Safety Technical Working Group

2015 International Building Code

412.3.4 Number of exits. Not less than one *exit stairway* shall be permitted for airport traffic control towers of any height provided that the *occupant load* per floor is not greater than 15 and the area per floor does not exceed 1,500 square feet (140 m²).

412.3.4.1 Interior finish. Where an airport traffic control tower is provided with only one exit stairway, interior wall and ceiling finishes shall be either Class A or Class B.

Add new text as follows:

412.3.4.2 Two exits or exit access doorways. Where an airport traffic control tower is equipped throughout with an automatic sprinkler system in accordance with 903.3.1.1 and two exits are required, the exit separation distance required by Section 1007.1 shall be not less than one-fourth of the length of the maximum overall dimension of the area served.

Reason: The proposed change is the recommendation of the Air Traffic Control Tower Fire Life Safety Task Group. The fire safety criteria applicable to ATCTs are originally based on an agreement between the operator of and controllers utilizing the ATCTs. ATCTs create a unique hazard. ATCTs typically have a limited number of occupants. In addition, occupants must be awake and alert. The hazard associated with ATCTs is affected by the building's limited uses, size and height.

The occupied levels of an ATCT are located at the top of the structure that typically contains support equipment and services but has limited occupancy. The lower levels of the ATCT are typically limited in size while the upper levels are larger in size. This means that towards the upper floors of the building where the structure flares out, the diagonal distance of the building increases. This flared space is used for equipment that serves air traffic control. Architectural analysis has shown that meeting the 1/3 diagonal distance separation requirement is possible by routing access to one of the two means of egress through an equipment room. It is this task group's judgment that an arrangement routing egress through an equipment room creates a larger risk than reducing the diagonal separation requirement. The limited area and layout of the normally unoccupied lower levels can make separation of the exit access by 1/3 of the diagonal of the floor plan difficult. This revision reduces the required separation distance of multiple exit ATCTs in ATCTs that are typically low in occupancy and size.

Cost Impact: Will not increase the cost of construction

This requirement does not require an additional exit but only provides greater flexibility for tower designs where space is limited.

G 116-15 : 412.3.4.2 (New)-
MORAN5072

G 117-15

412.3.7, 909.20.6.1, [F] 913.2.2, (IFC 913.2.2), [F] 2702.3, 3007.8.1, 3008.8.1, Chapter 35

Proponent: Robert Davidson (rjd@davidsoncodeconcepts.com)

2015 International Building Code

Revise as follows:

412.3.7 Elevator protection. Wires or cables that provide normal or standby power, control signals, communication with the car, lighting, heating, air conditioning, *ventilation* and fire detecting systems to elevators shall be protected by ~~construction having one of the following methods:~~

1. ~~Cables used for survivability of required critical circuits shall be listed in accordance with UL 2196 and shall have a fire-resistance rating of not less than 1 hour, or.~~
2. ~~Electrical circuit protective systems shall be circuit integrity cable having tested in accordance with ASTM E 1725 and shall have a fire-resistance fire-resistance rating of not less than 1 hour. Electrical circuit protective systems shall be installed in accordance with their listing requirements.~~
3. ~~Construction having a fire-resistance rating of not less than 1 hour.~~

909.20.6.1 Ventilation systems. Smokeproof enclosure ventilation systems shall be independent of other building ventilation systems. The equipment, control wiring, power wiring and ductwork shall comply with one of the following:

1. Equipment, control wiring, power wiring and ductwork shall be located exterior to the building and directly connected to the smokeproof enclosure or connected to the smokeproof enclosure by ductwork enclosed by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.
2. Equipment, control wiring, power wiring and ductwork shall be located within the smokeproof enclosure with intake or exhaust directly from and to the outside or through ductwork enclosed by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.
3. Equipment, control wiring, power wiring and ductwork shall be located within the building if separated from the remainder of the building, including other mechanical equipment, by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.

ExceptionsException:

1. Control wiring and power wiring ~~utilizing~~ located outside of a 2-hour ~~rated cable or cable system~~ fire barrier construction shall be protected using any one of the following methods:

- 1.1 Cables used for survivability of required critical circuits shall be listed in accordance with UL 2196 and shall have a *fire-resistance rating of not less than 2 hours*.
- 1.2 Where encased with not less than 2 inches (51 mm) of concrete.
- 1.3 ~~Control wiring and power wiring protected by a listed electrical~~ Electrical circuit protective ~~systems~~ systems tested in accordance with ASTM E 1725 and shall have a *fire-resistance rating of not less than 2 hours*. ~~Electrical circuit protective systems shall be installed in accordance with their listing requirements.~~

[F] 913.2.2 Circuits supplying fire pumps. Cables used for survivability of circuits supplying fire pumps shall be protected using one of the following methods:

1. Cables used for survivability of required critical circuits shall be listed in accordance with UL 2196 and shall have a fire-resistance rating of not less than 1 hour.
2. Electrical circuit protective systems shall be tested in accordance with ASTM E 1725 and shall have a fire-resistance rating of not less than 1 hour. Electrical circuit protective systems shall be installed in accordance with their listing requirements.
3. Construction having a fire-resistance rating of not less than 1 hour.

[F] 2702.3 Critical circuits. Required critical circuits shall be protected using one of the following methods:

1. Cables used for survivability of required critical circuits shall be listed in accordance with UL 2196 and shall have a fire-resistance rating of not less than 1 hour.
2. Electrical circuit protective systems shall be tested in accordance with ASTM E 1725 and shall have a fire-resistance rating of not less than 1 hour. Electrical circuit protective systems shall be installed in accordance with their listing requirements.
3. Construction having a fire-resistance rating of not less than 1 hour.

3007.8.1 Protection of wiring or cables. Wires or cables that are located outside of the elevator hoistway and machine room and that provide normal or standby power, control signals, communication with the car, lighting, heating, air conditioning, *ventilation* and fire-detecting systems to fire service access elevators shall be protected by ~~construction having~~ using one of the following methods:

1. Cables used for survivability of required critical circuits shall be listed in accordance with UL 2196 and shall have a *fire-resistance rating of not less than 2 hours*.
2. Electrical circuit protective systems shall be a circuit integrity cable having tested in accordance with ASTM E 1725 and shall have a fire-resistance rating of not less than 2 hours or. ~~Electrical circuit protective systems shall be protected by a listed electrical protective system installed in accordance with their listing requirements.~~
3. Construction having a fire-resistance rating of not less than 2 hours. E

Exception: Wiring and cables to control signals are not required to be protected provided that wiring and cables do not serve Phase II emergency in-car operations.

3008.8.1 Protection of wiring or cables. Wires or cables that are located outside of the elevator hoistway, machine room, control room and control space and that provide normal or standby power, control signals, communication with the car, lighting, heating, air conditioning, *ventilation* and fire-detecting systems to occupant ~~evacuation~~ evacuation elevators shall be protected by ~~construction having~~ using one of the following methods:

1. ~~Cables used for survivability of required critical circuits shall be listed in accordance with UL 2196 and shall have a fire-resistance rating of not less than 2 hours, shall be circuit integrity cable having a fire-resistance rating of not less than 2 hours or shall be protected by a listed electrical circuit protective system having a fire-resistance rating of not less than 2 hours.~~

2. Electrical circuit protective systems shall be tested in accordance with ASTM E 1725 and shall have a fire-resistance rating of not less than 2 hours. Electrical circuit protective systems shall be installed in accordance with their listing requirements.

3. Construction having a fire-resistance rating of not less than 2 hours.

Exception: Wiring and cables to control signals are not required to be protected provided that wiring and cables do not serve Phase II emergency in-car operation.

Add new standard(s) as follows: ADD NEW STANDARD TO CHAPTER 35:

ASTM E 1725 "STANDARD TEST METHODS FOR FIRE TESTS OF FIRE-RESISTIVE BARRIER SYSTEMS FOR ELECTRICAL SYSTEM COMPONENTS"

Reason: This series of code changes is intended to standardize the methods of protecting wiring or cables determined to be essential for the operation of systems and building services during emergency conditions. The basic intent of the code change proposals is already in the code, albeit somewhat random and inconsistent between sections. The change would permit protection of critical circuits using the most up to date technology based on current test methods while still recognizing the commonly used generic fire resistant materials constructed as an assembly already approved for use. Other than reformatting each section and adding a requirement for electrical circuit protective systems to be tested to the appropriate ASTM standard, there is no other significant change to what we believe is the intent of the code, and what the code already requires and/or permits.

Cost Impact: Will not increase the cost of construction

This code change will not increase the cost of construction since the intent of the code is not changed by this proposal.

Analysis: A review of the standard proposed for inclusion in the code, ASTM E 1725 "STANDARD TEST METHODS FOR FIRE TESTS OF FIRE-RESISTIVE BARRIER SYSTEMS FOR ELECTRICAL SYSTEM COMPONENTS", , with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2015.

G 117-15 : 412.3.7-DAVIDSON4353

G 118-15

420.2

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, Code Technology Committee, representing Code Technology Committee (CTC@iccsafe.org); Edward Kulik, Chair, Building Code Action Committee (bcac@iccsafe.org)

2015 International Building Code

Revise as follows:

420.2 Separation walls. Walls separating *dwelling units* in the same building, walls separating *sleeping units* in the same building and walls separating *dwelling or sleeping units* from other occupancies contiguous to them in the same building shall be constructed as *fire partitions* in accordance with Section 708.

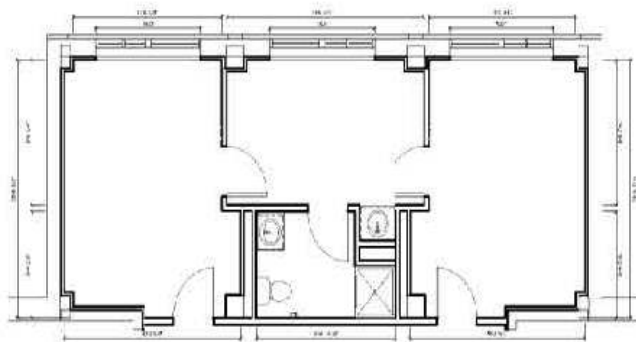
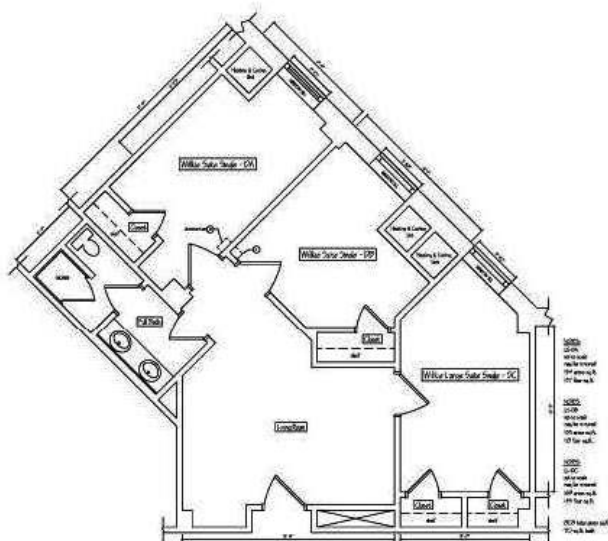
Exceptions:

1. Where sleeping units include private bathrooms, walls between bedrooms and the associated private bathrooms are not required to be constructed as fire partitions.
2. Where sleeping units are constructed as suites, walls between bedrooms within the sleeping unit and the walls between the bedrooms and associated living spaces are not required to be constructed as fire partitions.

Reason: There are two concerns related to separation – 1) suites within hotels, dormitories, and assisted living where a sleeping rooms may share a bathroom, or sleeping rooms may have associated living space, and 2) group homes that operate as a single family unit. There are separate proposals to deal with each. It is the intent for these proposals to work together. This proposal is for the suites.

Some hotel rooms, assisted living and dormitories are designed as suites (see examples below). In a hotel or assisted living space, common designs are one or two bedrooms a living space and private bath. In a dorm, common designs are two rooms with a private bath between; or three or four bedrooms with a living space and private bathrooms. These units act as a group similar to an apartment; and without a kitchen, the associated fire hazards are reduced. When these bedrooms are combined into suites, they should be considered as one unit for purposes of separation. A separation would still be required between these units and the common corridor.

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



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

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

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

Cost Impact: Will not increase the cost of construction

It is the committee's understanding that current language is not clear for where separations are required. In some cases this would be a reduction in separation requirements, and therefore a decrease in cost.

G 119-15

420.2, 420.3

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, Code Technology Committee, representing Code Technology Committee (CTC@iccsafe.org); Edward Kulik, Chair, Building Code Action Committee (bcac@iccsafe.org)

2015 International Building Code

Revise as follows:

SECTION 420 GROUPS I-1, R-1, R-2, R-3 AND R-4

420.1 General. Occupancies in Groups I-1, R-1, R-2, R-3 and R-4 shall comply with the provisions of Sections 420.1 through 420.6 and other applicable provisions of this code.

420.2 Separation walls. Walls separating *dwelling units* in the same building, walls separating *sleeping units* in the same building and walls separating *dwelling* or *sleeping units* from other occupancies contiguous to them in the same building shall be constructed as *fire partitions* in accordance with Section 708.

Exception: In Group R-3 and Group R-4 facilities, walls within the dwelling unit or between sleeping unit are not required to be constructed as fire partitions.

420.3 Horizontal separation. Floor assemblies separating *dwelling units* in the same buildings, floor assemblies separating *sleeping units* in the same building and floor assemblies separating *dwelling* or *sleeping units* from other occupancies contiguous to them in the same building shall be constructed as *horizontal assemblies* in accordance with Section 711.

Exception: In Group R-3 and R-4 facilities, floor assemblies within the dwelling or between sleeping units are not required to be constructed as horizontal assemblies.

Reason: There are two concerns related to separation – 1) suites within hotels, dormitories, and assisted living where a sleeping rooms may share a bathroom, or sleeping rooms may have associated living space, and 2) group homes that operate as a single family unit. There are separate proposals to deal with each. It is the intent for these proposals to work together. This proposal is for the Group R-3 and R-4.

Group R-4 group homes operate as a single family home. If these facilities are considered dwelling units or sleeping units is not consistently interpreted. Separation requirements would require bedrooms to be separated from each other and the corridor. Doors would have to be rated and have closers. This is not appropriate for this type of facility.

There have been a series of lawsuits against jurisdictions across the United States regarding enforcement of requirements for group homes that exceed the requirements for single family homes. This is being interpreted as a violation of the Fair Housing Act. The CTC committee reviewed the requirements for group homes in the codes to see where there were differences and if these differences were justified due to the level of care provided for the residents. In some limited situations, where there was a question for Group R-4 group homes, the same issue existing for Group R-3 congregate residences. For consistency in the code, these need to be considered together rather than separately. Therefore, this proposal is for both Group R-4 and Group R-3 congregate residences (both with 16 or fewer residents per Sections 310.5 and 310.6.)

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

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

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

Cost Impact: Will not increase the cost of construction

It is the committee's understanding that current language is not clear for where separations are required. In some cases this would be a reduction in separation requirements, and therefore a decrease in cost.

G 119-15 : 420.2 -BALDASSARRA4271

G 120-15

420.7 (New)

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

2015 International Building Code

Add new text as follows:

420.7 Assisted living housing units. In Group I-1 occupancies, where a fire resistance corridor is provided, in areas where assisted living residents are housed, shared living spaces, group meeting or multipurpose therapeutic spaces open to the corridor shall be in accordance with all of the following criteria:

1. The walls and ceilings of the space are constructed as required for corridors.
2. The spaces are not occupied as resident sleeping rooms, treatment rooms, incidental uses in accordance with Section 509, or hazardous uses.
3. The open space is protected by an automatic fire detection system installed in accordance with Section 907.
4. In Group I-1, Condition 1, the corridors onto which the spaces open are protected by an automatic fire detection system installed in accordance with Section 907, or the spaces are equipped throughout with quick-response sprinklers in accordance with Section 903.3.2.
5. In Group I-1, Condition 2, the corridors onto which the spaces open, in the same smoke compartment, are protected by an automatic fire detection system installed in accordance with Section 907, or the smoke compartment in which the spaces are located is equipped throughout with quick-response sprinklers in accordance with Section 903.3.2.
6. The space is arranged so as not to obstruct access to the required exits.

Reason: The intent of the two proposals for a new Section 420.7 and 420.8 is to allow the same 'home style' environment for Group I-1 that is permitted to Sections 407.2.5 and 407.2.6 for Group I-2 nursing homes.

Section 420.7: This section allows similar open spaces to corridors as in Group I-2 with similar safeguards added from Group I-2 in Section 407. Prior to the 2015 IBC many assisted living and memory care were designed as Group I-2 which allows spaces open to corridors. Under the 2015 IBC Group I-1 can integrate intervening rooms from Chapter 10 and are not required to integrate corridors to serve sleeping units and dwelling units. It is only when the enclosed exit access component corridor is provided that the added protection features of corridors to be included. The issue is that there is a wide range of interpretation of if, when, and where corridors are required when showing typical "household" plans that most memory care and some assisted living are designed as. These plans typically are designed similar to a household where a bedroom opens directly to a living, dining, and activity area. A wide range of interpretation occurs despite the fact there is no intervening room limit for Group I-1 or corridor requirement for Group I-1. It is only Group I-2 that states that corridors are required to serve sleeping units in Section 407. This proposed section confirms that it is acceptable to use intervening rooms or these open spaces to corridor provisions in these care type settings.

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

Cost Impact: Will increase the cost of construction

This is an increase in cost for Group I-1 facilities that use this option, however, it will allow for greater freedom in design.

G 120-15 : 420.7 (New)-
BALDASSARRA4292

G 121-15

420.7 (New), 420.7.1 (New), 420.7.2 (New)

Proponent: Adolf Zubia, representing IAFC Fire & Life Safety Section

2015 International Building Code

Add new text as follows:

420.7 Dormitory cooking facilities. Domestic cooking appliances for use by residents of Group R-2 college dormitories shall be in accordance with Sections 420.7.1 and 420.7.2.

420.7.1 Cooking appliances. Where located in Group R-2 college dormitories, domestic cooking appliances for use by residents shall be in compliance with all of the following:

1. The types of domestic cooking appliances shall be limited to ovens, cooktops, ranges, warmers, coffee makers and microwaves.
2. Domestic cooking appliances shall be limited to approved locations.
3. Cooktops and ranges shall be protected in accordance with Section 904.13.
4. Cooktops and ranges shall be provided with a domestic cooking hood installed and constructed in accordance with Section 505 of the International Mechanical Code.

420.7.2 Cooking appliances in sleeping rooms. Cooktops, ranges and ovens shall not be installed or used in sleeping rooms.

Reason: This proposal is submitted by Fire and Life Safety Section of the International Association of Fire Chiefs.

This proposal accomplishes the following:

1. There currently are no requirements in the IBC that regulate domestic cooking appliances for use by residents in Group R-2 college dormitories. This proposal includes basic requirements for the code official to follow in approving such installations.
2. Proposed Sections 420.7 and 420.7.1 include requirements that permit domestic cooking appliances in both common areas and sleeping rooms in college dormitories. It does not cover resident dwelling units in college campuses that are not classified as dormitories.
3. Section 420.7.1 covers domestic cooking appliances in common areas in college dormitories. The cooking appliances allowed are the same as those allowed in Section 407.2.6, Item 4 for Group I-2, Condition 1 occupancies.
4. Section 420.7.2 prohibits ovens, cooktops and ranges from being used in sleeping rooms. This reflects that fact that cooktops and ranges are the leading causes of fires in residential settings. For details see: http://www.iafc.org/files/1FIREPREV/flss_ResidentialRangeTopSafetyReport.pdf. This section does allow the use of other cooking appliances, such as microwaves and coffee makers, in sleeping rooms. However individual colleges may have more restrictive rules that prohibit some of these appliances from being used in their dormitories.

IFC/IBC Section 914.13 and 904.13.1 will be revised in the Group B code change cycle. The intent is to provide the same protection for domestic cooking appliances in R-2 college dormitories as currently provided in Group I-2, Condition 1 facilities. In essence a UL 300A fire-extinguishing system is required when a cooktop or range is provided. An automatic fire-extinguishing system is not required when only ovens, ranges, warmers, coffee makers or microwaves are provided. the revisions in Group B will be:

[F] 904.13 Domestic cooking systems in Group I-2 Condition 1. Cooktops and ranges installed in the following occupancies shall be protected in accordance with Sections 904.13.1 through 904.13.2:

1. In Group I-2 Condition 1, occupancies where domestic cooking facilities are installed in accordance with Section 407.2.6 of the International Building Code,
2. In Group R-2 college dormitories where domestic cooking facilities are installed in accordance with Section 420.7, the domestic cooking hood provided over the cooktop or range shall be equipped with an automatic fire-extinguishing system of a type recognized for protection of domestic cooking equipment. Preengineered automatic extinguishing systems shall be tested in accordance with UL 300A and listed and labeled for the intended application. The system shall be facilities are installed in accordance with this code, its listing and the manufacturer's instructions.

[F] 904.13.1 Manual operation and interconnection Automatic fire-extinguishing system. Manual actuation and system interconnection shall be in accordance with Section 904.12.1 and 904.12.2, respectively. The domestic cooking hood provided over the cooktop or range shall be equipped with an approved automatic fire-extinguishing system complying with the following:

1. The automatic fire-extinguishing system shall be of a type recognized for protection of domestic cooking equipment. Preengineered automatic fire-extinguishing systems shall be listed and labeled in accordance with UL 300A and installed in accordance with the manufacturer's instructions.
2. Manual actuation of the fire-extinguishing system shall be provided in accordance with Section 904.12.1.
3. Interconnection of the fuel and electric power supply shall be in accordance with Section 904.12.2.

Cost Impact: Will increase the cost of construction

This code change has the potential to increase the cost of construction due to the additional protection.

G 121-15 : 420.7 (New)-ZUBIA4622

G 122-15

420.7 (New)

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

2015 International Building Code

Add new text as follows:

420.7 Visual access The primary entrance door of individual units in dormitories, motels, hotels, apartment houses, condominiums, and vacation timeshare properties shall contain a means to allow the occupant to visually identify a visitor without unlatching the unit entry door.

Reason: The proposed new Section essentially requires a peephole or other type of door viewer, which provides an additional safety feature for occupants to determine if a hazard exists without exposing themselves to the hazard by opening the door.

Cost Impact: Will increase the cost of construction

This proposal will increase the cost of construction by requiring a peephole or other means of visual access through doors when such was not previously required.

G 122-15 : 420.7 (New)-
DIGIOVANNI3825

G 123-15

420.8 (New), 420.8.1 (New), 420.9 (New)

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

2015 International Building Code

Add new text as follows:

420.8 Group I-1 cooking facilities. In Group I-1 occupancies rooms or spaces that contain a cooking facilities with domestic cooking appliances shall be in accordance with all the following criteria:

1. In Group I-1 Condition 1 occupancies, the number of care recipients served by one cooking facility shall not be greater than 30.
2. In Group I-1 Condition 2 occupancies, the number of care recipients served by one cooking facility and within the same smoke compartment shall not be greater than 30.
3. The types of domestic cooking appliances permitted shall be limited to ovens, cooktops, ranges, warmers and microwaves.
4. The space containing the domestic cooking facilities shall be arranged so as not to obstruct access to the required exit.
5. Domestic cooking hoods installed and constructed in accordance with Section 505 of the International Mechanical Code shall be provided over cooktops or ranges.
6. Cooktops and ranges shall be protected in accordance with Section 904.13.
7. A shut-off for the fuel and electrical supply to the cooking equipment shall be provided in a location that is accessible only to staff.
8. A timer shall be provided that automatically deactivates the cooking appliances within a period of not more than 120 minutes.
9. A portable fire extinguisher shall be provided. Installation shall be in accordance with Section 906 and the extinguisher shall be located within a 30-foot (9144 mm) distance of travel from each domestic cooking appliance.

420.8.1 Cooking facilities open to the corridor. Cooking facilities located in a room or space open to a corridor, aisle or common space shall comply with Section 420.8.

420.9 Group R cooking facilities. In Group R occupancies, cooking appliances used for domestic cooking operations shall be in accordance with Section 917.2 of the *International Mechanical Code*.

Reason: The intent of the two proposals for a new Section 420.7 and 420.8 is to allow the same 'home style' environment for Group I-1 that is permitted to Sections 407.2.5 and 407.2.6 for Group I-2 nursing homes.

Section 420.8 and 420.8.1: This additional protection feature requirement clarifies that kitchens in typical memory care neighborhood plans or assisted living neighborhood plans are allowed in contiguous spaces to rooms used for sleeping. This proposal then implements the additional protection features required in similar applications from Group I-2 as was approved for the 2015 IBC in Section 407.

Section 420.9: While Group R (other than Group R-4) outside the scope of the CTC Care study group, since Section 420 includes provisions for Group I-1 and R, it was felt that something had to be said regarding Group R cooking facilities following the provisions of Group I-1 cooking facilities. The intent of Section 420.9 is to allow for hotel rooms, assisted living suites, dorm suites, and small congregate residences to be allowed to use the provisions in the IMC for domestic cooking appliances. If the hotel or dormitory has a central restaurant or cafeteria, this section would not be applicable because it would be commercial cooking.

A correlative change to IFC Section 904.13 for installation of the cooking systems will be provided in Group B. Basically the Group I-1 will follow the same limits as the Group I-2, Condition 2. This proposal is coordinated with a proposal coming from FCAC and BCAC for Group I-2, Condition 1 cooking facilities.

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

Cost Impact: Will increase the cost of construction

This is an increase in cost for Group I-1 facilities that use this option, however, it will allow for greater freedom in design. Alternatively, requiring a commercial appliance and hood in place of the domestic appliance could be more costly. This should not be a change for domestic cooking appliances in Group R.

G 123-15 : 420.8 (New)-
BALDASSARRA4912

G 124-15

202, 422.2, [F] 903.2.2 (IFC 903.2.2)

Proponent: John Williams, CBO, Chair, representing Adhoc Health Care Committee (AHC@iccsafe.org)

2015 International Building Code

Revise as follows:

SECTION 202 DEFINITIONS

AMBULATORY CARE FACILITY. Buildings or portions thereof used to provide medical, surgical, psychiatric, nursing or similar care on a less than 24-hour basis to persons who are rendered *incapable of self-preservation* by the services provided or staff has accepted responsibility for care recipients already incapable.

422.2 Separation. *Ambulatory care facilities* where the potential for four or more care recipients are to be *incapable of self-preservation* at any time, ~~whether rendered incapable by staff or staff accepted responsibility for a care recipient already incapable,~~ shall be separated from adjacent spaces, corridors or tenants with a *fire partition* installed in accordance with Section 708.

[F] 903.2.2 Ambulatory care facilities. An *automatic sprinkler system* shall be installed throughout the entire floor containing an *ambulatory care facility* where either of the following conditions exist at any time:

1. Four or more care recipients are incapable of self-preservation, ~~whether rendered incapable by staff or staff has accepted responsibility for care recipients already incapable.~~
2. One or more care recipients that are incapable of self-preservation are located at other than the level of exit discharge serving such a facility.

In buildings where ambulatory care is provided on levels other than the *level of exit discharge*, an *automatic sprinkler system* shall be installed throughout the entire floor where such care is provided as well as all floors below, and all floors between the level of ambulatory care and the nearest *level of exit discharge*, including the *level of exit discharge*.

Reason: This proposal modifies the definition of the term ambulatory care facility. The current definition envisions typical scenarios for when a care facility might house a person who is incapable of self preservation. The definition does not capture people who are unexpectedly incapable of preservation, such as a person fainting in an office building. It does capture those facilities who intend to render a patient incapable. The point was brought up in one of the previous cycles, what about those facilities that accept responsibility for patients who are incapable. For example, free standing emergency centers. A code change was approved that addressed this change when setting sprinkler requirements. The code change moves that accepted concept into the definition from the two locations where it is currently found.

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

Cost Impact: Will not increase the cost of construction

This revision is a clarification. The proposal essentially moves text from the code to the definition, therefore, this will not increase the construction.

G 124-15 : 422.2-WILLIAMS4168

G 125-15

422.6 (New), 604.2.1(IBC [F] 2702.2.1) (New)

Proponent: John Williams, CBO, Chair, representing Adhoc Health Care Committee (AHC@iccsafe.org)

2015 International Building Code

Add new text as follows:

422.6 Electrical systems In ambulatory care facilities, the essential electrical system for electrical components, equipment and systems shall be designed and constructed in accordance with the provisions of Chapter 27 and NFPA 99.

2015 International Fire Code

604.2.1(IBC [F] 2702.2.1) Ambulatory care facilities. Essential electrical systems for ambulatory care facilities shall be in accordance with Section 422.6 of the International Building Code.

Reason: The IBC currently has no direction on whether essential electrical systems (such as emergency generator) are required at ambulatory care facilities. This proposal adds the direction to go to NFPA 99, the Healthcare Facilities Code for that assessment. NFPA 99 provides a risk based approach to determine the need for an essential electrical system, what class system is required and general design requirements for each type of system. The ICC Ad Hoc Committee on Healthcare (AHC) has just completed its 4th year. The AHC was established by the ICC Board to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. This is a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Information on the AHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the AHC effort can be downloaded from the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>.

Cost Impact: Will increase the cost of construction

The code change proposal will increase the cost of construction. Adding an essential electrical system will add the cost of a generator, as well as maintenance and testing over what is required currently in the IBC/IFC. However, any medicare certified ambulatory care facilities are required by federal CMS regulations to have this system, therefore, the cost of construction will not increase. Note that not all ambulatory care facilities are medicare certified.

G 125-15 : 422.6 (New)-WILLIAMS4166

G 126-15

424.1

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

2015 International Building Code

Revise as follows:

424.1 Children's play structures. Children's play structures installed inside all occupancies covered by this code that exceed 10 feet (3048 mm) in height ~~and~~ or 150 square feet (14 m²) in area shall comply with Sections 424.2 through 424.5.

Reason: The intent of this code section is to protect children from exposure to fire in large play structures. Code officials have expressed a concern that there have been instances where suggested structures were proposed where one of the dimensions (width or height) was just slightly smaller than the cut off and the other one vastly exceeded the cut off. With the language requiring both dimensions to exceed the limits this may be interpreted that, as long as as one dimension does not exceed the limits the other dimension has no limits. That is not safe.

The change should clarify that there is a limitation on each dimension.

Cost Impact: Will increase the cost of construction

This will prevent the construction/installation of unsafe structures where one dimension is unlimited.

G 126-15 : 424.1-HIRSCHLER3519

G 127-15

427 (New), 427.1 (New)

Proponent: Lee Kranz, City of Bellevue, WA, representing Washington Association of Building Officials Technical Code Development Committee

2015 International Building Code

Add new text as follows:

SECTION 427 **MEDICAL GAS SYSTEMS**

427.1 Medical gas systems. Medical gas systems shall comply with Section 5306 of the *International Fire Code*.

Reason: Provisions for medical gas installations are currently found in Section 5306 of the IFC but many of the requirements for these installations require a building permit and should also be regulated from the IBC. There are no substantive changes proposed to the language found in the IFC. Examples of similar references to other codes and standards are found in Sections 425 & 916.

Cost Impact: Will not increase the cost of construction

Inserting a reference to the medical gas regulations currently found in the IFC will not change the cost of installation.

G 127-15 : 427 (New)-KRANZ3770

G 128-15

427.1 (New), 427.2 (New), 427.3 (New), 427.4 (New)

Proponent: William Hall, Portland Cement Association, representing Portland Cement Association (jhall@cement.org); Jason Thompson, Masonry Alliance for Codes and Standards, representing Masonry Alliance for Codes and Standards (jthompson@ncma.org); Stephen Skalko (svskalko@cox.net)

2015 International Building Code

Add new text as follows:

SECTION 427

HIGH RISK AREAS

427.1 General. The provisions of Sections 427.2 through 427.4 shall apply to buildings or structures classified as Risk Category II, III or IV where either of the following conditions exists:

1. Located in Hurricane-Prone Regions
2. Assigned to Seismic Design Category C or greater.

427.2 Height in feet. The maximum height, in feet, of a building shall not exceed the limits specified in Table 504.3 for non-sprinklered (NS) buildings.

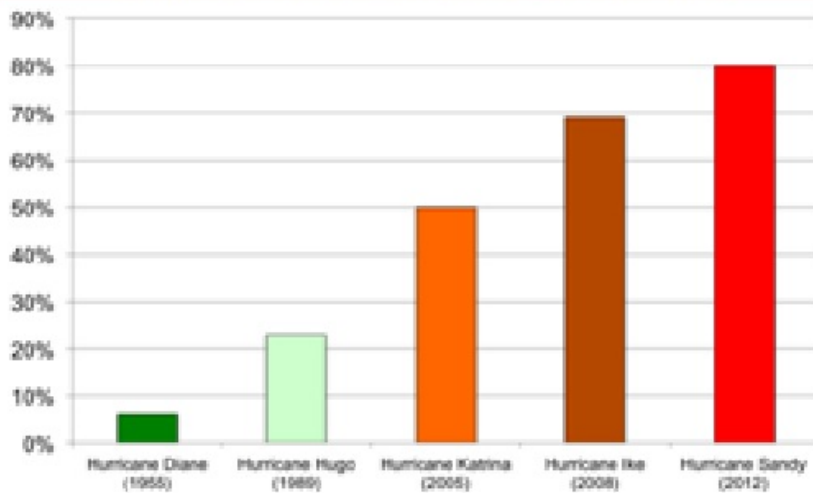
427.3 Number of stories. The maximum number of stories of a building shall not exceed the limits specified in Table 504.4 for non-sprinklered (NS) buildings.

427.4 Allowable area. The maximum allowable area of a building shall not exceed the limits specified in Table 506.2 for non-sprinklered (NS) buildings.

Reason: Natural disasters, in areas shown to be at high risk, continue to cost this nation billions of dollars each year in damaged and destroyed property, clean-up, lost revenue, displacement of residents, re-building efforts and more. 650,000 housing units were damaged or destroyed and 300,000 business properties in New York and New Jersey during Hurricane Sandy in 2012, while an estimated 7 million were without power. An estimated 80 Billion dollars in FEMA money will be spent solely on re-building and repair costs from just one storm. Katrina, in 2005 was more costly, with \$81 billion in construction costs and over 1500 deaths directly associated with the storm.



Role of Federal Government in Covering Disaster Losses (proportion of total loss paid by government)



Sources: E. Michel-Kerjan, [How Life Entered an Ever-Growing Cycle of Government Disaster Relief?](#), Testimony before the U.S. Senate (2013).

Studies by National Oceanic Atmospheric Administration (NOAA) show the trends for hurricanes to be on the increase through the year 2100 and the probability of seismic activity continues to increase based on studies and new maps released by the United States Geological Surveys (USGS). Low lying areas in coastal communities are at high risk of storm surge flooding. During and after these major events, damage to infrastructure and utilities is enormous. Major roadways can be destroyed or roadways impassable due to flooding and in addition the affected areas will experience large scale loss of power, loss of water, gas line ruptures and fire. Damage from fires after a high wind event, earthquake or storm surge can be devastating in both residential and commercial properties. The captions below show conflagration results from Hurricane Sandy – 2012 in both commercial and residential areas.



Emergency service resources are limited at best after a natural disaster and non-existent while a hurricane passes. Fires are left to burn until either they burn out or become accessible and become a priority. A fire within a building, with combustible construction, without an operational sprinkler system, is not likely to be controlled without passive fire containment. As recently as August 2014, the Napa Valley, CA area experienced an earthquake which caused moderate damage but still sustained 16 fires after the event.



While the safety of fire sprinklers during normal times has a very good track record, the fact is: fire sprinklers will not work without a water supply and may not work without electrical service. During seismic and flooding events, water mains and electrical services are often damaged, electric fire pumps fail to operate, diesel fire pumps and emergency generators fail to operate if flooded, water pressure levels will be significantly lower from broken lines within the system, and exterior fire exposure from buildings without protection increases the risk of fire spread.



Aftermath of Hurricane Sandy

Even with clear evidence that sprinkler systems cannot be a reliable suppression source in high risk areas and historical evidence that natural disasters are increasing in number and severity, the building code still provides significant trade off incentives for sprinkler systems to allow buildings to be built bigger and higher while allowing reductions in passive fire protection. This code change recognizes that active fire protection during and after a natural disaster can not be relied upon to operate exposing structures to a level of fire protection that is dramatically less than the minimum intended by the building code. To assure a minimum level of fire protection consistent with the intent of the code following disasters, this change seeks to eliminate sprinkler trade-offs for height and area increases in high risk areas.

To accurately evaluate the relative construction cost it was determined that a multi-family residential structure should be schematically designed meeting all of the requirements of the International Building Code. Once designed, the buildings were reviewed for code compliance, and cost estimates would be prepared. The study was conducted by:

Architect & Engineer: Haas Architects Engineers¹

Code Official: Tim E. Knisely²

Cost Estimation : Poole Anderson Construction³

The building model chosen for the project was a 4 story multi-family residential structure encompassing approximately 25,000 gross square feet of building area per floor. The cost comparisons are based on the proposed target building assembled using a typical mix of one and two bedroom dwelling units

The following construction types and alternates were included in the evaluation:

Conventional Type V framing with Type V floor system

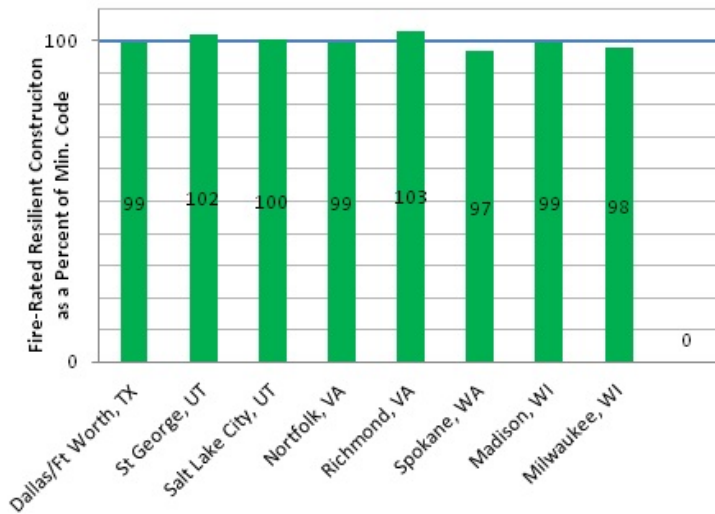
Alternate: Conventional Type VA framing with Type VA floor system

Non-combustible framing with fire-rated non-combustible floors (concrete on steel deck)

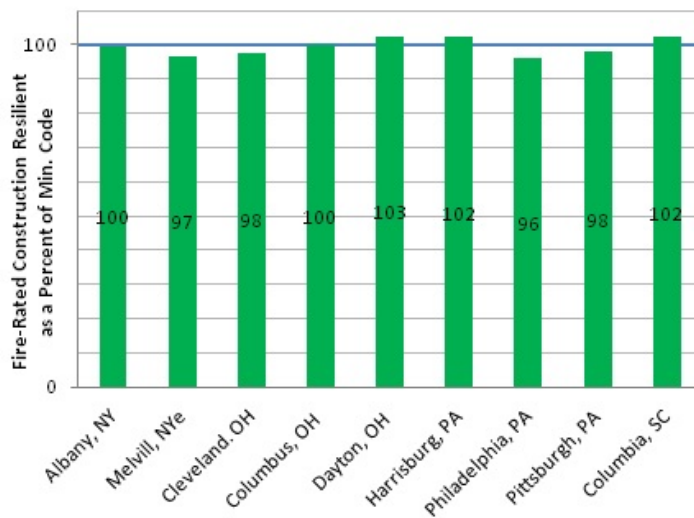
Fire-rated load bearing non-combustible construction with fire rated non-combustible floor system (block and plank)

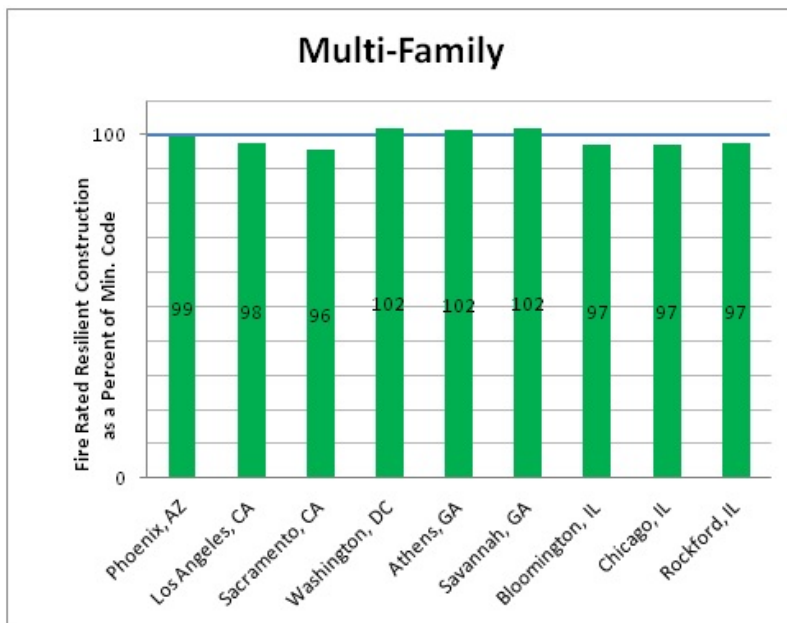
The cost estimate for each building model included the complete fit out of each building with the exception of movable appliances and furniture. For more details on the specific criteria visit: www.psfscac.org.

Multi-Family



Multi-Family





1Haas Architects Engineers is a multi-disciplinary architectural and engineering firm located in State College, Pennsylvania with a thirty year history of client centered service including commercial, single and multi-family residential, retail, and sports based projects.

2Tim E. Knisely is a senior fire and commercial housing inspector for the Centre Region Code Administration, in State College, Pennsylvania. Mr. Knisely currently holds a certification as a registered Building Code Official in the Commonwealth of Pennsylvania and holds more than eight certifications from the International Code Council. In addition, Mr. Knisely has been involved in the fire service for more than 20 years.

3Poole Anderson Construction is one of the largest building contractors in Central Pennsylvania with a 75 year history and an annual construction volume exceeding 60,000,000 dollars.

Bibliography: http://www.nytimes.com/2013/09/13/nyregion/fire-ravages-jersey-shore-boardwalk-rebuilt-after-hurricane-sandy.html?_r=0

<http://www.cnn.com/2012/10/30/us/hurricane-sandy-color/index.html>

Cost Impact: Will increase the cost of construction

To evaluate the cost impact for every occupancy and use, type of construction and building configuration is excessively burdensome for any proposed code change. In an effort to satisfy the request in the code development process that construction type determined by the proponent to be influence by cost was evaluated to the most significant cost potential impacts relative to this proposal, rectangular 4-story Type V multi-family dwellings. The independent third party studies indicate that the cost differential ranges between minus 3% to plus 3% for the most significant cost impact associated with the code change proposal which typically shifted the design from Type V construction to other Types of construction.

See reasoning statement

G 129-15

503.1

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

2015 International Building Code

Revise as follows:

503.1 General. Unless otherwise specifically modified in Chapter 4 and this chapter, *building height*, number of stories and *building area* shall not exceed the limits specified in Sections 504 and 506 based on the type of construction as determined by Section 602 and the occupancies as determined by Section 302 except as modified hereafter. *Building height*, number of stories and *building area* provisions shall be applied independently. Each portion of a building separated by one or more *fire walls* complying with Section 706 shall be considered to be a separate building. Buildings shall not cross lot lines.

Reason: No where in the code has any mention that buildings should not be crossing the property lines. Although this has been an obvious understanding and practice, there are still some designers that take the advantage of absence of this statement and claim that the code does not disallow this practice.

Cost Impact: Will not increase the cost of construction
This Code proposal does not increase the cost of construction.

G 129-15 : 503.1-MAIEL4490

G 130-15

503.1, 706.1

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

2015 International Building Code

Revise as follows:

503.1 General. Unless otherwise specifically modified in Chapter 4 and this chapter, *building height*, number of stories and *building area* shall not exceed the limits specified in Sections 504 and 506 based on the type of construction as determined by Section 602 and the occupancies as determined by Section 302 except as modified hereafter. *Building height*, number of stories and *building area* provisions shall be applied independently. ~~Each~~For the purposes of determining area limitations, height limitations and type of construction, each portion of a building separated by one or more *fire walls* complying with Section 706 shall be considered to be a separate building.

706.1 General. ~~Each portion of a building separated by one or more fire walls that comply with the provisions of this section shall be considered a separate building constructed in accordance with Sections 706.2 through 706.11.~~ The extent and location of such *fire walls* shall provide a complete separation. Where a *fire wall* separates occupancies that are required to be separated by a *fire barrier* wall, the most restrictive requirements of each separation shall apply.

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

The purpose of this proposal is to clarify the intent of these sections of the Code that the requirement for a fire wall in Sections 503.1 and 706.1 is predicated on the determination of the maximum allowable height and area calculations under Chapter 5. Using these sections of Code to control other building features or elements such as means of egress, building systems or building utilities is not intended or implied by these sections of the Code. However, by inclusion of the first sentence in Section 706.1 some code officials have incorrectly interpreted that language to mean that the portions of the various elements and systems on each side of a fire wall must be completely self-contained. There are no requirements in the I Codes that mandate that the placement of fire walls to create a separate building such that its building features need to be separated from other like building features in adjacent buildings. The scope of Section 706 is to provide the technical requirements for the construction of a fire wall.

The added language in Section 503.1 along with the strikeout and added language in Section 706.1 will clarify application of these two sections.

Cost Impact: Will not increase the cost of construction

The cost of construction will be reduced by eliminating incorrect application of Section 706.1.

G 130-15 : 503.1-KULIK4966

G 131-15

503.1.4 (New), 1004.5

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

2015 International Building Code

Add new text as follows:

503.1.4 Occupied roofs. For the purposes of Tables 504.3 and 504.4, occupancies are permitted on roofs where the occupancy is permitted on the story immediately below. The area to be used as an occupied roof shall comply with the allowable area limitations of Table 506.2 for the intended occupancy.

Exception: Occupied roofs are not required to comply with Tables 504.3 and 504.4 where located on buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and fire alarm notification in accordance with Section 907 is provided in the area of the occupied roof.

Revise as follows:

1004.5 Outdoor areas. *Yards, patios, courts, occupied roofs,* and similar outdoor areas accessible to and usable by the building occupants shall be provided with *means of egress* as required by this chapter. The *occupant load* of such outdoor areas shall be assigned by the *building official* in accordance with the anticipated use. Where outdoor areas are to be used by persons in addition to the occupants of the building, and the path of egress travel from the outdoor areas passes through the building, *means of egress* requirements for the building shall be based on the sum of the *occupant loads* of the building plus the outdoor areas.

Exceptions:

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

Reason: Occupied roofs host different occupancy groups but most often consist of Groups A and B. Means of egress, accessibility, structural design, access to plumbing fixtures and guardrails are already addressed in the code and must be provided for occupants utilizing the area of an occupied roof. Type of construction limitations based on occupancy classification are not currently addressed in the code for occupied roofs because an occupied roof is not considered to be a story, as defined in the code. If approved, this code change will clarify that occupied roofs are limited to the roof level of the highest story per Tables 504.3 and 504.4 for the applicable occupancy and must comply with the limitations of Table 506.2 for the area of the roof to be occupied even though it is not considered to be a "story".

The proposed exception allows occupied roofs to be located on any story and at any height in a building protected with an automatic sprinkler system throughout and with fire alarm notification in the area of the occupied roof. The exception is appropriate since smoke will not accumulate on an occupied roof as it does inside the building and there is an added level of protection provided by the sprinkler and fire alarm systems.

"Occupied roofs" is proposed to be added to Section 1004.5 to clarify that they shall be provided with means of egress as required by Chapter 10.

Cost Impact: Will increase the cost of construction

This code change will require additional cost due to a new requirement to install sprinkler protection and fire alarm notification in some cases to accommodate an occupied roof on a building that may not otherwise require these systems.

G 131-15 : 503.1.4 (New)-KRANZ3867

G 132-15

503.1.2.1 (New)

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

2015 International Building Code

Add new text as follows:

503.1.2.1 Buildings on same property and buildings containing courts. For the purposes of determining the required wall and opening protection and roof-covering requirements, buildings on the same property and court walls of buildings over one story in height shall be assumed to have a property line between them.

Reason: For the purpose of life –safety and fire protection, it's important to establish opening limitations for courts.

Cost Impact: Will increase the cost of construction

The code change proposal increases construction cost where the separation between the assumed property line and the building facade will require fire resistant construction.

G 132-15 : 503.1.2.1 (New)-
CUEVAS4647

G 133-15

TABLE 504.3, TABLE 504.4, TABLE 506.2, TABLE 803.11, 1006.2.2.6 (New), TABLE 1017.2, TABLE 1020.1; (IFC, TABLE 1006.2.1, 1006.2.2, 1006.2.2.6 (New), TABLE 1017.2, TABLE 1020.1)

Proponent: Carl Baldassarra, P.E., FSFPE, Chair Code Technology Committee, representing Code Technology Committee (CTC@iccsafe.org); Edward Kulik, Chair Building Code Action Committee (bcac@iccsafe.org)

2015 International Building Code

Revise as follows:

TABLE 504.3
ALLOWABLE BUILDING HEIGHT IN FEET ABOVE GRADE PLANE ^a

OCCUPANCY CLASSIFICATION	TYPE OF CONSTRUCTION									
	SEE FOOTNOTES	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
A, B, E, F, M, S, U	NS ^b	UL	160	65	55	65	55	65	50	40
	S	UL	180	85	75	85	75	85	70	60
H-1, H-2, H-3, H-5	NS ^{c, d}	UL	160	65	55	65	55	65	50	40
	S									
H-4	NS ^{c, d}	UL	160	65	55	65	55	65	50	40
	S	UL	180	85	75	85	75	85	70	60
I-1 Condition 1, I-3	NS ^{d, e}	UL	160	65	55	65	55	65	50	40
	S	UL	180	85	75	85	75	85	70	60
I-1 Condition 2, I-2	NS ^{d, f, e}	UL	160	65	55	65	55	65	50	40
	S	UL	180	85						
I-4	NS ^{d, g}	UL	160	65	55	65	55	65	50	40
	S	UL	180	85	75	85	75	85	70	60
R ^h	NS ^{d, h}	UL	160	65	55	65	55	65	50	40
	<u>S13D</u>	<u>60</u>	<u>60</u>	<u>60</u>	<u>60</u>	<u>60</u>	<u>60</u>	<u>60</u>	<u>50</u>	<u>40</u>
	S13R	60	60	60	60	60	60	60	60	60
	S	UL	180	85	75	85	75	85	70	60

For SI: 1 foot = 304.8 mm.

Note: UL = Unlimited; NS = Buildings not equipped throughout with an automatic sprinkler system; S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; S13R = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2; S13D = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.3.

- See Chapters 4 and 5 for specific exceptions to the allowable height in this chapter.
- See Section 903.2 for the minimum thresholds for protection by an automatic sprinkler system for specific occupancies.
- New Group H occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.5.
- The NS value is only for use in evaluation of existing building height in accordance with the *International Existing Building Code*.
- New Group I-1 and I-3 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6. For new Group I-1 occupancies Condition 1, see Exception 1 of Section 903.2.6.
- New and existing Group I-2 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6 and Section 1103.5 of the *International Fire Code*.
- For new Group I-4 occupancies, see Exceptions 2 and 3 of Section 903.2.6.

h. New Group R occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.8.

TABLE 504.4
ALLOWABLE NUMBER OF STORIES ABOVE GRADE PLANE ^{a, b}

OCCUPANCY CLASSIFICATION	TYPE OF CONSTRUCTION									
	SEE FOOTNOTES	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
A-1	NS	UL	5	3	2	3	2	3	2	1
	S	UL	6	4	3	4	3	4	3	2
A-2	NS	UL	11	3	2	3	2	3	2	1
	S	UL	12	4	3	4	3	4	3	2
A-3	NS	UL	11	3	2	3	2	3	2	1
	S	UL	12	4	3	4	3	4	3	2
A-4	NS	UL	11	3	2	3	2	3	2	1
	S	UL	12	4	3	4	3	4	3	2
A-5	NS	UL	UL	UL	UL	UL	UL	UL	UL	UL
	S	UL	UL	UL	UL	UL	UL	UL	UL	UL
B	NS	UL	11	5	3	5	3	5	3	2
	S	UL	12	6	4	6	4	6	4	3
E	NS	UL	5	3	2	3	2	3	1	1
	S	UL	6	4	3	4	3	4	2	2
F-1	NS	UL	11	4	2	3	2	4	2	1
	S	UL	12	5	3	4	3	5	3	2
F-2	NS	UL	11	5	3	4	3	5	3	2
	S	UL	12	6	4	5	4	6	4	3
H-1	NS ^{c, d}	1	1	1	1	1	1	1	1	NP
	S									
H-2	NS ^{c, d}	UL	3	2	1	2	1	2	1	1
	S									
H-3	NS ^{c, d}	UL	6	4	2	4	2	4	2	1
	S									
H-4	NS ^{c, d}	UL	7	5	3	5	3	5	3	2
	S	UL	8	6	4	6	4	6	4	3
H-5	NS ^{c, d}	4	4	3	3	3	3	3	3	2

	S									
I-1 Condition 1	NS ^{d, e}	UL	9	4	3	4	3	4	3	2
	S	UL	10	5	4	5	4	5	4	3
I-1 Condition 2	NS ^{d, e}	UL	9	4	3	4	3	4	3	2
	S	UL	10	5						
I-2	NS ^{d, f}	UL	4	2	1	1	NP	1	1	NP
	S	UL	5	3						
I-3	NS ^{d, e}	UL	4	2	1	2	1	2	2	1
	S	UL	5	3	2	3	2	3	3	2
I-4	NS ^{d, g}	UL	5	3	2	3	2	3	1	1
	S	UL	6	4	3	4	3	4	2	2
M	NS	UL	11	4	2	4	2	4	3	1
	S	UL	12	5	3	5	3	5	4	2

OCCUPANCY CLASSIFICATION	TYPE OF CONSTRUCTION									
	SEE FOOTNOTES	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
R-1 ^h	NS ^{d, f}	UL	11	4	4	4	4	4	3	2
	S13R	4	4						4	3
	S	UL	12	5	5	5	5	5	4	3
R-2 ^h	NS ^{d, f}	UL	11	4	4	4	4	4	3	2
	S13R	4	4	4					4	3
	S	UL	12	5	5	5	5	5	4	3
R-3 ^h	NS ^{d, f}	UL	11	4	4	4	4	4	3	3
	<u>S13D</u>	<u>4</u>	<u>4</u>						<u>3</u>	<u>3</u>
	S13R	4	4						4	4
	S	UL	12	5	5	5	5	5	4	4
R-4 ^h	NS ^{d, f}	UL	11	4	4	4	4	4	3	2
	<u>S13D</u>	<u>4</u>	<u>4</u>						<u>3</u>	<u>2</u>
	S13R	4	4						4	3
	S	UL	12	5	5	5	5	5	4	3
S-1	NS	UL	11	4	2	3	2	4	3	1
	S	UL	12	5	3	4	3	5	4	2

S-2	NS	UL	11	5	3	4	3	4	4	2
	S	UL	12	6	4	5	4	5	5	3
U	NS	UL	5	4	2	3	2	4	2	1
	S	UL	6	5	3	4	3	5	3	2

Note: UL = Unlimited; NP = Not Permitted; NS = Buildings not equipped throughout with an automatic sprinkler system; S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; S13R = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2; S13D = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.3.

- See Chapters 4 and 5 for specific exceptions to the allowable height in this chapter.
- See Section 903.2 for the minimum thresholds for protection by an automatic sprinkler system for specific occupancies.
- New Group H occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.5.
- The NS value is only for use in evaluation of existing building height in accordance with the *International Existing Building Code*.
- New Group I-1 and I-3 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6. For new Group I-1 occupancies, Condition 1, see Exception 1 of Section 903.2.6.
- New and existing Group I-2 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6 and Section 1103.5 of the *International Fire Code*.
- For new Group I-4 occupancies, see Exceptions 2 and 3 of Section 903.2.6.
- New Group R occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.8.

TABLE 506.2
ALLOWABLE AREA FACTOR (A_f = NS, S1, S13R, or SM, as applicable) IN SQUARE FEET ^{a, b}

OCCUPANCY CLASSIFICATION	SEE FOOTNOTES	TYPE OF CONSTRUCTION								
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
A-1	NS	UL	UL	15,500	8,500	14,000	8,500	15,000	11,500	5,500
	S1	UL	UL	62,000	34,000	56,000	34,000	60,000	46,000	22,000
	SM	UL	UL	46,500	25,500	42,000	25,500	45,000	34,500	16,500
A-2	NS	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	60,000	46,000	24,000
	SM	UL	UL	46,500	28,500	42,000	28,500	45,000	34,500	18,000
A-3	NS	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	60,000	46,000	24,000
	SM	UL	UL	46,500	28,500	42,000	28,500	45,000	34,500	18,000
A-4	NS	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	60,000	46,000	24,000
	SM	UL	UL	46,500	28,500	42,000	28,500	45,000	34,500	18,000
A-5	NS	UL	UL	UL	UL	UL	UL	UL	UL	UL
	S1									
	SM									
B	NS	UL	UL	37,500	23,000	28,500	19,000	36,000	18,000	9,000
	S1	UL	UL	150,000	92,000	114,000	76,000	144,000	72,000	36,000

	SM	UL	UL	112,500	69,000	85,500	57,000	108,000	54,000	27,000
E	NS	UL	UL	26,500	14,500	23,500	14,500	25,500	18,500	9,500
	S1	UL	UL	106,000	58,000	94,000	58,000	102,000	74,000	38,000
	SM	UL	UL	79,500	43,500	70,500	43,500	76,500	55,500	28,500
F-1	NS	UL	UL	25,000	15,500	19,000	12,000	33,500	14,000	8,500
	S1	UL	UL	100,000	62,000	76,000	48,000	134,000	56,000	34,000
	SM	UL	UL	75,000	46,500	57,000	36,000	100,500	42,000	25,500
F-2	NS	UL	UL	37,500	23,000	28,500	18,000	50,500	21,000	13,000
	S1	UL	UL	150,000	92,000	114,000	72,000	202,000	84,000	52,000
	SM	UL	UL	112,500	69,000	85,500	54,000	151,500	63,000	39,000
H-1	NS ^c	21,000	16,500	11,000	7,000	9,500	7,000	10,500	7,500	NP
	S1									
H-2	NS ^c	21,000	16,500	11,000	7,000	9,500	7,000	10,500	7,500	3,000
	S1									
	SM									
H-3	NS ^c	UL	60,000	26,500	14,000	17,500	13,000	25,500	10,000	5,000
	S1									
	SM									
H-4	NS ^{c, d}	UL	UL	37,500	17,500	28,500	17,500	36,000	18,000	6,500
	S1	UL	UL	150,000	70,000	114,000	70,000	144,000	72,000	26,000
	SM	UL	UL	112,500	52,500	85,500	52,500	108,000	54,000	19,500
H-5	NS ^{c, d}	UL	UL	37,500	23,000	28,500	19,000	36,000	18,000	9,000
	S1	UL	UL	150,000	92,000	114,000	76,000	144,000	72,000	36,000
	SM	UL	UL	112,500	69,000	85,500	57,000	108000	54,000	27,000

OCCUPANCY CLASSIFICATION	SEE FOOTNOTES	TYPE OF CONSTRUCTION								
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
I-1	NS ^{d, e}	UL	55,000	19,000	10,000	16,500	10,000	18,000	10,500	4,500
	S1	UL	220,000	76,000	40,000	66,000	40,000	72,000	42,000	18,000
	SM	UL	165,000	57,000	30,000	49,500	30,000	54,000	31,500	13,500
I-2	NS ^{d, f}	UL	UL	15,000	11,000	12,000	NP	12,000	9,500	NP
	S1	UL	UL	60,000	44,000	48,000	NP	48,000	38,000	NP
	SM	UL	UL	45,000	33,000	36,000	NP	36,000	28,500	NP

I-3	NS ^{d, e}	UL	UL	15,000	10,000	10,500	7,500	12,000	7,500	5,000
	S1	UL	UL	45,000	40,000	42,000	30,000	48,000	30,000	20,000
	SM	UL	UL	45,000	30,000	31,500	22,500	36,000	22,500	15,000
I-4	NS ^{d, g}	UL	60,500	26,500	13,000	23,500	13,000	25,500	18,500	9,000
	S1	UL	121,000	106,000	52,000	94,000	52,000	102,000	74,000	36,000
	SM	UL	181,500	79,500	39,000	70,500	39,000	76,500	55,500	27,000
M	NS	UL	UL	21,500	12,500	18,500	12,500	20,500	14,000	9,000
	S1	UL	UL	86,000	50,000	74,000	50,000	82,000	56,000	36,000
	SM	UL	UL	64,500	37,500	55,500	37,500	61,500	42,000	27,000
R-1 ^h	NS ^{d, f, h}	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000
	S13R									
	S1	UL	UL	96,000	64,000	96,000	64,000	82,000	48,000	28,000
	SM	UL	UL	72,000	48,000	72,000	48,000	61,500	36,000	21,000
R-2 ^h	NS ^{d, f, h}	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000
	S13R									
	S1	UL	UL	96,000	64,000	96,000	64,000	82,000	48,000	28,000
	SM	UL	UL	72,000	48,000	72,000	48,000	61,500	36,000	21,000
R-3 ^h	NS ^{d, f, h}	UL	UL	UL	UL	UL	UL	UL	UL	UL
	<u>S13D</u>									
	S13R									
	S1									
	SM									
R-4 ^h	NS ^{d, f, h}	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000
	<u>S13D</u>									
	S13R									
	S1	UL	UL	96,000	64,000	96,000	64,000	82,000	48,000	28,000
	SM	UL	UL	72,000	48,000	72,000	48,000	61,500	36,000	21,000
S-1	NS	UL	48,000	26,000	17,500	26,000	17,500	25,500	14,000	9,000
	S1	UL	192,000	104,000	70,000	104,000	70,000	102,000	56,000	36,000
	SM	UL	144,000	78,000	52,500	78,000	52,500	76,500	42,000	27,000
S-2	NS	UL	79,000	39,000	26,000	39,000	26,000	38,500	21,000	13,500
	S1	UL	316,000	156,000	104,000	156,000	104,000	154,000	84,000	54,000
	SM	UL	237,000	117,000	78,000	117,000	78,000	115,500	63,000	40,500

U	NS	UL	35,500	19,000	8,500	14,000	8,500	18,000	9,000	5,500
	S1	UL	142,000	76,000	34,000	56,000	34,000	72,000	36,000	22,000
	SM	UL	106,500	57,000	25,500	42,000	25,500	54,000	27,000	16,500

Note: UL = Unlimited; NP = Not permitted;

For SI: 1 square foot = 0.0929 m².

NS = Buildings not equipped throughout with an automatic sprinkler system; S1 = Buildings a maximum of one story above grade plane equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; SM = Buildings two or more stories above grade plane equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; S13R = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2; S13D = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.3.

- See Chapters 4 and 5 for specific exceptions to the allowable height in this chapter.
- See Section 903.2 for the minimum thresholds for protection by an automatic sprinkler system for specific occupancies.
- New Group H occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.5.
- The NS value is only for use in evaluation of existing building area in accordance with the *International Existing Building Code*.
- New Group I-1 and I-3 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6. For new Group I-1 occupancies, Condition 1, see Exception 1 of Section 903.2.6.
- New and existing Group I-2 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6 and Section 1103.5 of the *International Fire Code*.
- New Group I-4 occupancies see Exceptions 2 and 3 of Section 903.2.6.
- New Group R occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.8.

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	C	A	B	C
R-4 ^m	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 ^m	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 = 0.0929m².

- a. Class C interior finish materials shall be permitted for wainscoting or paneling of not more than 1,000 square feet of applied surface area in the grade lobby where applied directly to a noncombustible base or over furring strips applied to a noncombustible base and 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 wainscoting 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. Where Group R-3 and R-4 occupancies are permitted in Section 903.2.8 to be protected by an automatic sprinkler system installed in accordance with Section 903.3.1.3 the requirements for a non-sprinklered building shall apply.

TABLE 1006.2.1
SPACES WITH ONE EXIT OR EXIT ACCESS DOORWAY

OCCUPANCY	MAXIMUM OCCUPANT LOAD OF SPACE	MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE (feet)		
		Without Sprinkler System (feet)		With Sprinkler System (feet)
		Occupant Load		
		OL ≤ 30	OL 30	
A ^c , E, M	49	75	75	75 ^a
B	49	100	75	100 ^a
F	49	75	75	100 ^a
H-1, H-2, H-3	3	NP	NP	25 ^b
H-4, H-5	10	NP	NP	75 ^b
I-1, I-2 ^d , I-4	10	NP	NP	75 ^a
I-3	10	NP	NP	100 ^a
R-1	10	NP	NP	75 ^a
R-2	10	NP	NP	125 ^a
R-3 ^e	10	NP	NP	125 ^{a,g}
R-4 ^e	10	75 NP	75 NP	125 ^{a,g}
S ^f	29	100	75	100 ^a
U	49	100	75	75 ^a

For SI: 1 foot = 304.8 mm.

NP = Not Permitted

- a. Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where *automatic sprinkler systems* are permitted in accordance with Section 903.3.1.2.
- b. Group H occupancies equipped throughout with an *automatic sprinkler system* in accordance with Section 903.2.5.
- c. For a room or space used for assembly purposes having *fixed seating*, see Section 1029.8.
- d. For the travel distance limitations in Group I-2, see Section 407.4.
- e. The length of *common path of egress travel* distance in a Group R-3 occupancy located in a mixed occupancy building or within a Group R-3 or R-4 *congregate living facility*.
- f. The length of *common path of egress travel* distance in a Group S-2 *open parking garage* shall be not more than 100 feet.
- g. For the travel distance limitations in Group R-3 and R-4 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.3, see Section 1006.2.2.6.

1006.2.2 Egress based on use. The numbers of *exits* or access to *exits* shall be provided in the uses described in Sections 1006.2.2.1 through ~~1006.2.2.5~~1006.2.2.6.

Add new text as follows:

1006.2.2.6 Group R-3 and R-4. Where Group R-3 occupancies are permitted by Section 903.2.8 to be protected by an automatic sprinkler system installed in accordance with Section 903.3.1.3, the exit access travel distance for Group R-3 shall not be more than 125 feet. Where Group R-4 occupancies are permitted by Section 903.2.8 to be protected by an automatic sprinkler system installed in accordance with Section 903.3.1.3, the exit access travel distance for Group R-4 shall not be more than 75 feet.

TABLE 1017.2
EXIT ACCESS TRAVEL DISTANCE^a

OCCUPANCY	WITHOUT SPRINKLER SYSTEM (feet)	WITH SPRINKLER SYSTEM (feet)
A, E, F-1, M, R, S-1	200 ^e	250 ^b
I-1	Not Permitted	250 ^b
B	200	300 ^c
F-2, S-2, U	300	400 ^c
H-1	Not Permitted	75 ^d
H-2	Not Permitted	100 ^d
H-3	Not Permitted	150 ^d
H-4	Not Permitted	175 ^d
H-5	Not Permitted	200 ^c
I-2, I-3, I-4	Not Permitted	200 ^c

For SI: 1 foot = 304.8 mm.

- a. See the following sections for modifications to *exit access* travel distance requirements:

Section 402.8: For the distance limitation in malls.

Section 404.9: For the distance limitation through an atrium space.

Section 407.4: For the distance limitation in Group I-2.

Sections 408.6.1 and 408.8.1: For the distance limitations in Group I-3.

Section 411.4: For the distance limitation in special amusement buildings.

Section 412.7: For the distance limitations in aircraft manufacturing facilities.

Section 1006.2.2.2: For the distance limitation in refrigeration machinery rooms.

Section 1006.2.2.3: For the distance limitation in refrigerated rooms and spaces.

Section 1006.3.2: For buildings with one exit.

Section 1017.2.2: For increased distance limitation in Groups F-1 and S-1.

Section 1029.7: For increased limitation in assembly seating.

Section 3103.4: For temporary structures.

Section 3104.9: For pedestrian walkways.

b. Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where *automatic sprinkler systems* are permitted in accordance with Section 903.3.1.2.

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

d. Group H occupancies equipped throughout with an *automatic sprinkler system* in accordance with Section 903.2.5.1.

e. Group R-3 and R-4 buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.3. See Section 903.2.8 for occupancies where automatic sprinkler systems are permitted in accordance with Section 903.3.1.3.

TABLE 1020.1
CORRIDOR FIRE-RESISTANCE RATING

OCCUPANCY	OCCUPANT LOAD SERVED BY CORRIDOR	REQUIRED FIRE-RESISTANCE RATING (hours)	
		Without sprinkler system	With sprinkler system ^c
H-1, H-2, H-3	All	Not Permitted	1
H-4, H-5	Greater than 30	Not Permitted	1
A, B, E, F, M, S, U	Greater than 30	1	0
R	Greater than 10	Not Permitted 1 ^d	0.5
I-2 ^a , I-4	All	Not Permitted	0
I-1, I-3	All	Not Permitted	1 ^b

a. For requirements for occupancies in Group I-2, see Sections 407.2 and 407.3.

b. For a reduction in the *fire-resistance rating* for occupancies in Group I-3, see Section 408.8.

c. Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2 where allowed.

d. Group R-3 and R-4 buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.3. See Section 903.2.8 for occupancies where automatic sprinkler systems are permitted in accordance with Section 903.3.1.3.

Reason:

The current tables do not include any requirement for Group R-3 and R-4 occupancies that are permitted to use a NFPA 13D systems. Saying just use the non-sprinklered requirements does not work because in some cases that is allowing a taller building than a building with an NFPA13R system. This is NOT asking for ANY tradeoffs for an NFPA13D system. The provisions applied are always the MOST RESTRICTIVE of what is permitted for a non-sprinklered building or a building using an NFPA13R system.

There have been a series of lawsuits against jurisdictions across the United States regarding enforcement of requirements for group homes that exceed the requirements for single family homes. This is being interpreted as a violation of the Fair Housing Act. The CTC committee reviewed the requirements for group homes in the codes to see where there were differences and if these differences were justified due to the level of care provided for the residents. In some limited situations, where there was a question for Group R-4 group homes, the same issue existing for Group R-3 congregate residences. For consistency in the code, these need to be considered together rather than separately. Therefore, this proposal is for both Group R-4 and Group R-3 congregate residences (both with 16 or fewer residents per Sections 310.5 and 310.6.)

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

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

Cost Impact: Will not increase the cost of construction

This is a clarification of the code, therefore, there will not be an increase in cost.

G 134-15

504.4

Proponent: Jay Hyde, representing Sacramento Valley Association of Building Officials (jhyde@mognot.com)

2015 International Building Code

Revise as follows:

504.4 Number of stories. The maximum number of stories of a building shall not exceed the limits specified in Table 504.4. For the purposes of determining the allowable number of stories, an occupied roof shall not be considered a story.

Reason: An occupied roof does not have side walls or a floor or roof above. Products of Combustion, such as smoke or hot gasses will not be trapped endangering the occupants. In addition, an occupied roof would not contribute appreciably to the fuel load of the building. This clarification makes it clear that the story limits for a given occupancy in a building of a given construction type apply to a story as defined by Chapter 2 and that an occupied roof may be above the top story with out violating the story limits of Table 504.4.

Cost Impact: Will not increase the cost of construction

May decrease the cost of construction by not requiring that a construction type be increased due to the location of an occupied roof.

G 134-15 : 504.4-HYDE5273

G 135-15

Section 504.5 (New)

Proponent: Stephen Skalko, representing Masonry Alliance for Codes and Standards (svskalko@cox.net)

2015 International Building Code

Add new text as follows:

Section 504.5 Fire apparatus access roads Not less than two fire apparatus access roads shall be provided for buildings of Type III, IV or V construction that are four or more stories in height. The fire apparatus access roads shall comply with Section 503 of the *International Fire Code*. The termination point of the fire apparatus access roads on the building site shall be placed a distance apart not less than one-third of the length of the maximum overall diagonal dimension of the building or area to be served, as measured in a straight line.

Reason: As buildings of Type III, IV and V construction are being built to taller heights as allowed in Tables 504.3 and 504.4 of the code, they are representing a significant challenge for the fire service in responding to and attempting to extinguish or control the burning of the combustible structure, especially at the higher elevations. In addition, these buildings of combustible material necessitate response by larger numbers of fire fighters and fire apparatus. This is evident by the fires that have occurred in recent years for buildings of combustible framing under construction.

A recent example is a major fire in Los Angeles with five stories of wood framing over a two story concrete podium on December 8, 2014. The apartment building known as the DaVinci required more than 250 firefighters to be dispatched to the scene. Access to parts of the building under fire was limited by the site layout.

Other recent large combustible framed building that experienced fires also presented significant challenges for the fire service include:

1. Monroe Apartments, Portland, OR August 8, 2013
2. Student Apartments, Kingston, Ontario, CAN December 17, 2013
3. 550 East and 500 South, Salt Lake City, UT February 9, 2014
4. Commercial Building, Roxbury, MA, March 3, 2014
5. Mission Bay Project, San Francisco, CA March 11, 2014
6. Axis Apartments, Houston, TX, March 25, 2014
7. Beacon Street, Boston, MA March 27, 2014
8. Gables Upper Rock, Rockville, MD April, 2014
9. SE Tech Center Drive, Vancouver, WA, June 19, 2014
10. Victoria Commons, Kitchener, Ontario, CAN, July 22, 2014
11. Apollo Way, Madison, WI August 8, 2014

This proposal will require at least two fire apparatus access roads be provided for these taller buildings of combustible construction to assist the fire service in responding to and possibly gaining early control of the fire. To insure reasonable remoteness of the location of these access roads on site they are being required to be placed a distance equal to 1/3 the overall diagonal of the building similar to criteria for remoteness of exits and exit access in Section 1007.1.1.

Cost Impact: Will increase the cost of construction

This proposal is expected to increase the cost of construction due to the additional fire apparatus access roads required on site. This increased cost however is necessary to reduce the risk of damage to adjacent properties due to fire exposure and provide the fire service with improved access for firefighting response to these taller buildings of combustible construction.

G 135-15 : 504.5 (New)-SKALKO5797

G 136-15

505.2

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

2015 International Building Code

Revise as follows:

505.2 Mezzanines. A *mezzanine* or *mezzanines* in compliance with Section 505.2 shall be considered a portion of the *story* below. Such *mezzanines* shall not contribute to either the *building area* or number of *stories* as regulated by Section 503.1. The area of the *mezzanine* shall be included in determining the *fire area*. The clear height above and below the *mezzanine* floor construction shall be not less than 7 feet 6 inches (2286 mm).

Exception: The clear height above and below the mezzanine shall not be less than 7 feet (2134 mm) where occupant loads are equal to or less than those shown in Table 1006.2.1.

Reason: Mezzanines are grouped with equipment platforms in the code. This is consistent with the thought that mezzanines are primarily small areas for equipment or storage. However the size of the mezzanine is only limited by the area of the floor below; larger floor plates allow larger mezzanines. The code encourages the use of large mezzanines since they do not count as stories and do not contribute to building area. The occupancy group of mezzanines is also not limited. As a consequence of these two conditions the code allows large occupancy loads in mezzanines. Greater occupancy loads increases evacuation times. Section 1208.2 dictates a minimum ceiling height of 7'-6" for occupiable spaces, habitable spaces and corridors.

Section 1003.2 requires the clear height of a means of egress be at least 7'-6" with some exceptions. One exception being a mezzanine designed in accordance with Section 505. By limiting the occupant loads to those shown in Table 1006.2.1 for the threshold at which additional means of egress would be required would reduce any potential risk of endangering occupant in a fire event.

Cost Impact: Will increase the cost of construction

For larger mezzanines, this proposal will increase the cost of construction by requiring taller ceiling heights than are currently required by code.

G 136-15 : 505.2-DIGIOVANNI3826

G 137-15

505.2.1, 505.2.1.1 (New), 505.3.1

Proponent: Maureen Traxler, City of Seattle Dept of Planning & Development, representing Washington Association of Building Officials Technical Code Development Committee (maureen.traxler@seattle.gov)

2015 International Building Code

Revise as follows:

505.2.1 Area limitation. The aggregate area of a *mezzanine* or *mezzanines* within a room shall be not greater than one-third of the floor area of that room or space in which they are located. The enclosed portion of a room shall not be included in a determination of the floor area of the room in which the *mezzanine* is located. In determining the allowable *mezzanine* area, the area of the *mezzanine* shall not be included in the floor area of the room.

~~Where a room contains both a *mezzanine* and an *equipment platform*, the aggregate area of the two raised floor levels shall be not greater than two-thirds of the floor area of that room or space in which they are located.~~

Exceptions:

1. The aggregate area of *mezzanines* in buildings and structures of Type I or II construction for special industrial occupancies in accordance with Section 503.1.1 shall be not greater than two-thirds of the floor area of the room.
2. The aggregate area of *mezzanines* in buildings and structures of Type I or II construction shall be not greater than one-half of the floor area of the room in buildings and structures equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1 and an *approved emergency voice/alarm communication system* in accordance with Section 907.5.2.2.

505.2.1.1 Aggregate area of mezzanines and equipment platforms ~~Where a room contains both a *mezzanine* and an *equipment platform*, the aggregate area of the two raised floor levels shall be not greater than two-thirds of the floor area of that room or space in which they are located. The area of the *mezzanine* shall not exceed the area determined according to Section 505.2.1.~~

505.3.1 Area limitation. The aggregate area of all *equipment platforms* within a room shall be not greater than two-thirds of the area of the room in which they are located. Where an *equipment platform* is located in the same room as a *mezzanine*, the area of the *mezzanine* shall be determined by Section 505.2.1 and the combined aggregate area of the *equipment platforms* and *mezzanines* shall be not greater than two-thirds of the room in which they are located. ~~The area of the *mezzanine* shall not exceed the area determined according to Section 505.2.1.~~

Reason: The current language states that, when a mezzanine and an equipment platform are located in the same room, their total area can be 2/3 the area of the room. This language allows mezzanines to be larger than is intended by the code. For example, it allows a room to have a small equipment platform with an area 1% the size of the room and a large mezzanine with an area 65% the size of the room.

The statement that the mezzanine's area is determined by Section 505.2.1 doesn't quite solve the problem because the same language about aggregating the area appears there, too. We propose putting the provisions related to aggregate area of mezzanines and platforms into a new subsection 505.2.1.1 to allow us to refer to the base language about mezzanine area separately. No change to the Section 505.2.1 exceptions is proposed; they are merely moved so they stay with the base language about area of mezzanines.

Cost Impact: Will not increase the cost of construction

This proposal is a clarification of existing code provisions and will not increase the cost of construction.

G 137-15 : 505.2.1-TRAXLER4267

G 138-15

505.2.1

Proponent: Marshall Klein, representing NMHC

2015 International Building Code

Revise as follows:

505.2.1 Area limitation. The aggregate area of a *mezzanine* or *mezzanines* within a room shall be not greater than one-third of the floor area of that room or space in which they are located. The enclosed portion of a room shall not be included in a determination of the floor area of the room in which the *mezzanine* is located. In determining the allowable *mezzanine* area, the area of the *mezzanine* shall not be included in the floor area of the room.

Where a room contains both a *mezzanine* and an *equipment platform*, the aggregate area of the two raised floor levels shall be not greater than two-thirds of the floor area of that room or space in which they are located.

Exceptions:

1. The aggregate area of *mezzanines* in buildings and structures of Type I or II construction for special industrial occupancies in accordance with Section 503.1.1 shall be not greater than two-thirds of the floor area of the room.
2. The aggregate area of *mezzanines* in buildings and structures of Type I or II construction shall be not greater than one-half of the floor area of the room in buildings and structures equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1 and an *approved emergency voice/alarm communication system* in accordance with Section 907.5.2.2.
3. The aggregate area of a *mezzanine* within a *dwelling unit* that is located in a building equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 shall not be greater than one-half of the floor area of the room, provided:
 - 3.1. The *mezzanine*, other than enclosed closets and bathrooms, shall be open to the room in which such *mezzanine* is located.
 - 3.2. The opening to the room shall be unobstructed except for walls not more than 42 inches (1067 mm) in height, columns and posts, and
 - 3.3. Exceptions to Section 505.2.3 shall not be permitted.

Reason: Currently, Section 505.2.3 permits mezzanines with an occupant load of 10 or less to be entirely enclosed, with an enclosed area up to 1/3 of the area of the room in which the mezzanine is located. This proposal provides an option to forfeit a fully enclosed mezzanine to gain an allowable area up to 1/2 of the room area. From a safety perspective, having the mezzanine open to the space below provides increased awareness for occupants in either area to a hazardous condition that develops within the space. The proposed slight increase in mezzanine area is reasonable based on the increase in safety associated with not allowing the entire mezzanine to be enclosed.

Cost Impact: Will not increase the cost of construction

Because this proposal simply provides an optional exception, there is no impact on the cost of construction unless someone chooses to apply the exception. Where the exception is applied, the cost of construction will presumably decrease based on eliminating the wall that might have otherwise been installed to separate the mezzanine from the room.

G 138-15 : 505.2.1-KLEIN4533

G 139-15

505.2.3

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

2015 International Building Code

Revise as follows:

505.2.3 Openness. A *mezzanine* shall be open and unobstructed to the room in which such *mezzanine* is located except for walls not more than 42 inches (1067 mm) in height, columns and posts.

Exceptions:

1. *Mezzanines* or portions thereof are not required to be open to the room in which the *mezzanines* are located, provided that the *occupant load* of the aggregate area of the enclosed space is not greater than 10.
2. A *mezzanine* having two or more exits or access to exits is not required to be open to the room in which the *mezzanine* is located.
3. *Mezzanines* or portions thereof are not required to be open to the room in which the *mezzanines* are located, provided that the aggregate floor area of the enclosed space is not greater than 10 percent of the *mezzanine* area.
4. In industrial facilities, *mezzanines* used for control equipment are permitted to be glazed on all sides.
5. In occupancies other than Groups H and I, that are no more than two *stories* above *grade plane* and equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, a *mezzanine* having two or more ~~*means of egress*~~ exits or access to exits shall not be required to be open to the room in which the *mezzanine* is located.

Reason: The intent of this proposal is to revise Exception 5 to be consistent with the terminology in Exception 2.

In July/2014 the ICC Board decided to sunset the activities of the Code Technology Committee (CTC). This is being accomplished by re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). This proposal falls under the CTC Area of Study entitled Unenclosed Exit Stairs. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website.

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

Cost Impact: Will not increase the cost of construction
This proposal is a clarification of provisions.

G 139-15 : 505.2.3-KULIK3642

G 140-15

506.1.4 (New)

Proponent: Vickie Lovell, InterCode Incorporated, representing Fire Safe North America (vickie@intercodeinc.com)

2015 International Building Code

Add new text as follows:

506.1.4 Allowable area for buildings in disaster prone regions. For buildings more than one story in height above grade plane that are of construction Types IIB, IIIB and VB, the maximum allowable area shall not be greater than the area permitted for non-sprinklered (NS) buildings in accordance with Table 506.2, adjusted for any frontage increase in accordance with 506.3 and where such buildings are any of the following:

1. Assigned to Seismic Design Category C or D in Table 1613.3.5(1).
2. Located in a flood hazard area established in accordance with Section 1612.3.
3. Located in a hurricane-prone region.

Reason: The purpose of this code change is to reduce the total reliance of a community and its firefighters on sprinkler systems in disaster-prone areas of the country where the water supply and/or power may be interrupted, or are likely to have municipal water system operation issues. This proposal is a very conservative proposal to promote community resiliency by limiting the footprint of multi-story buildings that have no vertical fire compartmentation to that which would be allowed for non-sprinklered buildings. The Type IIB, IIIB, and VB buildings may have a fully involved fire in a very short amount of time in the event that water supplies for sprinklers are reduced or impaired after a natural catastrophe. Such water supply interruptions are not uncommon after natural disasters. For non-rated multi-story buildings, meaning buildings that have no fire resistance rated floors, fire may spread freely and quickly from story to story. Limiting the per-floor area of Type IIB, IIIB, and VB buildings is intended to result in protecting buildings in areas at high risk for natural catastrophes the most essential combustible buildings and facilities with both sprinkler protection and increased fire resistance rated vertical compartmentation. This proposal may be fairly considered to be the proverbial "belt-and suspenders" approach. If one were to fail, the other protection method would provide an added layer of protection that would serve to prevent a life safety disaster.

The 2012 IBC Sections 504.2 and 506.3 had specific allowable increases that were permitted when automatic sprinkler systems were installed. Those allowances have been incorporated into Tables 504.3 and Table 504.4 as S1 and SM. Such allowable area increases permitted by the code assumed that power and water supply will be readily available and reliable for the successful operation of fire suppression systems. This is especially true for combustible construction such as Types IIB, IIIB and VB, and also for non-combustible construction without any vertical compartmentation. For some parts of the country where buildings impacted by a natural disaster may remain without reliable water and or power for a considerable period of time, that general assumption may not be an acceptable risk. It may also be an unacceptable risk to assume that firefighters will be able to respond at their normal efficiencies.

Responding to the challenge of mitigating damage from natural disasters, California has more stringent requirements on buildings they have designated as "high-risk ". But more than 15% of the U.S. population lives in potential major earthquake areas. 41 states and territories have moderate to high risk. There is a real likelihood of power and water supplies being interrupted following a major seismic event, along with the potential for multiple simultaneous structure fires and also uncontrollable building-to-building fire spread. In October 17, 1989, a 7.1 earthquake in Santa Cruz Mountains was responsible for 26 fires in San Francisco, 60 miles from epicenter. There were 67 documented breaks in water mains which effectively eliminated water pressure in the area. In January 19, 1994, a 6.8 earthquake centered in Northridge, CA. There were approximately 100 fire ignitions, 30 to 50 of those were considered significant. The main cause of fire was largely due to natural gas leaks. Additionally, the water supply systems in the area were damaged causing low pressure in water distribution. On January 17, 1995, a 6.8 (approx.) earthquake near Kobe, Japan caused 90 fires to start within minutes. 85 spread to adjacent buildings and 10 approached or reached conflagration status. 1,700 water line breaks occurred within a couple of hours. There were 7,000 buildings destroyed by fire alone. Similar data of increased fire incidents are available in hurricane and flood prone regions. History has shown that increased incidents of fires after a disaster can be more destructive to life and property than the disaster itself.

This change is limited in its application to multi-story buildings without any vertical fire compartmentation in the higher risk, disaster prone regions defined by the code. There may be some types of combustible materials of these buildings that should appropriately be exempted from this area limitation.

Cost Impact: Will increase the cost of construction

This code change proposal will increase the cost of construction for some building types.

G 140-15 : 506.1.4 (New)-LOVELL5295

G 141-15

TABLE 506.2

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

TABLE 506.2
ALLOWABLE AREA FACTOR (A_f = NS, S1, S13R, or SM, as applicable) IN SQUARE FEET ^{a, b}

OCCUPANCY CLASSIFICATION	SEE FOOTNOTES	TYPE OF CONSTRUCTION								
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
A-1	NS	UL	UL	15,500	8,500	14,000	8,500	15,000	11,500	5,500
	S1	UL	UL	62,000	34,000	56,000	34,000	60,000	46,000	22,000
	SM	UL	UL	46,500	25,500	42,000	25,500	45,000	34,500	16,500
A-2	NS	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	60,000	46,000	24,000
	SM	UL	UL	46,500	28,500	42,000	28,500	45,000	34,500	18,000
A-3	NS	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	60,000	46,000	24,000
	SM	UL	UL	46,500	28,500	42,000	28,500	45,000	34,500	18,000
A-4	NS	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	60,000	46,000	24,000
	SM	UL	UL	46,500	28,500	42,000	28,500	45,000	34,500	18,000
A-5	NS	UL	UL	UL	UL	UL	UL	UL	UL	UL
	S1									
	SM									
B	NS	UL	UL	37,500	23,000	28,500	19,000	36,000	18,000	9,000
	S1	UL	UL	150,000	92,000	114,000	76,000	144,000	72,000	36,000
	SM	UL	UL	112,500	69,000	85,500	57,000	108,000	54,000	27,000
E	NS	UL	UL	26,500	14,500	23,500	14,500	25,500	18,500	9,500
	S1	UL	UL	106,000	58,000	94,000	58,000	102,000	74,000	38,000
	SM	UL	UL	79,500	43,500	70,500	43,500	76,500	55,500	28,500
F-1	NS	UL	UL	25,000	15,500	19,000	12,000	33,500	14,000	8,500
	S1	UL	UL	100,000	62,000	76,000	48,000	134,000	56,000	34,000
	SM	UL	UL	75,000	46,500	57,000	36,000	100,500	42,000	25,500
F-2	NS	UL	UL	37,500	23,000	28,500	18,000	50,500	21,000	13,000
	S1	UL	UL	150,000	92,000	114,000	72,000	202,000	84,000	52,000

	SM	UL	UL	112,500	69,000	85,500	54,000	151,500	63,000	39,000
H-1	NS ^c	21,000	16,500	11,000	7,000	9,500	7,000	10,500	7,500	NP
	S1									
H-2	NS ^c	21,000	16,500	11,000	7,000	9,500	7,000	10,500	7,500	3,000
	S1									
	SM									
H-3	NS ^c	UL	60,000	26,500	14,000	17,500	13,000	25,500	10,000	5,000
	S1									
	SM									
H-4	NS ^{c, d}	UL	UL	37,500	17,500	28,500	17,500	36,000	18,000	6,500
	S1	UL	UL	150,000	70,000	114,000	70,000	144,000	72,000	26,000
	SM	UL	UL	112,500	52,500	85,500	52,500	108,000	54,000	19,500
H-5	NS ^{c, d}	UL	UL	37,500	23,000	28,500	19,000	36,000	18,000	9,000
	S1	UL	UL	150,000	92,000	114,000	76,000	144,000	72,000	36,000
	SM	UL	UL	112,500	69,000	85,500	57,000	108,000	54,000	27,000

OCCUPANCY CLASSIFICATION	SEE FOOTNOTES	TYPE OF CONSTRUCTION								
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
I-1	NS ^{d, e}	UL	55,000	19,000	10,000	16,500	10,000	18,000	10,500	4,500
	S1	UL	220,000	76,000	40,000	66,000	40,000	72,000	42,000	18,000
	SM	UL	165,000	57,000	30,000	49,500	30,000	54,000	31,500	13,500
I-2	NS ^{d, f}	UL	UL	15,000	11,000	12,000	NP	12,000	9,500	NP
	S1	UL	UL	60,000	44,000	48,000	NP	48,000	38,000	NP
	SM	UL	UL	45,000	33,000	36,000	NP	36,000	28,500	NP
I-3	NS ^{d, e}	UL	UL	15,000	10,000	10,500	7,500	12,000	7,500	5,000
	S1	UL	UL	45,000	40,000	42,000	30,000	48,000	30,000	20,000
	SM	UL	UL	45,000	30,000	31,500	22,500	36,000	22,500	15,000
I-4	NS ^{d, g}	UL	60,500	26,500	13,000	23,500	13,000	25,500	18,500	9,000
	S1	UL	121,000	106,000	52,000	94,000	52,000	102,000	74,000	36,000
	SM	UL	181,500	79,500	39,000	70,500	39,000	76,500	55,500	27,000
M	NS	UL	UL	21,500	12,500	18,500	12,500	20,500	14,000	9,000
	S1	UL	UL	86,000	50,000	74,000	50,000	82,000	56,000	36,000

	SM	UL	UL	64,500	37,500	55,500	37,500	61,500	42,000	27,000
R-1	NS ^{d, h}	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000
	S13R									
	S1	UL	UL	96,000	64,000	96,000	64,000	82,000	48,000	28,000
	SM	UL	UL	72,000	48,000	72,000	48,000	61,500	36,000	21,000
R-2	NS ^{d, h}	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000
	S13R									
	S1	UL	UL	96,000	64,000	96,000	64,000	82,000	48,000	28,000
	SM	UL	UL	72,000	48,000	72,000	48,000	61,500	36,000	21,000
R-3	NS ^{d, h}	UL	UL	UL	UL	UL	UL	UL	UL	UL
	S13R									
	S1									
	SM									
R-4	NS ^{d, h}	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000
	S13R									
	S1	UL	UL	96,000	64,000	96,000	64,000	82,000	48,000	28,000
	SM	UL	UL	72,000	48,000	72,000	48,000	61,500	36,000	21,000
S-1	NS	UL	48,000	26,000	17,500	26,000	17,500	25,500	14,000	9,000
	S1	UL	192,000	104,000	70,000	104,000	70,000	102,000	56,000	36,000
	SM	UL	144,000	78,000	52,500	78,000	52,500	76,500	42,000	27,000
S-2	NS	UL	79,000	39,000	26,000	39,000	26,000	38,500	21,000	13,500
	S1	UL	316,000	156,000	104,000	156,000	104,000	154,000	84,000	54,000
	SM	UL	237,000	117,000	78,000	117,000	78,000	115,500	63,000	40,500
U	NS ⁱ	UL	35,500	19,000	8,500	14,000	8,500	18,000	9,000	5,500
	S1	UL	142,000	76,000	34,000	56,000	34,000	72,000	36,000	22,000
	SM	UL	106,500	57,000	25,500	42,000	25,500	54,000	27,000	16,500

Note: UL = Unlimited; NP = Not permitted;

For SI: 1 square foot = 0.0929 m².

NS = Buildings not equipped throughout with an automatic sprinkler system; S1 = Buildings a maximum of one story above grade plane equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; SM = Buildings two or more stories above grade plane equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; S13R = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2.

- See Chapters 4 and 5 for specific exceptions to the allowable height in this chapter.
- See Section 903.2 for the minimum thresholds for protection by an automatic sprinkler system for specific occupancies.
- New Group H occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.5.
- The NS value is only for use in evaluation of existing building area in accordance with the *International Existing Building Code*.
- New Group I-1 and I-3 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6. For new Group I-1 occupancies, Condition 1, see Exception 1 of Section 903.2.6.
- New and existing Group I-2 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6 and Section 1103.5 of the *International Fire Code*.

- g. New Group I-4 occupancies see Exceptions 2 and 3 of Section 903.2.6.
- h. New Group R occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.8.
- i. The maximum allowable area for a single story non-sprinklered Group U greenhouse is permitted to be 9,000 sq. ft., or shall be permitted to comply with Table C102.1 of Appendix C in this code.

-

Reason: The primary function of a greenhouse is to create a controlled environment for the propagation and cultivation of plants, and is intended to achieve the optimum environment for the protection of the plants from the outside environment. Many typical building requirements intended for human comfort, health, safety and welfare are not applicable or necessary for the construction or operation of greenhouses. The majority of commercial greenhouses are truly agricultural structures and classified as Group U. Nearly all greenhouses are built as Type VB (NS) construction. This purpose of this proposal increases the maximum allowable area of single story Group U greenhouses (NS) from 5,500 to 9,000. The allowable area for other structures in use Group U would remain unchanged.

Appendix C of the IBC permits 12,000 sq. ft. of allowable area for ALL Group U structures, including greenhouses.

The IBC currently permits a minimum allowable area of 9,000 sq. ft. for non-sprinklered, Type VB greenhouses classified as Group B, E, M or F-2 (which could have significant occupant load due to access by the public). Using a determination based on "equivalent risk" described in the preface pages of the IBC on page xi, "equivalent risk involves three interdependent considerations: (1) the level of fire hazard associated with the specific occupancy of the facility; (2) the reduction of fire hazard by limiting the floor area(s) and the height of the building based on the fuel load (combustible contents and burnable building components) and (3) the level of overall fire resistance provided by the type of construction used for the building. The greater the potential fire hazards indicated as a function of the group, the lesser the height and area allowances for a particular construction type." Therefore, it would be difficult to justify why a Group U greenhouse should be permitted less allowable area than an identical greenhouse permitted as Group B, E, F-2 or M. This proposal permits a Group U greenhouse to have the same allowable area as other use groups when there is no increased risk.

Cost Impact: Will not increase the cost of construction

There is no cost impact related to this proposal because the code already permits the allowable area to be more than 5,500 sq. ft. in greenhouses.

G 141-15 : T506.2-LOVELL4414

G 142-15

506.3, 506.3.1

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

2015 International Building Code

Revise as follows:

506.3 Frontage increase. Every building shall adjoin or have access to a public way to receive an area factor increase based on frontage. ~~Area~~ Buildings four stories or more in height, as measured from the grade plane, of Type III and V construction, using combustible framing material shall also not have less than 25 percent of its perimeter on a public way or open space. Such open space shall be either on the same lot or dedicated for public use and shall be accessed from a street or approved fire lane. The area factor increase shall be determined in accordance with Sections 506.3.1 through 506.3.3.

506.3.1 Minimum percentage of perimeter. To qualify for an area factor increase based on frontage, a building shall have not less than 25 percent of its perimeter on a public way or open space. Such open space shall be either on the same lot or dedicated for public use and shall be accessed from a street or approved fire lane. Open space for buildings four or more stories in height as measured from the grade plane, of Type III and V construction, using combustible framing material shall have a grade of not more than 10 percent and be provided with a fire apparatus access road in accordance with Section 503 of the International Fire Code for full length of open space. Open space that is not used for open perimeter area increases are not required to provide fire apparatus access roads or 10 percent grade.

Reason: Fires during construction have been on the increase across the U.S and other countries which utilize combustible construction in multi-story buildings. The intensity of these fires put adjacent buildings, businesses and residents at risk until the project is complete, which can take up to 2 years to complete or more if the project stalls. These fires are caused by a multitude of reasons including but not limited to arson, smoking, cooking, heating and hot work. Fire service, even in large well equipped jurisdictions cannot effectively stop these conflagrations and most of these incidents end in total loss of the building under construction as well as damaged or destroyed adjacent buildings. Many times adjacent buildings are at risk due to the extreme heat, flying embers and wind speeds, as seen in the recent Los Angeles fire where paper, laying on a desk in an adjacent high rise structure caught fire and 6 six floors of the high rise were on fire. Currently the building code allows a 75% increase in the base tabular area when the structure has an on open perimeter of 20-30 feet, in more than 25 percent of total building perimeter. Currently the open space is not required to be open or traversable by fire apparatus vehicles.

This code proposal does two things: First requires that all Type III and V buildings, 4 or more stories, be required to provide 25% open space or public space and secondly would require that the open space, used for an increase in allowable area, be usable by the fire service and apparatus, in Type III and V buildings 4 or more stories in height.

Fire service must be able to access the structure to effectively battle the fire. If a building is allowed to be built bigger by providing open space, the space should serve as access for fire fighting.

Cost Impact: Will increase the cost of construction

This change will increase the cost of construction for Type III and V construction, 4 stories and over, using combustible construction.

G 142-15 : 506.3-HALL4560

G 143-15

202 (New), 506.3.1

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

2015 International Building Code

Add new text as follows:

SECTION 202 DEFINITIONS

FIRE APPARATUS ACCESS ROAD A road that provides fire apparatus access from a fire station to a facility, building or portion thereof. This is a general term inclusive of all other terms such as fire lane, public street, private street, parking lot lane and access roadway.

Revise as follows:

506.3.1 Minimum percentage of perimeter. To qualify for an area factor increase based on frontage, a building shall have not less than 25 percent of its perimeter fronting on a public way or open space yard. Such open space shall be either on the same lot or dedicated for public use and shall be accessed from a street or approved fire lane apparatus access road.

Reason: Section 202 of the International Fire Code more clearly describes what the I codes intend when the term fire lane is used. The term makes it clear that it's purpose is for the movement and staging of fire apparatus and includes private streets, parking lo lanes and access roadways. This editorial code change adds consistency and clarity. The term fire lane is too restrictive since it is evident from definition in IBC Section 202 and states that a fire lane is "A road or other passageway developed to allow the passage of fire apparatus. A fire lane is not necessarily intended for vehicular traffic other than fire apparatus". A fire apparatus access road can be used by vehicles other than fire apparatus. Additionally open space is not a defined term however yard is and yard is required to be clear and open to the sky which is what is intended for the open space.

The term fire lane is used in three instances in the IBC (Section 202, 506.3.1 and 705.8.1 Except 1 and 2) and since it is a permissible element within the fire aparatus roadway definition the proposed definition will not add conflicts with other parts of the code.

Cost Impact: Will not increase the cost of construction

This code change is editorial. A fire access roadway will be required by the fire code to access exterior portions of a building within 200 ft of the response point.

G 143-15 : 506.3.1-FATTAH4661

G 144-15

506.3.3, 506.3.3.1 (New), 506.3.3.2 (New)

Proponent: William Hall, representing Portland Cement Association (jhall@cement.org); Jason Thompson (jthompson@ncma.org)

2015 International Building Code

Revise as follows:

506.3.3 Amount of increase. The area factor increase based on frontage shall be determined in accordance with ~~Equation 5-5:~~ Sections 506.3.3.1 and 506.3.3.2.

$$I_f = [F/P - 0.25]W/30 \quad \text{(Equation 5-5)}$$

where:

- I_f = Area factor increase due to frontage.
- F = Building perimeter that fronts on a ~~public~~ way or open space having minimum distance of 20 feet (6096 mm).
- P = Perimeter of entire building (feet).
- W = Width of ~~public way~~ or open space (feet) in accordance with Section 506.3.2.

506.3.3.1 Type II construction The area factor increase based on frontage shall be determined in accordance with equation 5.5.

$$I_f = [F/P - 0.25]W/30 \quad \text{(Equation 5-5)}$$

where:

- I_f = Area factor increase due to frontage.
- F = Building perimeter that fronts on a public way or open space having minimum distance of 20 feet (6096 mm).
- P = Perimeter of entire building (feet).
- W = Width of public way or open space (feet) in accordance with Section 506.3.2.

Add new text as follows:

506.3.3.2 Type III, IV and V Construction. The area factor increase based on frontage shall be determined in accordance with equation 5.6.

$$I_f = [F/P - 0.25]W/30 - H \quad \text{(Equation 5-6)}$$

where:

- I_f = Area factor due to frontage
- F = Building perimeter that fronts on a public way or open space having minimum distance of 20 feet (6096 mm)
- P = Perimeter of entire building (feet).
- W = Width of public way or open space (feet) in accordance with Section 506.3.2.
- H =
 - 0 if 1 story
 - 25% if 2 story
 - 50% if 3 story
 - 75% if 4 or more stories

Where increase factor is negative, 0 shall be used.

Reason: Fires during construction have been on the increase across the U.S and other countries which utilize combustible construction in multi-story buildings. The intensity of these fires put adjacent buildings, businesses and residents at risk until the project is complete, which can take up to 2 years to complete or more if the project stalls. These fires are caused by a multitude of reasons including but not limited to arson, smoking, cooking, heating and hot work. Fire service, even in large well equipped jurisdictions cannot effectively stop these conflagrations and most of these incidents end in total loss of the building under construction as well as damaged or destroyed adjacent buildings. Many times adjacent buildings are at risk due to the extreme heat, flying embers and wind speeds, as seen in the recent Los Angeles fire where paper, laying on a desk in an adjacent high rise structure caught fire and 6 six floors of the high rise were on fire. Currently the building code allows a 75% increase in the base tabular area when the structure has an on open perimeter of 20-30 feet, in more than 25 percent of total building perimeter.

This amount of distance does not correctly relate to safe distances needed to mitigate fire spread by thermal radiation. Based on the research report titled "External fire spread: building separation and boundary distances" published by the Fire Research Station, separation distances of 30 feet during construction are not adequate in limiting fire exposure in adjacent buildings and obviously do not provide safe distances for firefighting operations.

To paraphrase the report, the minimum intensity for fire ignition is 0.3 cal cm-2s-1. To maintain levels at or below this rate of thermal radiation, fire separation distances are based on the height and width of the burning building, the number of windows and a presumed heat release ranging from 2 to 4 cal cm-2s-1 depending on fire load. Office and residential usually are calculated at 2 cal cm-2s-1 but in the construction phase, a total burnout is expected with full exposure so 4 cal cm-2s-1 is the appropriate rate and is very

conservative. Thermal radiation rates could be much higher depending on wind and openness of the structure. Based on this information, fire separation distances for a small building 100 wide by 30 feet tall requires 52 feet of separation to keep adjacent structures at or below the minimum intensity for ignition. A large building, 7 stories, such as the one in LA, would have required a minimum of 141 feet separation distance.

This proposal limits the open perimeter area increase on multi-story combustible buildings based on a separation distance of 30 feet by introducing a new height variable into the equation.

Cost Impact: Will increase the cost of construction

While not directly increasing the cost of construction, this proposal will limit the allowable area increases in some buildings using combustible construction for multi-story construction. The cost impact is difficult to determine, based on means and methods used by the designer.

G 144-15 : 506.3.3-HALL4939

G 145-15

202 (New), 507.2

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

2015 International Building Code

Add new definition as follows:

SECTION 202 DEFINITIONS

FIRE APPARATUS ACCESS ROAD A road that provides fire apparatus access from a fire station to a facility, building or portion thereof. This is a general term inclusive of all other terms such as fire lane, public street, private street, parking lot lane and access roadway.

Revise as follows:

507.2 Measurement of open spaces.

Where Sections 507.3 through 507.13 require buildings to be surrounded and adjoined by *public ways* and *yards*, those open spaces shall be determined as follows:

1. Yards shall be measured from the building perimeter in all directions to the closest interior *lot lines* or to the exterior face of an opposing building located on the same *lot*, as applicable.
2. Where the building fronts on a *public way*, the entire width of the *public way* shall be used.
3. Yards shall be on the same lot and shall be accessed from a *fire apparatus access road*.

Reason: This code change is necessary to ensure that yards used for 60 ft wide open space required for unlimited area buildings be accessible by the fire department. The code change makes Section 507.2 consistent with Section 506.3.1 requires that the yard be located on the same lot and that the yard be accessed from a fire apparatus access road. The term fire apparatus access road is also added in the definitions of the IBC as a part of this code change since the IFC definition is more descriptive of than fire lane of the options that are permissible.

Yards and streets surrounding unlimited area buildings serve two purposes. They provide a fire separation distance of not less than 60 ft for unlimited area buildings to protect adjoining properties. The yard is also used for fire department access for staging and fire fighting purposes.

2012 IBC commentary page 5-15 through 5-17 while intended for Section 507.2 includes figures depicting code intent for access to yards which this code change proposes to codify in the affected Sections.

Unlimited area buildings are large buildings with exterior exit doors on the perimeter, additionally the IFC will require fire access roadways on the sides and possibly the rear of the fire hose pull distance to all portions of the exterior wall of 200 ft is exceeded.

Cost Impact: Will not increase the cost of construction

This is an editorial code change and is necessary to ensure public safety and fire fighter safety.

G 145-15 : 507.2-FATTAH4666

G 146-15

507.4

Proponent: Anthony Apfelbeck, City of Altamonte Springs Building/Fire Safety Division, representing City of Altamonte Springs (ACApfelbeck@altamonte.org)

2015 International Building Code

Revise as follows:

507.4 Sprinklered, one-story buildings. The area of a Group A-4 building no more than one *story above grade plane* of other than Type V construction, or the area of a Group B, F, M or S building no more than one story above grade plane of any construction type, shall not be limited where the building is provided with an *automatic sprinkler system* throughout in accordance with Section 903.3.1.1 and is surrounded and adjoined by *public ways* or *yards* not less than 60 feet (18 288 mm) in width.

Exceptions:

1. Buildings and structures of Type I or II construction for rack storage facilities that do not have access by the public shall not be limited in height, provided that such buildings conform to the requirements of Sections 507.4 and 903.3.1.1 and Chapter 32 of the *International Fire Code*.
2. The *automatic sprinkler system* shall not be required in areas occupied for indoor participant sports, such as tennis, skating, swimming and equestrian activities in occupancies in Group A-4, provided that ~~both~~all of the following criteria are met:
 - 2.1. *Exit* doors directly to the outside are provided for occupants of the participant sports areas.
 - 2.2. The building is equipped with a *fire alarm system* with *manual fire alarm boxes* installed in accordance with Section 907.
 - 2.3. An automatic sprinkler system is provided in storage rooms, press boxes, concession booths or other spaces ancillary to the sport activity space.

Reason: While it is appropriate to eliminate fire sprinklers in the large open spaces of these facilities, protection of ancillary spaces by fire sprinklers should still be provided. Many of these spaces are concealed and don't contribute to the awareness of a developing fire condition. In addition, many ancillary spaces can have significant amounts of combustible contents. Concession spaces and equipment storage spaces are two examples that should still be protected with a fire sprinkler system.

Cost Impact: Will increase the cost of construction

This proposals will increase the cost of construction in order to protect ancillary spaces in these Group A-4 occupancies.

G 146-15 : 507.4-APFELBECK3863

G 147-15

508.2.3

Proponent: Jeff Hugo, National Fire Sprinkler Association, representing National Fire Sprinkler Association (hugo@nfsa.org)

2015 International Building Code

Revise as follows:

508.2.3 Allowable building area. The allowable area of the building shall be based on the applicable provisions of Section 506 for the main occupancy of the building. Aggregate accessory occupancies shall not occupy more than 10 percent of the floor area of the story in which they are located and shall not exceed the tabular values for nonsprinklered buildings in Table 506.2 for each such accessory occupancy.

Exception: Where a building is equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.2, aggregate accessory occupancies shall be not more than 50 per cent of the floor area of the floor of the story in which they are located where such accessory occupancies are permitted by NFPA 13R to be protected by quick-response or residential sprinklers. The allowable building area for stories with such accessory occupancies shall be based on the allowable building area for the main occupancy in accordance with Section 503.1.

Reason: The application of the 10% of the floor area criteria under IBC Section 508.2.3 to such types of residential occupancies covered under NFPA 13R creates major design and cost problems with 2 hour separations for accessory occupancies in such residential buildings. 2013 NFPA 13R Sections 6.2.2, 6.4.7 & 7.2 have detailed sprinkler and compartment requirements incorporated into the NFPA 13R standard to address accessory spaces outside the dwelling units when considered part of the residential (predominant) occupancy. This proposed code change would better correlate with the requirements in NFPA 13R for area/spaces outside the dwelling units that have fire loads similar to residential fire loads and/or are compartmented into 500 square feet or less in area.

Cost Impact: Will not increase the cost of construction

Reduces construction costs by reducing fire barriers between floors and adjacent occupancies.

G 147-15 : 508.2.3-HUGO4650

G 148-15

508.3.1

Proponent: John Williams, CBO, Chair, representing Adhoc Health Care Committee (AHC@iccsafe.org)

2015 International Building Code

Revise as follows:

508.3.1 Occupancy classification. Nonseparated occupancies shall be individually classified in accordance with Section 302.1. The requirements of this code shall apply to each portion of the building based on the occupancy classification of that space. In addition, the most restrictive provisions of Chapter 9 that apply to the nonseparated occupancies shall apply to the total nonseparated occupancy area. Where nonseparated occupancies occur in a *high-rise building*, the most restrictive requirements of Section 403 that apply to the nonseparated occupancies shall apply throughout the *high-rise building*. Where one of the non-separated occupancies is Group I-2, Condition 2, the most restrictive requirements of Sections 407, 509, 712, and Chapter 10 shall apply.

Reason: This proposal modifies the requirements for non-separated mixed uses. In a hospital buildings, it is important to maintain some fire protection features throughout the building. Many of these restrictions directly support the defend-in-place concept that hospitals rely on. Specifically included are incidental use areas, protected vertical openings, and hospital-specific egress provisions. As written, the current code would allow an unprotected vertical opening to be located in the non-separated business portion of a hospital building. Arguably you could use the definition of a smoke compartment to challenge this idea, but that argument is very subtle and highlights an inherent conflict in the code. Section 407 is specific to I-2 occupancies, not to building that contain I-2 occupancies. Yet section 407 contains provisions for corridor construction, smoke compartmentation and hospital specific egress provisions that should be maintained to support the defend in place concept.

By clearly stating in this section that there are some concepts in a hospital building that need to be treated differently, we can provide clear direction to designers and enforcers. This code change is needed to be consistent with the requirements of Medicaid and Medicare (CMS.)

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

Cost Impact: Will increase the cost of construction

While this is an increase in construction based on only IBC requirements, however, this is a requirement from federal CMS in hospitals; therefore, this is not an increase in actual construction cost.

G 148-15 : 508.3.1-WILLIAMS4243

G 149-15

508.3.2, 508.4.3

Proponent: Robert Snyder, City of Bellevue, representing Washington Association of Building Officials Technical Code Development Committee (rsnyder@bellevuewa.gov)

2015 International Building Code

Revise as follows:

508.3.2 Allowable building area, height and heightnumber of stories. The allowable *building area, height and heightnumber of stories* of the building or portion thereof shall be based on the most restrictive allowances for the occupancy groups under consideration for the type of construction of the building in accordance with Section 503.1.

508.4.3 Allowable building height and number of stories. Each separated occupancy shall comply with the *building height and story* limitations based on the type of construction of the building in accordance with Section 503.1.

Exception: Special provisions of Section 510 shall permit occupancies at *building heights and number of stories* other than those provided in Section 503.1.

Reason: This proposal provides consistency between IBC Sections 503.1, 504.1, 504.2, 508.3.2 and 508.4.3 by including both building height and number of stories. The number of stories, as well as, the building height must be considered when determining the requirements for separated and non-separated occupancies.

Cost Impact: Will not increase the cost of construction

The code change proposal will not increase the cost of construction. Changes presented are editorial.

G 149-15 : 508.3.2-SNYDER4503

G 150-15

508.4.1

Proponent: Gregory Keith, Professional heuristic Development, representing The Boeing Company (grkeith@mac.com)

2015 International Building Code

Revise as follows:

508.4.1 Occupancy classification. Separated occupancies shall be individually classified in accordance with Section 302.1. Each separated space shall comply with this code based on the occupancy classification of that portion of the building. The most restrictive provisions of Chapter 9 that apply to the occupancies not required to have an occupancy separation in accordance with Table 508.4 shall apply to the total un-separated occupancy areas. Where such un-separated occupancies occur in a high-rise building, the most restrictive requirements of Section 403 that apply to the un-separated occupancies shall apply throughout the high-rise building.

Reason: IBC mixed occupancy provisions have evolved over several editions. The separated occupancy design option now includes conditions where given occupancies are not required to have a physical occupancy separation. The nonseparated occupancy provisions at Section 508.3.1 state that specific Chapter 9 and Section 403 requirements potentially apply to the entire applicable space. It is only logical that the same requirements apply to un-separated occupancies allowed by Section 508.4. This proposal effectively duplicates the Section 508.3 provisions in Section 508.4. Approval of this proposal will result in the consistent protection of nonseparated and un-separated occupancies.

Cost Impact: Will increase the cost of construction

Potentially, approval of this proposal could result in an increase of cost in some occupancies using the separated mixed occupancy design option. However, such costs will not exceed those currently associated with the nonseparated occupancy design option.

G 150-15 : 508.4.1-KEITH4376

G 151-15

508.4.1, TABLE 508.4

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

2015 International Building Code

Revise as follows:

508.4.1 Occupancy classification. Separated occupancies shall be individually classified in accordance with Section 302.1. Each separated space shall comply with this code based on the occupancy classification of that portion of the building. The most restrictive provisions of Chapter 9 that apply to the separate occupancies shall apply to the total non-fire barrier separated occupancy areas. Occupancy separations that serve to define fire area limits established in Chapter 9 for requiring a fire protection system shall also comply with Section 901.7.

**TABLE 508.4
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)**

OCCUPANCY	A, E		I-1 ^a , I-3, I-4		I-2		R ^a		F-2, S-2 ^b , U		B ^e , F-1, M, S-1		H-1		H-2		H-3, H-4		H-5	
	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS
A, E	N	N	1	2	2	NP	1	2	N	1	1	2	NP	NP	3	4	2	3	2	NP
I-1 ^a , I-3, I-4	—	—	N	N	2	NP	1	NP	1	2	1	2	NP	NP	3	NP	2	NP	2	NP
I-2	—	—	—	—	N	N	2	NP	2	NP	2	NP	NP	NP	3	NP	2	NP	2	NP
R ^a	—	—	—	—	—	—	N	N	1 ^c	2 ^c	1	2	NP	NP	3	NP	2	NP	2	NP
F-2, S-2 ^b , U	—	—	—	—	—	—	—	—	N	N	1	2	NP	NP	3	4	2	3	2	NP
B ^e , F-1, M, S-1	—	—	—	—	—	—	—	—	—	—	N	N	NP	NP	2	3	1	2	1	NP
H-1	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	NP	NP	NP	NP	NP	NP
H-2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	1	NP	1	NP
H-3, H-4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1 ^d	NP	1	NP
H-5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	N	NP

S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

NS = Buildings not equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

N = No separation requirement.

NP = Not permitted.

a. See Section 420.

b. The required separation from areas used only for private or pleasure vehicles shall be reduced by 1 hour but not to less than 1 hour.

c. See Section 406.3.4.

d. Separation is not required between occupancies of the same classification.

e. See Section 422.2 for ambulatory care facilities.

f. Occupancy separations that serve to define fire area limits established in Chapter 9 for requiring fire protection systems shall also comply with Section 707.3.10 and Table 707.3.10 in accordance with Section 901.7.

Reason: This proposal is intended to clarify how to address fire protection installations for separated occupancies where the table does not require a fire separation. The concepts contained within Chapter 9 of the code are that area fire protection systems are installed throughout a fire area at a minimum for proper functioning. The additional language proposed for Section 508.4.1 is copied from Section 508.3.1 and the added note F. provides direct linkage to the fire area provisions found in Chapter 9 and links to the requirements for fire barriers in Chapter 7. This clarification eliminates confusion that occasionally occurs when a designer or code official applies occupancy linked fire protection requirements in a "separated" occupancy that Table 508.4 does not specify a fire rated separation for.

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

Cost Impact: Will not increase the cost of construction

This proposal will not increase the cost of construction. By clarifying how to apply the fire protection requirements for an occupancy classification when dealing with separated occupancies the cost of compliance may be reduced by eliminating costly errors in application.

G 152-15

508.4.4.2 (New)

Proponent: Vickie Lovell, InterCode Incorporated, representing Fire Safe North America (vickie@intercodeinc.com)

2015 International Building Code

Add new text as follows:

508.4.4.2 Fire-resistance ratings. The fire-resistance ratings in Table 508.4 shall not be permitted to be reduced to less than 2 hours in buildings of construction Types IIB, IIBB and VB in Risk Categories III and IV identified in Table 1604.5 where such buildings are any of the following:

1. Assigned to Seismic Design Category C or D in Table 1613.3.5(1).
2. Located in a flood hazard area established in accordance with Section 1612.3.
3. Located in a hurricane-prone region.

Reason: As hazard events, both naturally-occurring and man-made, are increasing in number and severity in the United States and around the world, the resilience of communities and the individual buildings within those communities is becoming of vital importance.

A National Institute of Building Sciences Publication (May, 2014) entitled "Moving Forward: Findings and Recommendations", states that "while a long history of building codes has laid the foundation for addressing the impacts of natural and man-made hazards, changes in the frequency and severity of events have brought new challenges — challenges requiring the engagement and support of policymakers. While building codes serve as the minimum requirements for life-safety in the building stock, basic life-safety protections do not fully address building performance requirements to achieve resilience."

Mitigation includes, among other things, fortifying buildings so that they are less likely to be severely damaged or completely destroyed during or immediately after a disaster. It is the key to recovery after a disaster. Mitigation allows individuals and communities to lessen post-disaster disruption and rebuild more quickly. States and cities have started implementing more stringent requirements in specific geographic areas they have designated as higher-risk. The purpose of this series of code changes proposed by Fire Safe North America is to encourage the debate in the code development process to identify what constitutes resilient buildings, and begin to identify issues that will become the basis for "new minimum requirements" for increased building resiliency.

Responding to the challenge of mitigating damage and resilient buildings is an admittedly complex topic. Fire Safe North America proposals are intended to reduce the total reliance of a community and its firefighters on automatic sprinkler systems in disaster-prone areas of the country where the water supply and/or power are likely to be interrupted, or are likely to have water supply system operational issues. The proposals, if approved, will fortify the building code requirements for the most vulnerable buildings to fire - Type IIB, IIBB, and VB construction, which are also classified as Risk Category III and IV in Table 1604.5, and in high-risk, disaster prone regions. The proposals modify the following code requirements in such buildings:

1. Reduce allowable area limits
2. Protect the path of egress by limiting travel distances
3. Protect the path of egress by protecting corridors
4. Require higher fire resistance ratings for occupancy separations
5. Require higher fire resistance ratings for building elements

These proposals are intended to be conservative so as to promote community resiliency and disaster mitigation by protecting essential buildings with both sprinkler protection AND fire resistance rated compartmentation. These proposals may be fairly considered to be the proverbial "belt-and suspenders" approach, requiring both sprinkler protection and increased fire resistance rated compartmentation in specific buildings in high risk areas for disasters.

Historically, the code has been written using the general assumption that automatic sprinklers will operate satisfactorily and there will be suitable power for such building operations. Code users design and build assuming that firefighters will be able to respond at their normal efficiencies. In some parts of the country, buildings impacted by disasters may remain without reliable water and/or power for a considerable period of time, well after the occurrence of the disaster. History has shown that increased incidents of fires after a disaster can be more destructive to life and property than the disaster itself. Total reliance on an uninterrupted power and water supply may not be an acceptable risk. It may also be an unacceptable risk to assume that firefighters will be able to respond at their normal efficiencies.

For example, more than 15% of the U.S. population lives in potential major earthquake areas. 41 states and territories have moderate to high risk. There is a real likelihood of power and water supplies being interrupted following a major seismic event, along with the potential for multiple simultaneous structure fires and also building-to-building fire spread. In October 17, 1989, a 7.1 earthquake in Santa Cruz Mountains was responsible for 26 fires in San Francisco, 60 miles from epicenter. There were 67 documented breaks in water mains which effectively eliminated water pressure in the area. On January 19, 1994, a 6.8 earthquake centered in Northridge, CA. There were approximately 100 fire ignitions, 30 to 50 of those were considered significant. The water supply systems in the area were damaged causing low pressure in water distribution. On January 17, 1995, a 6.8 (approx.) earthquake near Kobe, Japan caused 90 fires to start within minutes. 85 spread to adjacent buildings and 10 approached or reached conflagration status. 1,700 water line breaks occurred within a couple of hours. There were 7,000 buildings destroyed by fire alone.

In 1997, the Red River flooded Grand Forks, North Dakota, causing \$3.7 billion in flood losses, and displaced thousands of families and businesses. Similar data of increased fire incidents are available in other flood and hurricane-prone areas.

Undoubtedly, this will increase the cost of construction in these specific buildings. However, a recent FEMA's 2010 report "Mitigation's Value to Society" statement described how mitigation is an investment that needs to be made. A recent study by the NIBS Multihazard Mitigation Council (MMC) identified that each dollar spent on mitigation saves an average of \$4.00 in disaster recovery.

Links:

<http://www.dhSES.ny.gov/oem/mitigation/documents/mitigations-value-to-society.pdf>

The two-volume NIBS MMC study report is available for free download at:

<http://www.nibs.org/index.php/mmc/projects/nhms>

Cost Impact: Will increase the cost of construction

This code change proposal will increase the cost of construction of some building types.

G 152-15 : 508.4.4.2 (New)-
LOVELL5291

G 153-15

508.4.5 (New)

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

2015 International Building Code

Add new text as follows:

508.4.5 Exterior walls. Portions of exterior walls of the same building, or multiple buildings on the same lot that are considered as one building in accordance with Exception 1 of Section 705.3 and face occupancies requiring not more than a 2-hour separation in accordance with Table 508.4 shall be separated by not less than 10 feet (3048 mm), measured at right angles, from the surfaces of the facing exterior walls. For occupancies requiring a 3-hour or greater separation, the separation distance shall be not less than 15 feet (4572 mm).

Exception: Walls and openings protected in accordance with Section 705 based on an assumed lot line between them. The use of the assumed lot line shall only apply to those portions of exterior walls that have a fire separation distance less than the required minimum distance.

Reason: Per Section 508.4.4, occupancies that are adjacent to each other within a building require separation per Table 508.4. However, where exterior walls of the same building face each other and the occupancy groups within those portions of the building would require separation, then some kind of protection should be provided. As it currently stands, there are no restrictions on the distance, fire-resistance rating, or opening protection between facing exterior walls of occupancy groups that require separation. This proposal follows similar separation requirement for exterior exit stairways and ramps per Section 1027.5, which requires a 10-foot fire separation distance between the exterior exit stairway or ramp and other portions of the building. Thus, this distance has the equivalency of a maximum 2-hour fire-resistance rating, since there is not a limitation on the number of stories connected by the exterior exit stairway or ramp. Similar protection requirements based on a 10-foot fire separation distance are found in Section 1021.4 for egress balconies and Section 1028.4.2 for egress courts.

Since some occupancies require a 3- or 4-hour occupancy separation, a greater distance is specified.

The exception allows the use of an imaginary lot line to determine exterior wall and opening protection for only those portions of the exterior wall that have a fire separation distance less than the required minimums. This exception is considered since the imaginary lot line method can be applied to any building, regardless of construction type or the occupancy groups within.

Cost Impact: Will increase the cost of construction

This will have a minor increase in construction cost when applied to building designs that would have previously been acceptable with narrower fire separation distances. The cost increase can be avoided through design by ensuring the minimum fire separation distances specified are maintained between the opposing walls. Some jurisdictions have been enforcing the imaginary lot line for separation of exterior walls, whether they are the same building or not, when the occupancies of the opposing portions of the building require separation and the separated occupancies method is used. In these locations, there would be no cost impact.

G 153-15 : 508.4.5 (New)-GEREN5782

G 154-15

TABLE 509

Proponent: Jeffrey Betz, representing AT&T (jbetz@att.com)

2015 International Building Code

Revise as follows:

**TABLE 509
INCIDENTAL USES**

ROOM OR AREA	SEPARATION AND/OR PROTECTION
Furnace room where any piece of equipment is over 400,000 Btu per hour input	1 hour or provide automatic sprinkler system
Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower	1 hour or provide automatic sprinkler system
Refrigerant machinery room	1 hour or provide automatic sprinkler system
Hydrogen fuel gas rooms, not classified as Group H	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.
Incinerator rooms	2 hours and provide automatic sprinkler system
Paint shops, not classified as <i>Group H</i> , located in occupancies other than Group F	2 hours; or 1 hour and provide automatic sprinkler system
In Group E occupancies, laboratories and vocational shops not classified as Group H	1 hour or provide automatic sprinkler system
In Group I-2 occupancies, laboratories not classified as Group H	1 hour and provide automatic sprinkler system
In ambulatory care facilities, laboratories not classified as Group H	1 hour and provide automatic sprinkler system
Laundry rooms over 100 square feet	1 hour or provide automatic sprinkler system
In Group I-2, laundry rooms over 100 square feet	1 hour
Group I-3 cells and Group I-2 patient rooms equipped with padded surfaces	1 hour
In Group I-2, physical plant maintenance shops	1 hour
In ambulatory care facilities or Group I-2 occupancies, waste and linen collection rooms with containers that have an aggregate volume of 10 cubic feet or greater	1 hour
In other than ambulatory care facilities and Group I-2 occupancies, waste and linen collection rooms over 100 square feet	1 hour or provide automatic sprinkler system
In ambulatory care facilities or Group I-2 occupancies, storage rooms greater than 100 square feet	1 hour

Stationary storage battery systems <u>in accordance with Section 609 of the <i>International Fire Code</i> and having a liquid electrolyte capacity of more than 50 gallons for flooded lead-acid, nickel-cadmium or VRLA, or more than 1,000 pounds for lithium-ion and lithium metal polymer</u> used for facility standby power, emergency power or uninterruptable power supplies	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.
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For SI: 1 square foot = 0.0929 m², 1 pound per square inch (psi) = 6.9 kPa, 1 British thermal unit (Btu) per hour = 0.293 watts, 1 horsepower = 746 watts, 1 gallon = 3.785 L, 1 cubic foot = 0.0283 m³.

Reason: This proposal links International Building Code Table 509 to the specific definitions, scope and section of the International Fire Code related to Stationary Storage Battery Systems. By using the definition and terms in the International Fire Code section related to stationary storage battery systems this provides the ability to modify the various aspects of these systems in one code within one code cycle process. As new technology emerges and changes or additional types of batteries are added a change in the fire code requirement as to types of batteries and quantities will be automatically addressed for Table 509 of the International Building Code.

Bibliography: International Fire Code and Commentary, 2012, Page 6-32 through 6-35

Cost Impact: Will not increase the cost of construction

This proposal aligns the application of the International Building Code (IBC) and International Fire Code (IFC) regarding stationary storage battery systems. By referring the application criteria (scope) to the International Fire Code for the additional and deletion of battery types and quantities in one source document and under one code cycle.

G 154-15 : T509 -BETZ4714

G 155-15

TABLE 509

Proponent: Jeffrey Betz, AT&T, representing AT&T (jbetz@att.com)

2015 International Building Code

Revise as follows:

**TABLE 509
INCIDENTAL USES**

ROOM OR AREA	SEPARATION AND/OR PROTECTION
Furnace room where any piece of equipment is over 400,000 Btu per hour input	1 hour or provide automatic sprinkler system
Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower	1 hour or provide automatic sprinkler system
Refrigerant machinery room	1 hour or provide automatic sprinkler system
Hydrogen fuel gas rooms, not classified as Group H	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.
Incinerator rooms	2 hours and provide automatic sprinkler system
Paint shops, not classified as Group H, located in occupancies other than Group F	2 hours; or 1 hour and provide automatic sprinkler system
In Group E occupancies, laboratories and vocational shops not classified as Group H	1 hour or provide automatic sprinkler system
In Group I-2 occupancies, laboratories not classified as Group H	1 hour and provide automatic sprinkler system
In ambulatory care facilities, laboratories not classified as Group H	1 hour and provide automatic sprinkler system
Laundry rooms over 100 square feet	1 hour or provide automatic sprinkler system
In Group I-2, laundry rooms over 100 square feet	1 hour
Group I-3 cells and Group I-2 patient rooms equipped with padded surfaces	1 hour
In Group I-2, physical plant maintenance shops	1 hour
In ambulatory care facilities or Group I-2 occupancies, waste and linen collection rooms with containers that have an aggregate volume of 10 cubic feet or greater	1 hour
In other than ambulatory care facilities and Group I-2 occupancies, waste and linen collection rooms over 100 square feet	1 hour or provide automatic sprinkler system
In ambulatory care facilities or Group I-2 occupancies, storage rooms greater than 100 square feet	1 hour

<p>Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons for flooded lead-acid, nickel cadmium or VRLA, or more than 1,000 pounds for lithium-ion and lithium metal polymer used for facility standby power, emergency power or uninterruptable power supplies. <u>Stationary storage battery systems shall be located within a room or space separated as required by this Table. Stationary storage battery systems are permitted to be located in the same room as equipment they support and power additional equipment in other areas of the building as designed.</u></p>	<p>1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.</p>
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For SI: 1 square foot = 0.0929 m², 1 pound per square inch (psi) = 6.9 kPa, 1 British thermal unit (Btu) per hour = 0.293 watts, 1 horsepower = 746 watts, 1 gallon = 3.785 L, 1 cubic foot = 0.0283 m³.

Reason: This proposal aligns the basic criteria of the International Building and International Fire Codes. The intent of the International Building Code is to provide a fire-resistance-rated separation from the remainder of the building. The International Fire Code (IFC) section 608 defines the requirements for STATIONARY STORAGE BATTERY SYSTEMS and directs the reader to section 608.4 stating "Room design and construction. Enclosure of stationary battery systems shall comply with International Building Code. Battery systems shall be allowed to be in the same room with the equipment they support." The International Fire Code Commentary for this section reads "This section requires that battery rooms meet the basic construction requirements of the IBC. Section and Table 509 of the IBC treat rooms housing stationary storage battery systems as incidental use areas based on the electrolyte capacity of the system. In that case, though no different occupancy group is assigned to it, the battery rooms fire-resistance rating must be 1 or 2 hours, depending on the occupancy group or groups from which it must be separated in the building in which it is located. The construction of the battery room must also comply with the material requirements of the IBC for the type of construction required for the building. Additionally, there is no requirement for separating the equipment that the battery system supports from the battery system itself". (Footnote 2012 International Fire Code and Commentary 608.4) This ongoing operational use is not addressed in the International Building Code and leads to confusion and misapplication which can be interpreted as a conflict between the International Building Code and International Fire Code. Many Authorities Having Jurisdiction use the International Building Code as the controlling document when a perceived conflict is identified. Thus, the current allowance for commingling of batteries and equipment may not be understood and consequently is therefore occasionally not permitted by Building Officials. Stationary storage battery systems housed in either a telecommunications or information technology space are currently separated from the remaining spaces by the design requirement of these activities with a minimum of a 1 hour fire barrier. Both the telecommunications and information technology industries have collocated battery systems with equipment installations for many years without serious risk to the occupancy or occupants. The equipment rooms utilized in these industries are accessible only to authorize personnel. Battery systems for non-dedicated equipment spaces are required to be housed in a non-combustible, locked cabinet or other enclosure to prevent access to unauthorized personnel as directed within the International Fire Code. Stationary storage battery systems in occupied work centers are separately addressed in the International Fire Code. Thus the intention to separate the stationary battery systems is met by the requirements of Table 509. The prohibition of utilizing the power produced by a stationary battery system is contradictory to the intent of the separation environment. Code required fire barrier are not deleted or modified by this proposal. Fire barriers continue to protect the general public when the storage battery power supplied equipment spaces are accessible only to authorized personnel and meet the requirements of Table 509. This code change proposal also incorporates modification to eliminate restricting the stationary storage battery systems power production only to the room that the batteries may be contained. The code currently inhibits the long term industry practice of utilizing stationary storage battery systems contained within existing equipment spaces to power similar equipment housed in other fire barrier separated equipment spaces within the building. Current technology and deployment incorporates distributed integrated power within the design of signal processing and server applications and this proposal supports industry design.

Bibliography: International Building Code and Commentary ICC 2012 page 5-43 and 44
International Fire Code and Commentary ICC 2012 6-32 through 6-35

Cost Impact: Will not increase the cost of construction

Clarifies current requirements found in the International Fire Code. Reduces cost and resources for AHJ and applicant by directly defining the application of Table 509.

G 155-15 : T509-BETZ5050

G 156-15

TABLE 509

Proponent: Randall McCarver, representing CenturyLink and Verizon (randall.mccarver@ericsson.com)

2015 International Building Code

Revise as follows:

**TABLE 509
INCIDENTAL USES**

ROOM OR AREA	SEPARATION AND/OR PROTECTION
Furnace room where any piece of equipment is over 400,000 Btu per hour input	1 hour or provide automatic sprinkler system
Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower	1 hour or provide automatic sprinkler system
Refrigerant machinery room	1 hour or provide automatic sprinkler system
Hydrogen fuel gas rooms, not classified as Group H	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.
Incinerator rooms	2 hours and provide automatic sprinkler system
Paint shops, not classified as Group H, located in occupancies other than Group F	2 hours; or 1 hour and provide automatic sprinkler system
In Group E occupancies, laboratories and vocational shops not classified as Group H	1 hour or provide automatic sprinkler system
In Group I-2 occupancies, laboratories not classified as Group H	1 hour and provide automatic sprinkler system
In ambulatory care facilities, laboratories not classified as Group H	1 hour and provide automatic sprinkler system
Laundry rooms over 100 square feet	1 hour or provide automatic sprinkler system
In Group I-2, laundry rooms over 100 square feet	1 hour
Group I-3 cells and Group I-2 patient rooms equipped with padded surfaces	1 hour
In Group I-2, physical plant maintenance shops	1 hour
In ambulatory care facilities or Group I-2 occupancies, waste and linen collection rooms with containers that have an aggregate volume of 10 cubic feet or greater	1 hour
In other than ambulatory care facilities and Group I-2 occupancies, waste and linen collection rooms over 100 square feet	1 hour or provide automatic sprinkler system
In ambulatory care facilities or Group I-2 occupancies, storage rooms greater than 100 square feet	1 hour

<p><u>A stationary</u>Stationary storage battery <u>system</u>systems having a liquid electrolyte capacity of more than 50 gallons for flooded lead-acid, nickel cadmium or VRLA, or more than 1,000 pounds for lithium-ion and lithium metal polymer used for facility standby power, emergency power or uninterruptable power supplies. <u>Battery systems shall be allowed to be in the same room with the equipment they support.</u></p>	<p>1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.</p>
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For SI: 1 square foot = 0.0929 m², 1 pound per square inch (psi) = 6.9 kPa, 1 British thermal unit (Btu) per hour = 0.293 watts, 1 horsepower = 746 watts, 1 gallon = 3.785 L, 1 cubic foot = 0.0283 m³.

Reason: In locations where a battery system exceeding the limits in Table 509 is considered an incidental occupancy, there is a conflict with provisions of the IFC. IFC 608.4 specifically permits battery systems to be in the same room with the equipment they support. If a fire separation is required, it should be allowed to encompass the equipment served, also. This change makes it clear that the required separation can encompass that equipment. The text was revised to indicate that the limits apply to individual battery systems, not an aggregate of all battery systems in the incidental accessory occupancy. Any increased hazard from battery systems will occur in a single cell, not in the aggregate of all systems in an occupancy.

Cost Impact: Will not increase the cost of construction

This change provides clarification to ensure consistency with the IFC. No change in construction is required.

G 156-15 : T509-MCCARVER5046

G 157-15

TABLE 509, 509.5 (New), 716.5

Proponent: Jay Wallace, The Boeing Company, representing The Boeing Company (jay.s.wallace@boeing.com)

2015 International Building Code

Revise as follows:

**TABLE 509
INCIDENTAL USES**

ROOM OR AREA	<u>PROVIDE SEPARATION AND/OR PROTECTION</u>
Furnace room where any piece of equipment is over 400,000 Btu per hour input	1 hour or provide automatic sprinkler system ^a
Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower	1 hour or provide automatic sprinkler system ^a
Refrigerant machinery room	1 hour or provide automatic sprinkler system ^a
Hydrogen fuel gas rooms, not classified as Group H	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies
Incinerator rooms	2 hours and provide automatic sprinkler system ^a
Paint shops, not classified as Group H, located in occupancies other than Group F	2 hours; or 1 hour and provide automatic sprinkler system ^a
In Group E occupancies, laboratories and vocational shops not classified as Group H	1 hour or provide automatic sprinkler system ^a
In Group I-2 occupancies, laboratories not classified as Group H	1 hour and provide automatic sprinkler system ^a
In ambulatory care facilities, laboratories not classified as Group H	1 hour and provide automatic sprinkler system ^a
Laundry rooms over 100 square feet	1 hour or provide automatic sprinkler system ^a
In Group I-2, laundry rooms over 100 square feet	1 hour
Group I-3 cells and Group I-2 patient rooms equipped with padded surfaces	1 hour
In Group I-2, physical plant maintenance shops	1 hour
In ambulatory care facilities or Group I-2 occupancies, waste and linen collection rooms with containers that have an aggregate volume of 10 cubic feet or greater	1 hour
In other than ambulatory care facilities and Group I-2 occupancies, waste and linen collection rooms over 100 square feet	1 hour or provide automatic sprinkler system ^a
In ambulatory care facilities or Group I-2 occupancies, storage rooms greater than 100 square feet	1 hour

Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons for flooded lead-acid, nickel cadmium or VRLA, or more than 1,000 pounds for lithium-ion and lithium metal polymer used for facility standby power, emergency power or uninterruptable power supplies	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.
<u>Electrical dry-type transformer rated over 112 ½ kVA</u> <u>Exception: Where transformers with Class 155 or higher insulation systems are separated from combustible material by a fire-resistant, heat-insulating barrier or by not less than 6 feet horizontally and 12 feet vertically or completely enclosed except for ventilating openings.</u>	<u>1 hour</u> ^d
<u>Electrical dry-type transformer rated over 35,000 volts.</u>	<u>1 hour and automatic sprinkler system</u> ^{a b d}
<u>Electrical oil-insulated transformer of any rating.</u>	<u>1-hour and automatic sprinkler system and oil containment serving all if multiple transformers; sized to contain the volume of oil in the largest unit</u> ^{a b c d}

a. Automatic sprinkler system in accordance with Section 903.3.1.1.

b. An alternative automatic fire extinguishing system provided in lieu of an automatic sprinkler system in accordance with Section 903.1.1.

c. See the National Electric Code (NFPA 70) for detailed construction requirements and exceptions regarding oil and other liquid insulated transformers.

d. See additional requirements in Section 509.5.

For SI: 1 square foot = 0.0929 m², 1 pound per square inch (psi) = 6.9 kPa, 1 British thermal unit (Btu) per hour = 0.293 watts, 1 horsepower = 746 watts, 1 gallon = 3.785 L, 1 cubic foot = 0.0283 m³.

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Add new text as follows:

509.5 Electrical room construction. Rooms containing transformers shall be in accordance with Section 1010.1.10 and with this section.

1. Where Table 509 only specifies separation without protection for rooms containing electrical transformers, the room shall be in accordance with the following:

1.1. Ventilation openings in surrounding building exterior walls or roof/ceiling construction shall be provided with an open area of not less than 3 square inches for each kVA of transformer capacity or not less than 1 square foot, whichever is greater. Ventilation openings shall be in accordance with Table 716.5 and protected with screens, grating or louvers. The ventilation openings shall be located in accordance with one of the following:

1.1.1. Provide 100 percent of ventilation openings near the ceiling of the electrical room; or

1.1.2. Provide half of the ventilation openings at the floor and the balance of the openings near the ceiling of the electrical room.

1.2. Electrical rooms shall be provided at the exterior of the building to allow natural ventilation in accordance with Item 1, or shall be provided with mechanical ventilation located and sized to effectively control the transformer full load losses and limit the temperature rise in accordance with the transformer rating.

1.3. Where the room is located at slab on grade condition, a concrete slab not less than 4 inches thick shall be provided.

1.4. Doors from the electrical room shall swing in the direction of egress travel away from the electrical room. Doors shall be self-closing to a latched and locked position and shall be provided with panic hardware.

1.5. Pipes and ducts, other than those that service the electrical room, shall not pass through an electrical room.

2. Where Table 509 specifies both separation and protection for rooms containing electrical transformers, the room shall be in accordance with Item 1 and the following:

2.1. the room shall be separated and protected as specified in Table 509 or it shall be located in an enclosure constructed of concrete or similar materials providing not less than three hour fire-resistance-rated construction with opening protectives provided in accordance with Table 716.5.

TABLE 716.5
OPENING FIRE PROTECTION ASSEMBLIES, RATINGS AND MARKINGS

TYPE OF ASSEMBLY	REQUIRED WALL ASSEMBLY RATING (hours)	MINIMUM FIRE DOOR AND FIRE SHUTTER ASSEMBLY RATING (hours)	DOOR VISION PANEL SIZE ^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 for shafts,exit access stairways, exit access ramps, interior exit stairways, and interior exit ramps; <u>electrical room enclosure</u> and exit passageway walls	1	1	100 sq. in. ^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	$3/4$	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.

- 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.
- Fire-resistance-rated glazing tested to ASTM E 119 in accordance with Section 716.2 shall be permitted, in the maximum size tested.
- 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.
- Under the column heading "Fire-rated glazing marking door vision panel," W refers to the fire-resistance rating of the glazing, not the frame.
- See Section 716.5.8.1.2.1.

Reason: Construction requirements for electrical room floors, walls, ceilings, openings, hardware etc are contained in the National Electrical Code (NFPA 70). The terms used are not the same as those in the IBC. The differences can cause confusion for the design professional which can result in costly mistakes or unnecessary features. This proposal brings the building related requirements in the NEC into the IBC in terms consistent with the rest of the building element nomenclature to add clarity and consistency. While editing Table 509 the term "provide" was deleted from its positions before "automatic sprinkler system" and inserted at the top of the table so that all enclosures and protection would be provided as intended by the table.

For the automatic sprinkler system requirement, a footnote was added for consistency with the rest of the IBC regarding automatic sprinkler systems.

Cost Impact: Will not increase the cost of construction

There is no intended change in construction requirements. Hopefully this proposal will clarify some confusing language and reduce costs.

G 157-15 : T509-WALLACE5085

G 158-15

509.3

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

2015 International Building Code

Delete without substitution:

~~**509.3 Area limitations.** Incidental uses shall not occupy more than 10 percent of the *building area* of the *story* in which they are located.~~

Reason: This section is unenforceable. Many incidental uses exceed 10% of the floor area of the story they are located in. In some cases the entire building can be an incidental use. For example, a heating plant for a hospital will have boilers that exceed the limits of Table 509, but are located in a single building. Another example is the location of laboratories and vocational classrooms in a high school. It is very common to have these areas exceed 10% of the area of the story that they are located in. The interpretation from ICC is to classify these areas as a different occupancy. This is contrary to the requirements of Section 509.2. It states "Incidental uses shall not be individually classified in accordance with Section 302.1". If you do classify the chemistry laboratory as an occupancy, it would be classified as a Group E occupancy (assuming the amount of chemicals do not exceed the MAQ's in Section 307.1). Therefore, if the lab exceeds 10% of the story area, there would be no separation between the lab and an adjacent classroom. However, if it was less than 10%, a separation would be required. This doesn't make sense. By deleting the area limitation, this problem is resolved and a separation would be required regardless of the size.

Bibliography: None

Cost Impact: Will not increase the cost of construction

There is no cost impact from this change. This change is a clarification of the existing language back to the way it was in the 2006 IBC.

G 158-15 : 509.3-THOMAS3647

G 159-15

TABLE 509, 509.1, 509.2, 509.3, 509.4, 509.4.1, 509.4.2, 509.4.2.1

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

2015 International Building Code

Revise as follows:

~~509.4.2.1~~ INCIDENTAL USES

~~509.4.2.1~~ **General.** Incidental uses located within single occupancy or mixed occupancy buildings shall comply with the provisions of this section. Incidental uses are ancillary functions associated with a given occupancy that generally pose a greater level of risk to that occupancy and are limited to those uses listed in Table ~~509.4.2.1~~.

Exception: Incidental uses within and serving a *dwelling unit* are not required to comply with this section.

**TABLE ~~509.4.2.1~~
INCIDENTAL USES**

ROOM OR AREA	SEPARATION AND/OR PROTECTION
Furnace room where any piece of equipment is over 400,000 Btu per hour input	1 hour or provide automatic sprinkler system
Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower	1 hour or provide automatic sprinkler system
Refrigerant machinery room	1 hour or provide automatic sprinkler system
Hydrogen fuel gas rooms, not classified as Group H	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.
Incinerator rooms	2 hours and provide automatic sprinkler system
Paint shops, not classified as Group H, located in occupancies other than Group F	2 hours; or 1 hour and provide automatic sprinkler system
In Group E occupancies, laboratories and vocational shops not classified as Group H	1 hour or provide automatic sprinkler system
In Group I-2 occupancies, laboratories not classified as Group H	1 hour and provide automatic sprinkler system
In ambulatory care facilities, laboratories not classified as Group H	1 hour and provide automatic sprinkler system
Laundry rooms over 100 square feet	1 hour or provide automatic sprinkler system
In Group I-2, laundry rooms over 100 square feet	1 hour
Group I-3 cells and Group I-2 patient rooms equipped with padded surfaces	1 hour
In Group I-2, physical plant maintenance shops	1 hour
In ambulatory care facilities or Group I-2 occupancies, waste and linen collection rooms with containers that have an aggregate volume of 10 cubic feet or greater	1 hour
In other than ambulatory care facilities and Group I-2 occupancies, waste and linen collection rooms over 100 square feet	1 hour or provide automatic sprinkler system

In ambulatory care facilities or Group I-2 occupancies, storage rooms greater than 100 square feet	1 hour
Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons for flooded lead-acid, nickel cadmium or VRLA, or more than 1,000 pounds for lithium-ion and lithium metal polymer used for facility standby power, emergency power or uninterruptable power supplies	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.

For SI: 1 square foot = 0.0929 m², 1 pound per square inch (psi) = 6.9 kPa, 1 British thermal unit (Btu) per hour = 0.293 watts, 1 horsepower = 746 watts, 1 gallon = 3.785 L, 1 cubic foot = 0.0283 m³.

509.2-427.2 Occupancy classification. Incidental uses shall not be individually classified in accordance with Section 302.1. Incidental uses shall be included in the building occupancies within which they are located.

509.3-427.3 Area limitations. Incidental uses shall not occupy more than 10 percent of the *building area* of the *story* in which they are located.

509.4-427.4 Separation and protection. The incidental uses listed in Table 509.427.1 shall be separated from the remainder of the building or equipped with an *automatic sprinkler system*, or both, in accordance with the provisions of that table.

509.4.1-427.4.1 Separation. Where Table 509.427.1 specifies a fire-resistance-rated separation, the incidental uses shall be separated from the remainder of the *building* by a *fire barrier* constructed in accordance with Section 707 or a *horizontal assembly* constructed in accordance with Section 711, or both. Construction supporting 1-hour *fire barriers* or *horizontal assemblies* used for incidental use separations in buildings of Type IIB, IIIB and VB construction is not required to be fire-resistance rated unless required by other sections of this code.

509.4.2-427.4.2 Protection. Where Table 509.427.1 permits an *automatic sprinkler system* without a *fire barrier*, the incidental uses shall be separated from the remainder of the building by construction capable of resisting the passage of smoke. The walls shall extend from the top of the foundation or floor assembly below to the underside of the ceiling that is a component of a fire-resistance-rated floor assembly or roof assembly above or to the underside of the floor or roof sheathing, deck or slab above. Doors shall be self- or automatic-closing upon detection of smoke in accordance with Section 716.5.9.3. Doors shall not have air transfer openings and shall not be undercut in excess of the clearance permitted in accordance with NFPA 80. Walls surrounding the incidental use shall not have air transfer openings unless provided with smoke dampers in accordance with Section 710.8.

509.4.2.1-427.4.2.1 Protection limitation. Where an automatic sprinkler system is provided in accordance with Table 509.427.1, only the space occupied by the incidental use need be equipped with such a system.

Reason: This change is intended to relocate the incidental use requirements to Chapter 4 of the IBC. Incidental uses are not occupancies. Therefore, they do not belong in the occupancy chapter. They are areas in a building that have a higher level of risk and are separated from the rest of the building. By placing the requirements in Chapter 4, they are then considered special uses and will eliminate the confusion of whether they are occupancies or not. We believe that this will provide better clarification for these areas in a building that have special requirements. The title of Chapter 4 is Special Detailed Requirements Based on Use and Occupancy. The location of these requirements is more appropriate in this chapter.

Cost Impact: Will not increase the cost of construction

This change is a relocation of the requirements. There is no technical change that will affect the cost of construction.

G 160-15

510.2

Proponent: Marshall Klein, representing NMHC

2015 International Building Code

Revise as follows:

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

1. The buildings are separated with a *horizontal assembly* having a *fire-resistance rating* of not less than 3 hours. The horizontal assembly shall not include vertical offsets except where the offset assemblies and their supporting structures have a fire-resistance rating of not less than 3 hours..
2. The building below the *horizontal assembly* is of Type IA construction.
3. *Shaft, stairway, ramp* and escalator enclosures through the *horizontal assembly* shall have not less than a 2-hour *fire-resistance rating* with opening protectives in accordance with Section 716.5.
Exception: Where the enclosure walls below the *horizontal assembly* have not less than a 3-hour *fire-resistance rating* with opening protectives in accordance with Section 716.5, the enclosure walls extending above the *horizontal assembly* shall be permitted to have a 1-hour *fire-resistance rating*, provided:
 1. The building above the *horizontal assembly* is not required to be of Type I construction;
 2. The enclosure connects fewer than four *stories*; and
 3. The enclosure opening protectives above the *horizontal assembly* have a *fire protection rating* of not less than 1 hour.
4. The building or buildings above the *horizontal assembly* shall be permitted to have multiple Group A occupancy uses, each with an *occupant load* of less 300, or Group B, M, R or S occupancies.
5. The building below the *horizontal assembly* shall be protected throughout by an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, and shall be permitted to be any occupancy allowed by this code except Group H.
6. The maximum *building height* in feet (mm) shall not exceed the limits set forth in Section 504.3 for the building having the smaller allowable height as measured from the *grade plane*.

Reason: It is very common for projects built under the provisions of Section 510.2 to include vertical offsets to accommodate elevation changes for a particular site or different ceiling heights within a story. Currently, the code provides no guidance on how to deal with these vertical offset assemblies, and the designer and code official are left to handle them as alternative methods or modifications in accordance with Chapter 1. This change will provide appropriate regulations for ensuring that any vertical offset maintains a proper and continuous fire rating for both the horizontal and vertical portions of the separation, plus it ensures that the supporting structure for a vertical offset has an equivalent fire-resistance rating.

It is worth noting that the code deals with this issue in reverse for firewalls by permitting horizontal offsets in those vertical assemblies, as described in Section 706.1 of the 2012 IBC Commentary, which states "...offsetting two vertical sections of firewalls is permissible as long as the required fire resistance rating and structural stability are maintained."

Cost Impact: Will not increase the cost of construction

There should be no impact on the cost of construction because the intent of this proposal is simply to state how the current provisions should be applied. However, there will be a decrease in administrative costs for cases where an alternative method or modification would have previously been necessary as part of the compliance path.

G 160-15 : 510.2-KLEIN4223

G 161-15

510.2

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

2015 International Building Code

Revise as follows:

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

1. The buildings are separated with a *horizontal assembly* having a *fire-resistance rating* of not less than 3 hours. The horizontal assembly shall be of Type 1 construction.
2. The building below the *horizontal assembly* is of Type IA construction.
3. *Shaft, stairway, ramp* and escalator enclosures through the *horizontal assembly* shall have not less than a 2-hour *fire-resistance rating* with opening protectives in accordance with Section 716.5.
Exception: Where the enclosure walls below the *horizontal assembly* have not less than a 3-hour *fire-resistance rating* with opening protectives in accordance with Section 716.5, the enclosure walls extending above the *horizontal assembly* shall be permitted to have a 1-hour *fire-resistance rating*, provided:
 1. The building above the *horizontal assembly* is not required to be of Type I construction;
 2. The enclosure connects fewer than four *stories*; and
 3. The enclosure opening protectives above the *horizontal assembly* have a *fire protection rating* of not less than 1 hour.
4. The building or buildings above the *horizontal assembly* shall be permitted to have multiple Group A occupancy uses, each with an *occupant load* of less 300, or Group B, M, R or S occupancies.
5. The building below the *horizontal assembly* shall be protected throughout by an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, and shall be permitted to be any occupancy allowed by this code except Group H.
6. The maximum *building height* in feet (mm) shall not exceed the limits set forth in Section 504.3 for the building having the smaller allowable height as measured from the *grade plane*.

Reason: Existing language is unclear and can be interpreted to only require the greater type of construction below the 3 hour separation. The addition of the sentence to Item 1 makes it clear that the 3 hour horizontal assembly can not be constructed out of a type of construction that is different than the lower building.

Cost Impact: Will not increase the cost of construction

This code change does not create a new requirement. It clarifies existing code language to prevent misinterpretation of the code

G 161-15 : 510.2-MAIEL5410

Proponent: Mark Nowak, representing Steel Framing Alliance (mnowak@steelframing.org)

2015 International Building Code

Revise as follows:

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

1. The buildings are separated with a *horizontal assembly* having a *fire-resistance rating* of not less than 3 hours.
2. The building below the *horizontal assembly* is of Type IA construction.
3. *Shaft, stairway, ramp* and escalator enclosures through the *horizontal assembly* shall have not less than a 2-hour *fire-resistance rating* with opening protectives in accordance with Section 716.5.
Exception: Where the enclosure walls below the *horizontal assembly* have not less than a 3-hour *fire-resistance rating* with opening protectives in accordance with Section 716.5, the enclosure walls extending above the *horizontal assembly* shall be permitted to have a 1-hour *fire-resistance rating*, provided:
 1. The building above the *horizontal assembly* is not required to be of Type I construction;
 2. The enclosure connects fewer than four *stories*; and
 3. The enclosure opening protectives above the *horizontal assembly* have a *fire protection rating* of not less than 1 hour.
4. The building or buildings above the *horizontal assembly* shall be permitted to have multiple Group A occupancy uses, each with an *occupant load* of less 300, or Group B, M, R or S occupancies.
5. The building below the *horizontal assembly* shall be protected throughout by an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, and shall be permitted to be any occupancy allowed by this code except Group H.
6. The maximum *building height* in feet (mm) shall not exceed the limits set forth in Section 504.3 for the building having the smaller allowable height as measured from the *grade plane*.
7. Type V buildings with combustible structural elements above the horizontal separation shall be separated from lot lines and buildings on the same lot by not less than 50 feet.

Reason: This proposal will correct an inconsistency in the code that currently permits a shorter separation distance to adjacent buildings or lot lines for buildings with combustible structural elements versus similar sized Type IIA noncombustible buildings. The code currently requires Type IIA residential buildings, constructed with non-combustible structural elements, to be separated by a minimum of 50 feet in Section 510.6 but no such separation is required for combustible Type V construction in Section 510.2 despite the higher risk with combustible construction.

More builders and designers are using Section 510 of the code to extend the allowable height and stories of residential buildings that use combustible structural framing.

Marketing efforts such as WoodWorks, a program with support of the major wood and timber associations, government agencies, and other partners, continue to promote the use of combustible framing in mid-rise residential and other structures through Section 510 of the code. It is questionable that the code ever intended combustible framing to be used at heights now being constructed -- the allowable heights have crept upward with allowances for sprinkler systems added since the requirements in Section 510 first entered buildings codes.

Fires from mid-rise Type V buildings with combustible structural elements are epidemic and catastrophic yet there is little protection required of them relative to their risk versus other types of construction. This proposal will correct this deficiency in the code to better protect nearby buildings and provide firefighters clearance between buildings to address fires during and after construction. The 50 foot separation is a minimum requirement that will ensure at least the same level of protection for buildings with combustible structures as for similar Type IIA buildings when additional height is obtained through use of the special provisions in Section 510 of the code. The 50 foot distance in this proposal extends the precedent set in the code for buildings with lower risk (Type IIA) of similar size to the higher-risk combustible framing used in Type V buildings under Section 510 of the code.

In addition to providing a separation for finished buildings, the proposed 50 foot distance will also improve the ability of firefighters to address fires during construction. In just the past few years, a significant number of major fires throughout the United States in buildings under construction have occurred in four story and higher buildings that have used combustible framing members. During the construction phase, these buildings are extremely vulnerable due to the lack of operational active and passive fire resistance. These fires have damaged nearby properties, required major street closures including interstates, and occupied fire fighting resources to the extent that other areas were left under-protected for extended periods. As recently as December of 2014, a major fire in Los Angeles with five stories of wood framing over a two story concrete podium not only resulted in millions of dollars in damage to the building under construction, but also damaged adjacent buildings. The seven-story apartment building known as the DaVinci was a complete loss after the fire that was fueled by the five stories of wood frame construction. More than 250 firefighters were dispatched to the scene. Flames were visible for miles and the structure's wooden frame forced the closure of northbound Harbor (110) Freeway. Computers and cubicles melted in neighboring buildings. Hundreds of thick windows cracked as well. This is typical of the risk that these buildings pose to themselves and surrounding properties. Some examples of other larger recent fires that illustrate the risk of combustible framing in mid-rise buildings include:

1. Monroe Apartments, Portland, OR August 8, 2013
2. Student Apartments, Kingston, Ontario, CAN December 17, 2013
3. 550 East and 500 South, Salt Lake City, UT February 9, 2014
4. Commercial Building, Roxbury, MA March 3, 2014
5. Mission Bay Project, San Francisco, CA March 11, 2014
6. Axis Apartments, Houston, TX, March 25, 2014
7. Beacon Street, Boston, MA, March 27, 2014
8. Gables Upper Rock, Rockville, MD, April 1, 2014
9. SE Tech Center Drive, Vancouver, WA, June 19, 2014
10. Victoria Commons, Kitchener, Ontario, CAN, July 22, 2014
11. Apollo Way, Madison, WI, August 8, 2014

Cost Impact: Will increase the cost of construction

This proposal will impact the cost of construction for some buildings on small lots or in urban or other high density areas where the separation distance is especially important for increased safety. Depending on the size of the lot and proposed building, some buildings may not be able to meet the separation distance and will need to be reduced in height or number of stories. In some cases, non-combustible construction could be used to protect the building if the setback cannot be achieved. Any added costs in these few buildings can be offset by the added safety and lower insurance costs throughout construction and the life of the structure. Building with reasonable separation distances will also be offset by the avoided costs of rebuilding after fires and avoidance of damage to nearby properties and occupants.

G 163-15

510.2, TABLE 510.2 (New)

Proponent: Dennis Richardson, representing American Wood Council (drichardson@awc.org)

2015 International Building Code

Revise as follows:

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

1. The buildings are separated with a *horizontal assembly* having a *fire-resistance rating* of not less than 3 hours.
2. The building below the *horizontal assembly* is of Type IA construction or Type IV construction protected as required in Table 510.2.
3. *Shaft, stairway, ramp* and escalator enclosures through the *horizontal assembly* shall have not less than a 2-hour *fire-resistance rating* with opening protectives in accordance with Section 716.5.
Exception: Where the enclosure walls below the *horizontal assembly* have not less than a 3-hour *fire-resistance rating* with opening protectives in accordance with Section 716.5, the enclosure walls extending above the *horizontal assembly* shall be permitted to have a 1-hour *fire-resistance rating*, provided:
 1. The building above the *horizontal assembly* is not required to be of Type I construction;
 2. The enclosure connects fewer than four *stories*; and
 3. The enclosure opening protectives above the *horizontal assembly* have a *fire protection rating* of not less than 1 hour.
4. The building or buildings above the *horizontal assembly* shall be permitted to have multiple Group A occupancy uses, each with an *occupant load* of less 300, or Group B, M, R or S occupancies.
5. The building below the *horizontal assembly* shall be protected throughout by an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, and shall be permitted to be any occupancy allowed by this code except Group H.
6. The maximum *building height* in feet (mm) shall not exceed the limits set forth in Section 504.3 for the building having the smaller allowable height as measured from the *grade plane*.

Add new text as follows:

TABLE 510.2
TYPE IV BUILDING BELOW. PROTECTION CRITERIA

	Required layers of 5/8 inch type X gypsum board for protection based on Occupancy or Fire Area Occupancy Conditions: <u>a, b</u>		
Type IV (HT) building element:	<u>A, B, E, F-2, I, R, S- 2 occupancies</u>	<u>F-1, M, S-1 occupancies</u>	<u>F-1, M, S-1 occupancies containing any of the following:</u>
			1. The manufacture, storage or display of upholstered furniture or mattresses exceeds 2500 square feet; 2. Woodworking operations in excess of 2500 square feet; 3. Repair garages greater than 10,000 square feet or located in basements; 4. Repair or storage of commercial vehicles greater than 5000 square feet; 5. Bulk storage of tires exceeding 20,000 cubic feet
<u>Interior vertical surface of heavy timber beams, columns, and CLT walls</u>	<u>2</u>	<u>3</u>	<u>4</u>
<u>Interior horizontal or sloping surface of heavy timber beams and CLT ceilings</u>	<u>3</u>	<u>4</u>	<u>5</u>
<u>CLT exterior wall surface; FSD < 10 feet</u>	<u>2</u>	<u>2</u>	<u>2</u>
<u>CLT exterior wall surface; 10 ≤ feet FSD < 30 feet</u>	<u>1</u>	<u>1</u>	<u>1</u>
<u>CLT exterior wall surface; FSD ≥ 30 feet</u>	<u>Section 602.4</u>	<u>Section 602.4</u>	<u>Section 602.4</u>

CLT = Cross laminated timber; FSD - fire separation distance. For SI: 1 foot = 304.8 mm; 1 square foot = 0.0929 m²; 1 cubic foot = 0.028 m³

a. Heavy timber columns and beams that are designed to be 2 hour fire resistance rated as exposed wood members, as allowed by Section 722.1 and the NDS Chapter 16, are permitted to be considered 3 hour fire resistance rated when further encapsulated as incorporated in this table.

b. Wall and ceiling assemblies with multiple layers of gypsum board shall be permitted to be furred with noncombustible or fire retardant treated lumber furring provided the cavity is filled with securely attached mineral wool insulation and at least one layer of gypsum board is directly attached to the heavy timber structure. Multiple layers of gypsum board shall be permitted to be secured to furring as required in Section 722.5.1.2.1 or Figure 722.5.1(3) for columns and in Section 722.3.2.5 for walls. Attachment of multi-layer gypsum wallboard to ceilings shall be permitted to be as required for two layer assemblies attached to

resilient channels in Table 721.1(3) and the base layer or layers shall be permitted to be attached directly to the type IV structure as required by item 21 of Table 721.1(3). Other attachment shall be permitted to be used if specified by the manufacturer and approved.

Reason: There has been considerable interest in the utilization of wood for urban infill residential projects where land costs are at a premium and there is a need to utilize the full extent of the allowable height to incorporate housing over commercial uses below. G133 in the 2015 IBC allows type IA three hour podiums to be more than one story. That code change was successful as proponents pointed out that many jurisdictions already allow this practice approving multi-story podiums through alternate methods of construction. The three-hour separation at the top of the lower building must be supported by three-hour construction to the foundation. Another code change lessened the occupancy restrictions on the three-hour type IA lower building. These two changes allow significant retail and commercial mixed use projects with larger commercial occupancies below while maintaining light frame residential uses above.

The provisions for 510.2 are the most stringent in the code as the podium or pedestal is currently required to both be noncombustible and provide both 3 hour separation and support of the structure up above. Many have referred to it as a horizontal fire wall since fire walls from the structure above are not required to extend into the structure below and different types of construction can be utilized in the structure above and below.

This code change proposes to allow Type IV heavy timber construction below that is 3 hour fire resistance rated instead of the noncombustible podium.

Cross Laminated Timber has been manufactured for over 30 years in Europe and has just recently caught hold on the American Continent where some major structures are under way in Canada and smaller buildings are being built in the US. In Europe buildings of 8 to 10 stories and above are regularly constructed. The following link gives examples of CLT buildings throughout the world. <http://www.rethinkwood.com/tall-wood-survey>

Basically 2x nominal lumber is laminated in alternate 90 degree directions forming a solid billet of wood from 4.5 inches to 18 inches in thickness perpendicular to grain and in-plane dimensions of up to 9 feet by 65 feet. This material is extremely strong and stiff particularly in the plane direction where both sheet directions have parallel to grain laminated lumber elements. Because of this two way parallel grain it is dimensionally stable in the 9 foot and 65 foot direction.

CLT was approved for use in the 2015 IBC and the design standard can be found in Section 2303.1.4. As part of that public comment code submittal an E119 test was provided showing a five layer CLT wall loaded with 87,000 lbs. and with one layer of 5/8" type X gypsum board on each side. The test resulted in a three hour fire resistance rating and was stopped when fire came through near an edge of the wall panel. Manufactures have run additional tests since then in a variety of configurations.

The following link provides access to additional information regarding this or other code changes proposed by American Wood Council.

<http://www.awc.org/Code-Officials/2015-IBC-Code-Changes/>

Recently, the 2015 NDS was published which provides for calculated fire resistance of CLT as well as other exposed timber. Chapter 16 of the NDS has been recognized for years in the IBC as a procedure whereby exposed glulam and timber beams and columns can be calculated to provide fire resistance up to 2 hours. Newly updated Technical Report 10 is available on the AWC website providing more detail of this method. Fire resistance rating of exposed wood occurs because the exterior of the wood chars and insulates the interior of the wood member. The member is designed and detailed to meet the required structural performance with the outer char layer sacrificed to provide protection from heat and fire. The 2015 NDS extends this calculation method to CLT. Members with calculated fire resistance of exposed wood can be provided with further fire resistance rating by providing additional protection of that member with gypsum board. Recent tests show the horizontal surfaces of a timber beam to be protected for approximately 30 minutes for each 5/8" layer of gypsum board applied on the horizontal beam bottom and 40 minutes for each layer applied vertically on both sides. Similar timeframes are added to CLT wall and floor ceiling materials when gypsum is applied. This is not much different, in the case of walls, to a method for calculating the fire resistance rating of concrete walls that are further protected with gypsum board found in IBC Section 722.2.1.4.

All building materials have some form of "bad behavior". Some other materials significantly lose strength when subjected to elevated temperatures and must be protected. Many other materials may suffer significant distortions causing structural failure due to uneven heating of some portions of the structure when subjected to a compartment fire while other portions of the structure remain at room temperature. Still other bad behaviors include brittle spalling of material when subjected to heat.

Heavy timber wood construction has the advantage of remaining relatively dimensionally stable as the wood chars and is not a good conductor of heat. Wood also retains its strength in the remaining section as large members char to around exposed surfaces. The main issue raised about wood is the potential to contribute to the fire as additional fuel. The code relies on the limitation of noncombustible materials in the definition of Type IA construction to limit the potential of the structure to contribute to the fire. This is especially critical in taller major structures and podium type buildings supporting other buildings.

In order to obtain similar performance regarding the potential contribution of wood to a fire, this code change proposal gives the requirements for additional gypsum board protection to delay the onset of the fire causing the wood to char and contribute to combustion. Although the building is required have NFPA 13 sprinklers throughout that is not considered in the design and provides a belt and double suspender approach to ensuring safety while protecting the heavy timber structure and gypsum board from the effects of common nuisance fires.

Table 510.2 is provided which specifies increased protection of the proposed heavy timber structure based on the potential fire load of the occupancy. Fire area requirements in certain occupancies with additional combustible material typically call for reduced fire area size or sprinklers in section 903 due additional fire load. These are also provided with additional layers of gypsum board keeping the CLT cool and delaying the onset of wood contribution to the fire load in these fire areas with up to 4 layers of 5/8" type X gypsum board on walls and 5 layers on the ceilings. This protection can push the fire resistance rating performance in an E119 test upwards of 4 to 5 hours or more with a four layers of gypsum on a CLT wall. The heavy amount of additional gypsum board provided in this proposal for podiums is used to limit the probability of contribution of the wood structure to a fire also serves to provide a substantial margin of safety against structural failure when compared with other materials. Once the wood structure starts to char, it still has a large margin time where the strength of the material is not affected.

It is worthy to note that not all fires are equal and the only time the E119 time and temperature curve is standard is when in the controlled environment of a test furnace. Actual time temperature curves are affected by a variety of factors including fire load, insulation of compartment, ventilation, and configuration. All materials are affected differently some leading to brittle failure or sudden onset of strength loss. The actual performance of any material is affected by specific material characteristics and fire conditions.

The E119 test while not intended to measure contribution of the tested material to the fire does provide an apple to apple measure of performance of measurable characteristics of test assemblies subjected to the same conditions. By significantly delaying or eliminating the contribution of the heavy timber with heavy gypsum board protection, this apple to apple comparison is made more consistent. Typical fires may actually have higher spiking of temperatures well above the E119 levels with decay in temperature as the fire progresses and decays. E119 tests also may not predict the performance of materials where the strength or dimensions are temperature sensitive. Heavy timber tends to remain stable in actual fire conditions and the main adverse effect of the early spike in temperature is slightly faster char rates but followed by slower char rates when the fire decays.

The predictability, strength and dimensional stability of highly protected heavy timber, is not nearly as susceptible to non-standard fires as may be with other materials.

In Section 510.2 the three hour type IA structure below is unlimited in size. This proposal relies on the allowable area of type IV construction in the building below and is more conservative since the 3 hour building below would be required to be limited as allowed for type IV or divided by three hour fire walls if the allowable area of the lower building exceeds the allowable area for type IV construction.

This code proposal is a first attempt at utilizing massive timber in a new way. Because of that, the level of gypsum protection is conservative based on fire load. This is in addition to the behavior of wood char in heavy timber to provide reliable structural performance and in addition to the installation of an NFPA 13 sprinkler system.

Cost Impact: Will not increase the cost of construction

This code change provides a new option for construction that is not currently available.

G 163-15 : 510.2-RICHARDSON4776

G 164-15

510.5, 708.3, 711.2.3, 711.2.4.1, 711.2.4.3

Proponent: Stephen Skalko, representing Masonry Alliance For Codes and Standards (svskalko@cox.net)

2015 International Building Code

Revise as follows:

510.5 Group R-1 and R-2 buildings of Type IIIA construction. The height limitation for buildings of Type IIIA construction in Groups R-1 and R-2 shall be increased to six stories and 75 feet (22 860 mm) where the first floor assembly above the basement has a fire-resistance rating of not less than 3 hours and the floor area is subdivided by dwelling unit and sleeping unit separations are a minimum of 2-hour fire-resistance-rated fire barrier walls into areas of not more than 3,000 square feet (279 m²).

708.3 Fire-resistance rating. Fire partitions shall have a fire-resistance rating in accordance with the following

1. Not less than 2-hour for Group I-1, R-1 and R-2 occupancies in buildings of not Type III, IV and V construction that are 4 or more stories in height.
2. Not less than 1 hour except for buildings covered in Item 1 above.

Exceptions:

1. Corridor walls permitted to have a ¹/₂-hour fire-resistance rating by Table 1020.1.
2. ~~Dwelling unit and sleeping unit separations in buildings of Type IIB, IIIB and VB construction shall have fire-resistance ratings of not less than ¹/₂-hour in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.~~

711.2.3 Supporting construction. The supporting construction shall be protected to afford the required fire-resistance rating of the horizontal assembly supported.

Exception: In buildings of Type IIB, IIIB or VB construction, the construction supporting the horizontal assembly is not required to be fire-resistance rated at the following:

1. Horizontal assemblies at the separations of incidental uses as specified by Table 509 provided the required fire-resistance rating does not exceed 1 hour.
2. ~~Horizontal assemblies at the separations of dwelling units and sleeping units as required by Section 420.3.~~
2. Horizontal assemblies at smoke barriers constructed in accordance with Section 709.

711.2.4.1 Separating mixed occupancies. Where the horizontal assembly separates mixed occupancies, the assembly shall have a fire-resistance rating of not less than that required by the following:

1. Section 508.4 based on the occupancies being separated.
2. Not less than 2-hours for Group I-1, R-1, and R-2 occupancies in buildings of Type III, IV or V construction that are more than 4 stories in height.

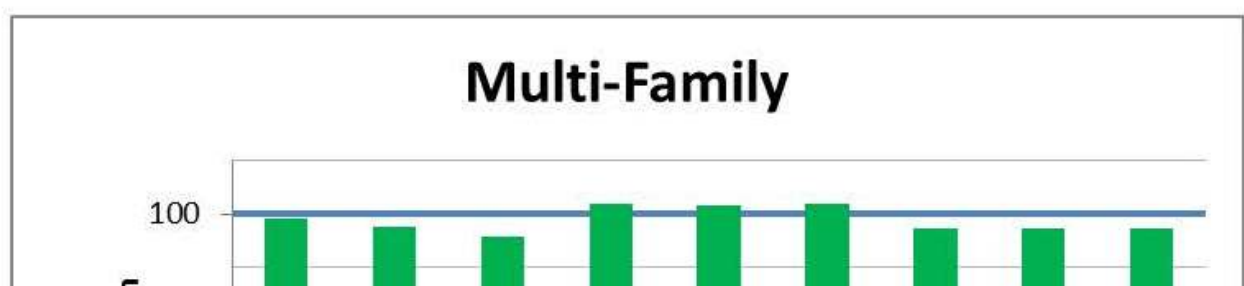
711.2.4.3 Dwelling units and sleeping units. Horizontal assemblies serving as dwelling or sleeping unit separations in accordance with Section 420.3 shall be not less than the following:

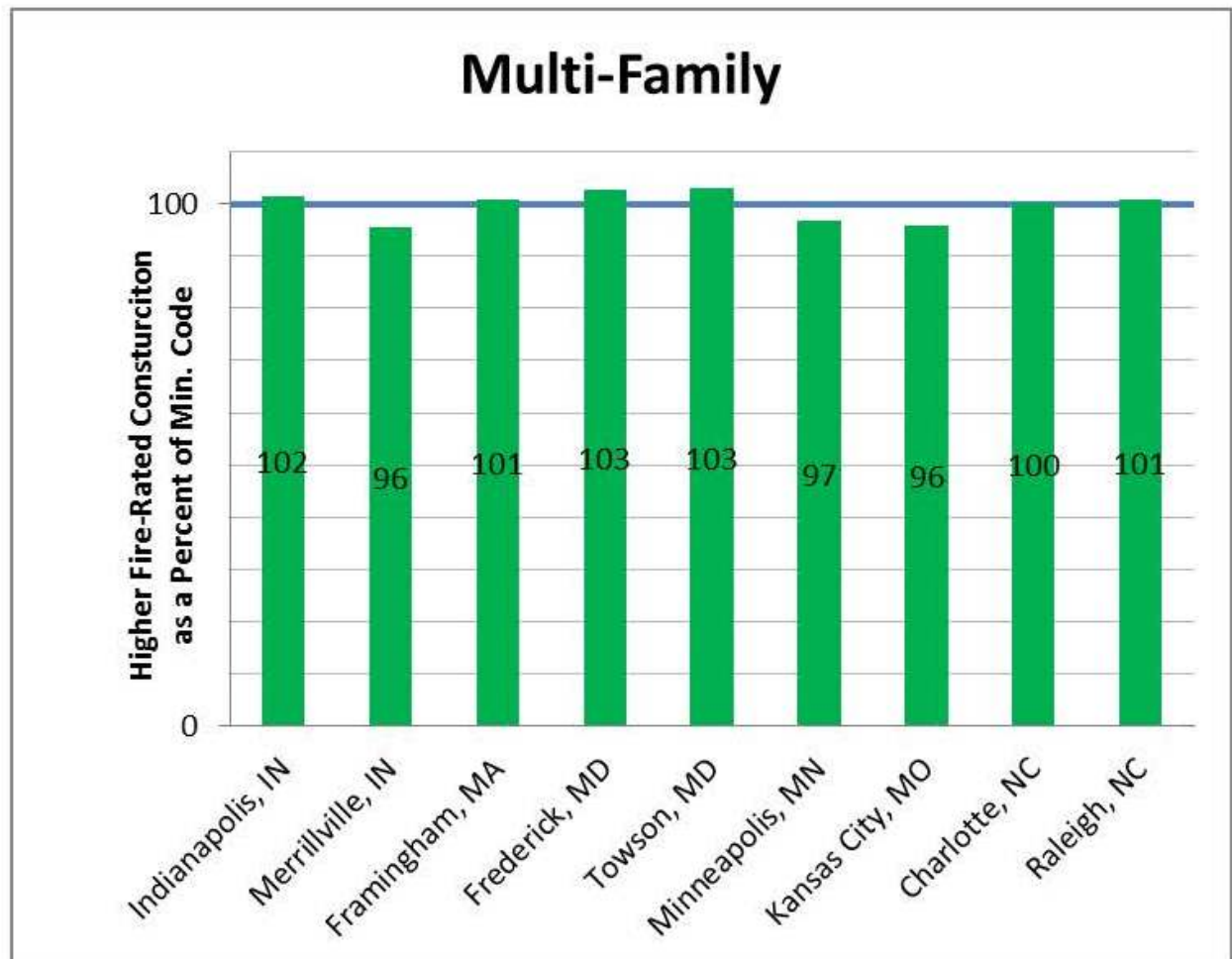
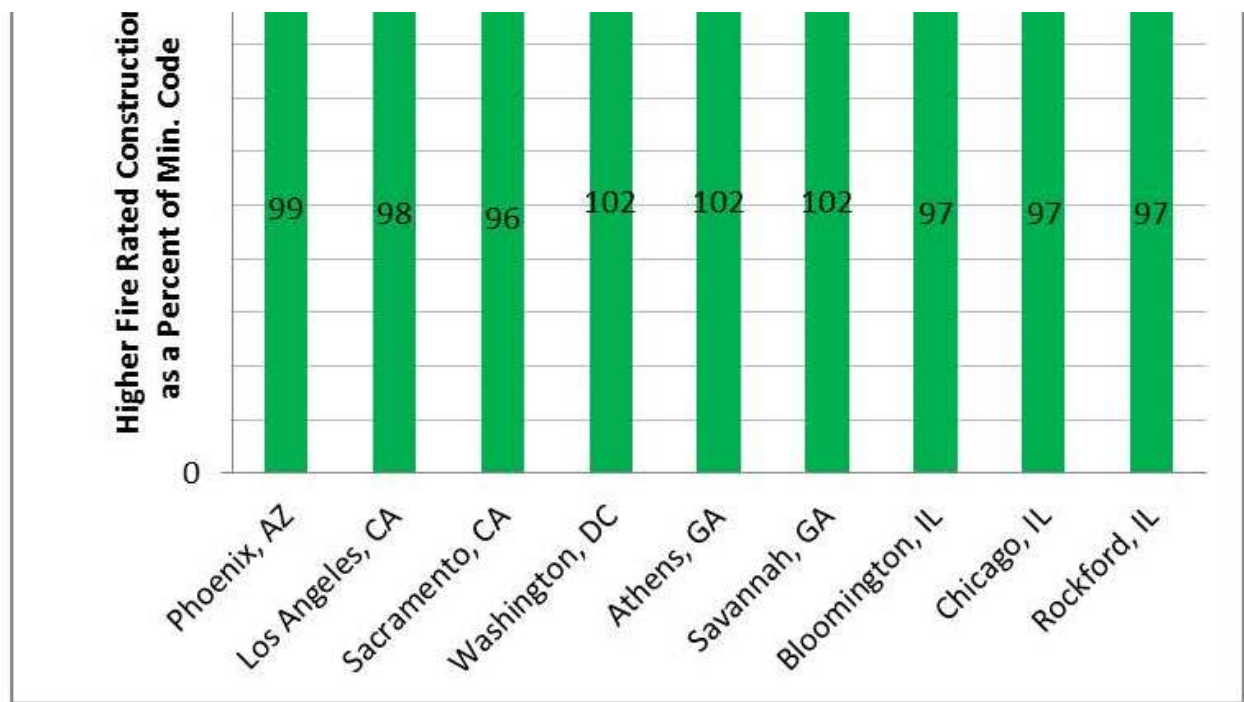
1. One-hour fire-resistance-rated construction, or
2. Two-hour fire resistance rated construction for Group I-1, R-1 and R-2 occupancies in buildings of Type III, IV and V construction that are 4 or more stories in height.

Exception: ~~Horizontal assemblies separating dwelling units and sleeping units shall be not less than ¹/₂-hour fire-resistance-rated construction in a building of Type IIB, IIIB and VB construction, where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.~~

Reason: Though the loss of life from fires affecting Group I-1, R-1 and R-2 occupancies is not high the amount of property damage continues to remain high. Section 101.3 of the code states the intent of the building code includes safety to property from fire. To reduce property loss this proposal modifies the requirements for Group I-1, R-1 and R-2 occupancies of Types III, IV and V construction 4 or more stories in height to require these buildings to be constructed with fire rated separations between sleeping and dwelling units with a minimum of 2-hour fire resistance rating. The increase in the fire resistance provides a much higher degree of protection to property in the event of a fire in these taller buildings with combustible construction. In addition, when occupants in these types of buildings are sleeping they are less likely to be aware of conditions around them. Fires occurring during these times pose a high risk to the occupants. This increase in the fire resistance also provides a higher degree of protection to sleeping occupants in reducing the spread of fire.

Insert for Cost Statement to Group I-1, R-1 and R-2 code change by the Masonry Alliance for Codes and Standards.





Bibliography: [1]Haas Architects Engineers: A multi-disciplinary architectural and engineering firm located in State College, Pennsylvania with a thirty year history of client centered service including commercial, single and multi-family residential, retail, and sports based projects.

[2]Tim E. Knisely; Senior fire and commercial housing inspector for the Centre Region Code Administration, in State College, Pennsylvania. Mr. Knisely holds a certification as a registered Building Code Official in the Commonwealth of Pennsylvania and holds more than eight certifications from the International Code Council. In addition, Mr. Knisely has been involved in the fire service for more than 20 years.

[3]Poole Anderson Construction; One of the largest building contractors in Central Pennsylvania with a 75 year history and an annual construction volume exceeding 60,000,000

dollars.

Cost Impact: Will increase the cost of construction

The code change proposal may or may not increase the cost of construction. Independent third party studies of rectangular 4-story Type V multi-family dwellings indicate that the cost differential ranges between minus 3% to plus 3% for the most significant cost impact associated with designs that may shift buildings such as those affected by this proposal from Type V construction to other Types of construction due to the increased fire resistance of the dwelling unit separations.

A multi-family residential structure should be schematically designed to meet all of the requirements of the International Building Code to accurately evaluate the relative construction cost. Once designed, the cost comparison buildings were reviewed for code compliance, and cost estimates prepared. The study was conducted by:

Architect & Engineer: Haas Architects Engineers¹

Code Official: Tim E. Knisely²

Cost Estimation : Poole Anderson Construction³

The building model chosen for the project was a 4 story multi-family residential structure encompassing approximately 25,000 gross square feet of building area per floor. The cost comparisons are based on the proposed target building assembled using a typical mix of one and two bedroom dwelling units

The following construction types and alternates were included in the evaluation:

Conventional Type V framing with Type V floor system

Alternate: Conventional Type VA framing with Type VA floor system

Non-combustible framing with fire-rated non-combustible floors (concrete slab on steel deck)

Fire-rated load bearing non-combustible construction with fire rated non-combustible floor system (concrete block and precast plank)

The cost estimate for each building model included the complete fit out of each building with the exception of movable appliances and furniture. For more details on the specific criteria visit: www.psfscac.org.

The following charts show the cost comparisons between a multifamily building constructed in accordance with the minimum fire resistive provisions of the code for Type V construction and the other construction systems that would be expected to meet the increased fire resistance.

G 164-15 : 510.5-SKALKO5485

G 165-15

510.12 (New)

Proponent: Dennis Richardson, representing American Wood Council (drichardson@awc.org)

2015 International Building Code

Add new text as follows:

510.12 Group R-1 and R-2 buildings of Type IV HT construction. The height and story limitations for buildings of Type IV HT construction in Groups R-1 and R-2 shall be increased to nine stories and 100 feet (30 480 mm) provided all of the following are met:

1. The heavy timber construction shall be not less than 2 hour fire resistance rated and protected with a minimum of one layer of 5/8 inch type X gypsum board on all interior wall surfaces and a minimum of two layers of 5/8 inch type X gypsum board on the ceiling side of all horizontal assemblies.
2. The building has a fire separation distance of not less than 50 feet (15 240 mm).
3. The exits are segregated in an area enclosed by a cross laminated timber 2 hour fire-resistance-rated walls protected with two layers of 5/8 inch type X gypsum board or equivalent on the room side of all walls adjacent to the enclosure.
4. Wall and ceiling assemblies with multiple layers of gypsum board shall be permitted to be furred with noncombustible or fire retardant treated wood furring provided the cavity is filled with securely attached mineral wool insulation and at least one layer of gypsum board is directly attached to the heavy timber structure. Multiple layers of gypsum board shall be permitted to be secured to furring as required in Section 722.5.1.2.1 or Figure 722.5.1(3) for columns and in Section 722.3.2.5 for walls. Attachment of multi layer gypsum wallboard to ceilings shall be permitted to be as required for single assemblies attached to resilient channels in Table 721.1(3) and the base layer or layers shall be permitted to be attached directly to the Type IV structure as required by item 21 of Table 721.1(3). Other attachment shall be permitted to be used if specified by the manufacturer and approved.
5. Buildings of Type IV construction shall be permitted to be located over a building with multiple occupancy groups meeting the provisions of Section 510.2.

Reason: Reason: Mass timber products such as cross-laminated timber (CLT) provide the structural and fire resistance capabilities necessary for taller buildings. This proposal closely follows the special occupancy for Type IIA structures in 510.6 as a model. Existing section 510.6 allows 1 fire resistance rated light frame steel buildings to be up to 9 stories and 100 feet tall when surrounded by 50 feet. This proposal goes to the same height and number of stories but requires additional fire resistance (2 hours instead of 1 hour throughout). The CLT is provided with minimum protection throughout the inside with 5/8" type X gypsum (one layer at all interior walls and two layers at all ceilings) and the overall assembly must meet the 2 hour E119 fire resistance test. In addition to the mass timber protected with type X gypsum board, the building is provided with an NFPA 13 sprinkler system throughout and is surrounded by yards of 50 feet. The entire fire and life safety "package" is at least equivalent to what is currently specified in 510.6. The current section 510.6 applying to one hour type II construction requires stairways to be segregated into areas separated by a two hour fire wall. Although the existing language for 510.6 is somewhat unclear, this can be accomplished in the current 510.6 with a two hour fire wall separating the one hour type II building into two fire areas, each with stairways or with separate fire walls at each exit enclosure.

A fire wall is not necessary with this proposal since the entire building is two hour fire resistance rated construction. Stairways are provided with additional protection with a second layer of 5/8" type x gypsum board on the fire side of rooms adjacent to the stairways. Provisions are included to allow the installation of resilient channels and spaces filled with insulation for sound attenuation. Additionally it is noted this building may incorporate a 3 hour separation below if additional occupancies are to be housed in a podium below.

This code change helps address concerns about climate change by allowing a taller building to utilize cross laminated timber which sequesters carbon and has low embodied energy. There is much focus on the future utilization of this building system. The following link gives examples of CLT buildings throughout the world.

<http://www.rethinkwood.com/tall-wood-survey>

In addition the following link provides access to any additional information regarding this or other code changes proposed by American Wood Council.

<http://www.awc.org/Code-Officials/2015-IBC-Code-Changes/>

Cost Impact: Will not increase the cost of construction

This new code section provides a new option for construction that is not currently available.

G 165-15 : 510.12 (New)-
RICHARDSON4889

G 166-15

511.1 (New), 511.2 (New), 511.3 (New), 511.4 (New)

Proponent: Carl Wren, City of Austin, Texas, representing City of Austin, Texas; Planning and Development Review Department and the Austin Fire Department (carl.wren@austintexas.gov)

2015 International Building Code

Add new text as follows:

SECTION 511—OCCUPIED ROOFS

511.1 General. Buildings with occupied roofs shall comply with this section and with Sections 903.2.1.6 and 1006.3, as applicable.

511.2 Enclosure of occupied roof. Occupied roofs, rooftops, and rooftop decks that are provided with walls or overhead weather protection, whether permanent or temporary, shall be considered a story for the purpose of determining the required construction type for the structure or building, for applying the requirements of Section 403, for applying Chapter 10, and for applying the thresholds for fire safety features required by Sections 903, 905, and 907.

Exceptions:

1. A parapet complying with Section 705.11 and less than 59 inches in height shall not be considered a wall for the purposes of this section.
2. Occupied roofs with temporary weather protection need not be considered a story when compliant with the fire code and approved by the fire code official for specific events conducted for less than 30 days each and the aggregate duration of such events is less than 90 days per 12 month period.

511.3 Fall protection. Occupied roofs and rooftops shall be provided with guards in accordance with Section 1015.

511.4 Interstitial spaces. Where decks or other walking surfaces are constructed above a roof to facilitate rooftop occupancy, the space between the roof/ceiling assembly and the deck or surface shall be constructed in a manner that precludes the accumulation of materials between the roof/ceiling assembly and the deck or walking surface and that prevents the introduction of ignition sources to the space.

Reason: Rooftop occupancies are becoming more and more common and the installation of weather protection is creating new or expanded building areas and occupancies. Some of the issues have been addressed in the 2015 code in section 903.2.1.6 and in section 1006.3, but the issue of increased building heights and added occupancies is more prevalent and more varied than the current code can adequately address.

The exceptions to proposed section 511.2 would allow for flexibility in dealing with unplanned and unexpected circumstances that might cause a truly short term need for weather protection of a roof while still requiring appropriate protection of occupancies that will be ongoing and create internal spaces on rooftops.

Cost Impact: Will increase the cost of construction

The proponent wished to say that the code change would not increase construction costs, but the change really addresses measures and practices being used that actually create additional building area. One cannot necessarily build code compliant walls and ceilings for the same price as setting up tents or membrane structures on the tops of multi-story buildings that would not normally be allowed to include combustible construction. This code change simply acknowledges that these areas need to be treated as enclosed spaces and this will of necessity increase some construction costs.

G 166-15 : 511 (New)-WREN5657

G 167-15

TABLE 601

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

2015 International Building Code

Revise as follows:

TABLE 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A	B	A	B	HT	A	B
Primary structural frame ^f (see Section 202)	3 ^{a, b}	2 ^{a, b}	1 ^b	0	1 ^b	0	HT	1 ^b	0
Bearing walls	3	2	1	0	2	2	2	1	0
Exterior ^{e, f}	3 ^a	2 ^a	1	0	1	0	1/HT	1	0
Interior									
Nonbearing walls and partitions	See Table 602								
Exterior									
Nonbearing walls and partitions	0	0	0	0	0	0	See Section 602.4.6	0	0
Interior ^d									
Floor construction and associated secondary members (see Section 202)	2	2	1	0	1	0	HT	1	0
Roof construction and associated secondary members (see Section 202)	1 ¹ / 2 ^b	1 ^{b, c}	1 ^{b, c}	0 ^c	1 ^{b, c}	0	HT	1 ^{b, c}	0

For SI: 1 foot = 304.8 mm.

- Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.
- Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members in roof construction shall not be required, including protection of primary structural frame members, roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.
- In all occupancies, heavy timber shall be allowed where a 1-hour or less fire-resistance rating is required.
- Not less than the fire-resistance rating required by other sections of this code.
- Not less than the fire-resistance rating based on fire separation distance (see Table 602).
- Not less than the fire-resistance rating as referenced in Section 704.10.

Reason: This proposal has been submitted to address multiple interpretations of Table 601 Footnote "b." We have found that although the code membership has supported the exemption for fire protection of structural members 20 feet or more above any floor immediately below that framing, we have found that other entities are interpreting that the primary structural frame is not included in this exemption.

This proposal is designed to address that impact by modifying two aspects of Table 601. The first; to add the reference to footnote "b" to the primary structural frame row of fire resistance requirements, and two; to modify Footnote "b" by adding the phrases "in roof construction" and "primary structural frame members" to the current list of items now shown.

Multiple attempts have been made in the past to restrict the original intent, however they have all been disapproved. The most recent was code change G139-12. The code development committee's response stated: "The proposal was disapproved as it is the intent of the footnote to allow all structural members to be unprotected. This proposal would only exempt the secondary members." The committee's disapproval of G139-12 was further upheld by the ICC membership during the Final Action Hearings in Portland, OR, October 2012. The public comment to G139-12 challenging the committee's decision was also disapproved by ICC membership.

Further, the reference of structural members applying to all structural members is further reinforced by the definition of "Primary Structural Frame" in Section 202, where it states in the charging sentence the following: "Primary structural frame. The primary structural frame shall include all of the following structural members...."

These responses to the proposals, along with reasons by the code development committees, and upheld by the ICC membership, are part of the ICC formal public record and constitute the formal position of the ICC on the issue.

Cost Impact: Will not increase the cost of construction
This proposal clarifies the intent of footnote "b" of the Table.

Proponent: Rick Lupton, representing City of Seattle, Dept of Planning & Development (rick.lupton@seattle.gov)

2015 International Building Code

Revise as follows:

TABLE 602
FIRE-RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE^{a, d, g}

FIRE SEPARATION DISTANCE = X (feet)	TYPE OF CONSTRUCTION	OCCUPANCY GROUP H ^e	OCCUPANCY GROUP F-1, M, S-1 ^f	OCCUPANCY GROUP A, B, E, F-2, I, R ⁱ , S-2, U ^h
$X < 5^b$	All	3	2	1
$5 \leq X < 10$	IA Others	3 2	2 1	1 1
$10 \leq X < 30$	IA, IB IIB, VB Others	2 1 1	1 0 1	1 ^c 0 1 ^c
$X \geq 30$	All	0	0	0

For SI: 1 foot = 304.8 mm.

- Load-bearing exterior walls shall also comply with the fire-resistance rating requirements of Table 601.
- See Section 706.1.1 for party walls.
- Open parking garages complying with Section 406 shall not be required to have a fire-resistance rating.
- The fire-resistance rating of an exterior wall is determined based upon the fire separation distance of the exterior wall and the story in which the wall is located.
- For special requirements for Group H occupancies, see Section 415.6.
- For special requirements for Group S aircraft hangars, see Section 412.4.1.
- Where Table 705.8 permits nonbearing exterior walls with unlimited area of unprotected openings, the required fire-resistance rating for the exterior walls is 0 hours.
- For a building containing only a Group U occupancy private garage or carport, the exterior wall shall not be required to have a fire-resistance rating where the fire separation distance is 5 feet (1523 mm) or greater.
- For a Group R-3 building of Type II-B or Type V-B construction, the exterior wall shall not be required to have a fire-resistance rating where the fire separation distance is 5 feet (1523 mm) or greater.

Reason: This change is intended to clarify exterior wall protection for Group R-3 occupancies of Type II-B and Type V-B construction. Where Table 705.8 allows unlimited area of unprotected openings, a fire resistive rating at non-bearing exterior walls is not required per Table 602, footnote h. The appropriate application to R-3 occupancies can be easily missed because unlimited area of unprotected openings for Group R-3 occupancies, where the fire separation distance is 5 feet or greater, is permitted per footnote f of Table 705.8, rather than in the table itself. In addition, bearing walls of Type II-B and Type V-B construction are not required to be rated in accordance with Table 601. As a result, Table 602 is the controlling table for bearing and non-bearing walls in those types of construction. By adding this footnote to Table 602 it is clear that a fire-resistive rating is not required at exterior walls of Type II-B or Type V-B Group R-3 buildings where the fire separation is 5 feet or greater.

Cost Impact: Will not increase the cost of construction

The proposed change is a clarification of existing requirements and so does not result in any cost increase.

G 169-15

TABLE 601

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

2015 International Building Code

Revise as follows:

TABLE 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A	B	A	B	HT	A	B
Primary structural frame ^f (see Section 202)	3 ^a	2 ^a	1	0	1	0	HT	1	0
Bearing walls	3	2	1	0	2 ^a	2 ^a	2 ^a	1	0
Exterior ^{e, f}	3 ^a	2 ^a	1	0	1	0	1/HT	1	0
Interior									
Nonbearing walls and partitions	See Table 602								
Exterior									
Nonbearing walls and partitions	0	0	0	0	0	0	See Section 602.4.6	0	0
Interior ^d									
Floor construction and associated secondary members (see Section 202)	2	2	1	0	1	0	HT	1	0
Roof construction and associated secondary members (see Section 202)	1 1/2 ^b	1 ^{b,c}	1 ^{b,c}	0 ^c	1 ^{b,c}	0	HT	1 ^{b,c}	0

For SI: 1 foot = 304.8 mm.

- a. Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.
- b. Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.
- c. In all occupancies, heavy timber shall be allowed where a 1-hour or less fire-resistance rating is required.
- d. Not less than the fire-resistance rating required by other sections of this code.
- e. Not less than the fire-resistance rating based on fire separation distance (see Table 602).
- f. Not less than the fire-resistance rating as referenced in Section 704.10.
- g. Shall be permitted to be 1 hour where the building is provided with an automatic sprinkler system in accordance with Section 903.1.1 and has a fire separation distance of not less than 30 feet on all sides.

Reason: Exterior wall ratings for Type III and IV construction address the hazards associated with exposure to other buildings. When there is no exposure to other buildings, it is difficult to identify a purpose for the two-hour rating of exterior walls when the rest of the structure can be one-hour or even unrated. The requirement for the two-hour rating itself, in platform construction, has caused some designers and jurisdictions to require special protection details and connections at the intersection of floor and wall construction in attempts to maintain a continuity of the rating for the exterior wall. But when there is no exposure to other buildings, this results only in protecting the exterior wall from the interior of the building, which serves no purpose and could jeopardize the overall performance of floors under fire conditions by requiring special connections that leave the floor vulnerable for the sake of protecting the wall.

The proposed required sprinkler system, in addition to the fire separation distance, will serve for better and more practical fire safety in the majority of Type III and IV buildings. The 30-foot fire separation distance is the distance at which Table 602 allows unrated walls for all occupancies; the sprinkler protection is a full NFPA 13 system.

Additional information related to 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
Will save cost without sacrificing safety.

G 170-15

602.1, TABLE 601, 602.2, 602.3, TABLE 602.4, 602.4, 602.4.1, 602.4.2, 602.4.3, 602.4.4, 602.4.5, 602.4.6, 602.4.6.1, 602.4.6.2, 602.4.7, 602.4.8, 602.4.8.1, 602.4.8.2, 602.4.9, 602.5, 602.2 (New), 603, 603.1, 603.1.1, 603.1.2, 603.1.3

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

2015 International Building Code

Revise as follows:

602.1 General. Buildings and structures erected or to be erected, altered or extended in height or area shall be classified in one of the five as Type I, II, III, IV, or V construction types defined in Sections 602.2 through 602.5. The building elements shall be constructed of materials as required for the type of construction in accordance with Sections 602.1.1 through 602.1.5 and shall have a *fire-resistance rating* not less than that specified in Table 601 and exterior walls shall have a *fire-resistance rating* not less than that specified in Table 602. Where required to have a *fire-resistance rating* by Table 601, building elements shall comply with the applicable provisions of Section 703.2. The protection of openings, ducts and air transfer openings in building elements shall not be required unless required by other provisions of this code.

**TABLE 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)**

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A	B	A	B	HT	A	B
Primary structural frame ^f (see Section 202)	3 ^a	2 ^a	1	0	1	0	HT	1	0
Bearing walls	3	2	1	0	2	2	2	1	0
Exterior ^{e, f}	3 ^a	2 ^a	1	0	1	0	1/HT	1	0
Interior									
Nonbearing walls and partitions	See Table 602								
Exterior									
Nonbearing walls and partitions							See		
Interior ^d	0	0	0	0	0	0	Section	0	0
							602.4.6		
							602.4.1.6		
Floor construction and associated secondary members (see Section 202)	2	2	1	0	1	0	HT	1	0
Roof construction and associated secondary members (see Section 202)	1 ¹ / 2 ^b	1 ^{b,c}	1 ^{b,c}	0 ^c	1 ^{b,c}	0	HT	1 ^{b,c}	0

For SI: 1 foot = 304.8 mm.

- Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.
- Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.
- In all occupancies, heavy timber shall be allowed where a 1-hour or less fire-resistance rating is required.
- Not less than the fire-resistance rating required by other sections of this code.
- Not less than the fire-resistance rating based on fire separation distance (see Table 602).
- Not less than the fire-resistance rating as referenced in Section 704.10.

602.2602.1.2 Types I and II. Types I and II construction are those types of construction in which the building elements listed in Table 601 are shall be constructed of noncombustible materials, except as. Combustible materials are permitted in accordance with Section 603602.2 and elsewhere in this code.

602.3602.1.3 Type III. Type III construction is that type of construction in which the exterior walls are shall be constructed of noncombustible materials and the interior building elements are of any material permitted by this code. Fire-retardant-treated wood framing complying Combustible materials within exterior walls are permitted in accordance with Section 2303.2 shall be permitted within exterior wall assemblies of a 2-hour rating or less.602.2 and elsewhere in this code.

**TABLE 602.4 602.1.3
WOOD MEMBER SIZE EQUIVALENCIES**

MINIMUM NOMINAL SOLID SAWN SIZE		MINIMUM GLUED-LAMINATED NET SIZE		MINIMUM STRUCTURAL COMPOSITE LUMBER NET SIZE	
Width, inch	Depth, inch	Width, inch	Depth, inch	Width, inch	Depth, inch
8	8	6 ³ / 4	8 ¹ / 4	7	7 ¹ / 2
6	10	5	10 ¹ / 2	5 ¹ / 4	9 ¹ / 2
6	8	5	8 ¹ / 4	5 ¹ / 4	7 ¹ / 2
6	6	5	6	5 ¹ / 4	5 ¹ / 2
4	6	3	6 ⁷ / 8	3 ¹ / 2	5 ¹ / 2

For SI: 1 inch = 25.4 mm.

602.4.602.1.4 Type IV. Type IV construction (Heavy Timber, HT) is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of solid or laminated wood without concealed spaces. The details of Type IV construction shall comply with the provisions of this section and Section 2304.11. ~~Exterior walls complying with Section 602.4.1 or 602.4.2 shall be permitted~~ 2304.10. Minimum solid sawn nominal dimensions are required for structures built using Type IV construction (HT) in accordance with this section. For glued-laminated members and structural composite lumber (SCL) members, the equivalent net finished width and depths corresponding to the minimum nominal width and depths of solid sawn lumber are required as specified in Table ~~602.4.603.1.3.~~ Cross-laminated timber (CLT) dimensions used in this section are actual dimensions. Combustible materials in exterior walls are permitted in accordance with Section 602.2 and elsewhere in this code.

602.4.1 Fire-retardant-treated wood in exterior walls. ~~Fire-retardant-treated wood framing complying with Section 2303.2 shall be permitted within exterior wall assemblies with a 2-hour rating or less.~~

602.4.2 Cross-laminated timber in exterior walls. ~~Cross-laminated timber complying with Section 2303.1.4 shall be permitted within exterior wall assemblies with a 2-hour rating or less, provided the exterior surface of the cross-laminated timber is protected by one of the following:~~

- 1- ~~Fire-retardant-treated wood sheathing complying with Section 2303.2 and not less than ¹⁵/₃₂-inch (12 mm) thick;~~
- 2- ~~Gypsum board not less than ¹/₂-inch (12.7 mm) thick; or~~
- 3- ~~A noncombustible material.~~

602.4.3602.1.4.1 Columns. Wood columns shall be sawn or glued laminated and shall be not less than 8 inches (203 mm), nominal, in any dimension where supporting floor loads and not less than 6 inches (152 mm) nominal in width and not less than 8 inches (203 mm) nominal in depth where supporting roof and ceiling loads only. Columns shall be continuous or superimposed and connected in an *approved* manner. Protection in accordance with Section 704.2 is not required.

602.4.4602.1.4.2 Floor framing. *No change to text.*

602.4.5602.1.4.3 Roof framing. Wood-frame or glued-laminated arches for roof construction, which spring from the floor line or from grade and do not support floor loads, shall have members not less than 6 inches (152 mm) nominal in width and have not less than 8 inches (203 mm) nominal in depth for the lower half of the height and not less than 6 inches (152 mm) nominal in depth for the upper half. Framed or glued-laminated arches for roof construction that spring from the top of walls or wall abutments, framed timber trusses and other roof framing, which do not support floor loads, shall have members not less than 4 inches (102 mm) nominal in width and not less than 6 inches (152 mm) nominal in depth. Spaced members shall be permitted to be composed of two or more pieces not less than 3 inches (76 mm) nominal in thickness where blocked solidly throughout their intervening spaces or where spaces are tightly closed by a continuous wood cover plate of not less than 2 inches (51 mm) nominal in thickness secured to the underside of the members. Splice plates shall be not less than 3 inches (76 mm) nominal in thickness. Where protected by *approved* automatic sprinklers under the roof deck, framing members shall be not less than 3 inches (76 mm) nominal in width.

602.4.6602.1.4.4 Floors. *No change to text.*

602.4.61602.1.4.4.1 Sawn or glued-laminated plank floors. Sawn or glued-laminated plank floors shall be one of the following:

1. Sawn or glued-laminated planks, splined or tongue-and-groove, of not less than 3 inches (76 mm) nominal in thickness covered with 1-inch (25 mm) nominal dimension tongue-and-groove flooring, laid crosswise or diagonally, ¹⁵/₃₂-inch (12 mm) wood structural panel or ¹/₂-inch (12.7 mm) particleboard.
2. Planks not less than 4 inches (102 mm) nominal in width set on edge close together and well spiked and covered with 1-inch (25 mm) nominal dimension flooring or ¹⁵/₃₂-inch (12 mm) wood structural panel or ¹/₂-inch (12.7 mm) particleboard.

The lumber shall be laid so that no continuous line of joints will occur except at points of support. Floors shall not extend closer than ¹/₂ inch (12.7 mm) to walls. Such ¹/₂-inch (12.7 mm) space shall be covered by a molding fastened to the wall and so arranged that it will not obstruct the swelling or shrinkage movements of the floor. Corbelling of masonry walls under the floor shall be permitted to be used in place of molding.

602.4.62602.1.4.4.2 Cross-laminated timber floors. *Cross-laminated timber* shall be not less than 4 inches (102 mm) in thickness. *Cross-laminated timber* shall be continuous from support to support and mechanically fastened to one another. *Cross-laminated timber* shall be permitted to be connected to walls without a shrinkage gap providing swelling or shrinking is considered in the design. Corbelling of masonry walls under the

floor shall be permitted to be used.

602.4.7602.1.4.5 Roofs. Roofs shall be without concealed spaces and wood roof decks shall be sawn or glued laminated, splined or tongue-and-groove plank, not less than 2 inches (51 mm) nominal in thickness; 1¹/₈-inch-thick (32 mm) wood structural panel (exterior glue); planks not less than 3 inches (76 mm) nominal in width, set on edge close together and laid as required for floors; or of cross-laminated timber. Other types of decking shall be permitted to be used if providing equivalent fire resistance and structural properties.

Cross-laminated timber roofs shall be not less than 3 inches (76 mm) nominal in thickness and shall be continuous from support to support and mechanically fastened to one another.

602.4.8-Partitions and walls. Partitions and walls shall comply with Section 602.4.8.1 or 602.4.8.2.

602.4.8-602.1.4.6 Interior walls and partitions. *No change to text.*

602.4.8.2 Exterior walls. Exterior walls shall be of one of the following:

1. Noncombustible materials.
2. Not less than 6 inches (152 mm) in thickness and constructed of one of the following:
 - 2.1. *Fire-retardant-treated wood* in accordance with Section 2303.2 and complying with Section 602.4.1.
 - 2.2. *Cross-laminated timber* complying with Section 602.4.2.

602.4.9602.1.4.7 Exterior structural members. *No change to text.*

602.5602.1.5 Type V. Type V construction is that type of construction in which the structural elements, *exterior walls* and interior walls are of any materials permitted by this code.

602.2 Allowable uses of combustible materials. Building elements in Type I and II Construction and within exterior walls in Types III and IV Construction shall be permitted to be constructed of combustible materials in accordance with the following applications:

1. *Fire-retardant-treated wood* framing complying with Section 2303.2 shall be permitted as follows:

- 1.1. Nonbearing partitions where the required *fire-resistance rating* is 2 hours or less in Types I and II construction.
- 1.2. Nonbearing *exterior walls* where fire-resistance rated construction is not required in Types I and II construction.
- 1.3. Roof construction, including girders, trusses, framing and decking in Types I and II construction.

Exception: In buildings of Type IA construction exceeding two *stories* above *grade plane*, *fire-retardant-treated wood* is not permitted in roof construction where the vertical distance from the upper floor to the roof is less than 20 feet (6096 mm).

1.4 Within exterior wall assemblies for Type III construction where the fire-resistance rating of the wall assemblies are 2 hours or less.

1.5 Within exterior wall assemblies for Type IV construction where the fire-resistance rating of the wall assemblies are 2 hours or less and the thickness is not less than 6 inches.

2. In Type IV Construction, *Cross-laminated timber* complying with Section 2303.1.4 shall be permitted within exterior wall assemblies with a 2-hour rating or less, provided the exterior surface of the cross-laminated timber is protected by one the following:

- 2.1. *Fire retardant treated wood* sheathing complying with 2303.2 and not less than 15/32 inch (12 mm) thick;
- 2.2. *Gypsum board* not less than 1/2 inch (12.7 mm) thick; or
- 2.3. A noncombustible material.

3. Millwork such as doors, door frames, window sashes and frames.

4. Where not installed greater than 15 feet (4572 mm) above grade, show windows, nailing or furring strips and wooden bulkheads below show windows, including their frames, aprons and show cases.

5. In Types I, II, and III construction partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a *corridor* serving an *occupant load* of 30 or more shall be permitted to be constructed of *fire-retardant-treated wood*, 1-hour fire-resistance-rated construction or of wood panels or similar light construction up to 6 feet (1829 mm) in height.

6. Stages and platforms constructed in accordance with Sections 410.3 and 410.4, respectively.

7. Blocking such as for handrails, millwork, cabinets and window and door frames.

8. Mastics and caulking materials applied to provide flexible seals between components of *exterior wall* construction.

9. Heavy timber as permitted by Note c to Table 601 and Sections 602.1.4.5 and 1406.3.

10. Aggregates, component materials and admixtures as permitted by Section 703.2.2.

11. Sprayed fire-resistant materials and intumescent and mastic fire-resistant coatings, determined on the basis of *fire-resistance tests* in accordance with Section 703.2 and installed in accordance with Sections 1705.13 and 1705.14, respectively.

12. Materials used to protect penetrations in fire-resistance-rated assemblies in accordance with Section 714.

13. Wall construction of freezers and coolers of less than 1000 square feet (92.9 m²) in floor area, lined on both sides with noncombustible materials and the building is protected throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

Delete without substitution:

SECTION 603- COMBUSTIBLE MATERIAL IN TYPES I AND II CONSTRUCTION

603.1 Allowable materials. Combustible materials shall be permitted in buildings of Type I or II construction in the following applications and in accordance with Sections 603.1.1 through 603.1.3:

1. *Fire-retardant-treated wood* shall be permitted in:
 - 1.1. Nonbearing partitions where the required *fire-resistance rating* is 2 hours or less;
 - 1.2. Nonbearing *exterior walls* where fire-resistance-rated construction is not required;
 - 1.3. Roof construction, including girders, trusses, framing and decking.

Exception: In buildings of Type IA construction exceeding two *stories* above *grade plane*, *fire-retardant-treated wood* is not permitted in roof construction where the vertical distance from the upper floor to the roof is less than 20 feet (6096 mm).

- 2- Thermal and acoustical insulation, other than foam plastics, having a *flame spread index* of not more than 25-

Exceptions:

- 1- Insulation placed between two layers of noncombustible materials without an intervening airspace shall be allowed to have a *flame spread index* of not more than 100.
 - 2- Insulation installed between a finished floor and solid decking without intervening airspace shall be allowed to have a *flame spread index* of not more than 200.
- 3- Foam plastics in accordance with Chapter 26-
- 4- Roof coverings that have an A, B or C classification-
- 5- *Interior floor finish* and floor covering materials installed in accordance with Section 804-
- 6- Millwork such as doors, door frames, window sashes and frames-
- 7- *Interior wall and ceiling finishes* installed in accordance with Sections 801 and 803-
- 8- *Trim* installed in accordance with Section 806-
- 9- Where not installed greater than 15 feet (4572 mm) above grade, show windows, nailing or furring strips and wooden bulkheads below show windows, including their frames, aprons and show cases-
- 10- Finish flooring installed in accordance with Section 805-
- 11- Partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a *corridor* serving an *occupant load* of 30 or more shall be permitted to be constructed of *fire-retardant-treated wood*, 1-hour fire-resistance-rated construction or of wood panels or similar light construction up to 6 feet (1829 mm) in height-
- 12- Stages and platforms constructed in accordance with Sections 410.3 and 410.4, respectively-
- 13- Combustible *exterior wall coverings*, balconies and similar projections and bay or oriel windows in accordance with Chapter 14-
- 14- Blocking such as for handrails, millwork, cabinets and window and door frames-
- 15- Light transmitting plastics as permitted by Chapter 26-
- 16- Mastics and caulking materials applied to provide flexible seals between components of *exterior wall* construction-
- 17- Exterior plastic veneer installed in accordance with Section 2605.2-
- 18- Nailing or furring strips as permitted by Section 803.11-
- 19- Heavy timber as permitted by Note c to Table 601 and Sections 602.4.7 and 1406.3-
- 20- Aggregates, component materials and admixtures as permitted by Section 703.2.2-
- 21- Sprayed fire-resistant materials and intumescent and mastic fire-resistant coatings, determined on the basis of *fire-resistance* tests in accordance with Section 703.2 and installed in accordance with Sections 1705.14 and 1705.15, respectively-
- 22- Materials used to protect penetrations in fire-resistance-rated assemblies in accordance with Section 714-
- 23- Materials used to protect joints in fire-resistance-rated assemblies in accordance with Section 715-
- 24- Materials allowed in the concealed spaces of buildings of Types I and II construction in accordance with Section 718.5-
- 25- Materials exposed within plenums complying with Section 602 of the *International Mechanical Code*.-
- 26- Wall construction of freezers and coolers of less than 1,000 square feet (92.9 m²), in size, lined on both sides with noncombustible materials and the building is protected throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.-

603.1.1 Ducts. The use of nonmetallic ducts shall be permitted where installed in accordance with the limitations of the *International Mechanical Code*.-

603.1.2 Piping. The use of combustible piping materials shall be permitted where installed in accordance with the limitations of the *International Mechanical Code* and the *International Plumbing Code*.-

603.1.3 Electrical. The use of electrical wiring methods with combustible insulation, tubing, raceways and related components shall be permitted where installed in accordance with the limitations of this code.-

Reason: The purpose of this code change proposal is to remove the extraneous, unnecessary information from Chapter 6 that only serves to confuse users of this Code. Section 603 provides an incomplete laundry list of combustible materials that are allowed in Types I and II construction. However, Section 602.2 states that the building elements of buildings of Type I and II construction are required to be noncombustible except as permitted in Section 603, and elsewhere in this code. Of the 29 items listed in Section 603, only 12 of them are materials that could be components of the building elements in Table 601. The remaining materials listed are also discussed in detail in other parts of the code regarding the limitations of their use in various types of construction. For instance, roof coverings are listed in item no. 4, that have a Class A, B, or C classification. Section 1505 provides in detail where roof coverings of different classifications are required in various types of construction. Why then, is this provision contained in Section 603? Roof coverings are not part of a building element listed in Table 601. Item no. 4 in Section 603.1 tells the user of the code nothing. Are the items in Section 603 the only combustible materials allowed in Types I and II Construction? This is a frequently confused point. For instance, Photovoltaic Rooftop panels and modules are permitted, as stated in Section 1510. But they are not listed in Section 603. Are they therefore only allowed in Types III, IV, and V construction? With this in mind, Section 603 is proposed for deletion, and only the items in Section 603 that can be part of the structural elements in Table 601 are listed in Section 602.2. Cross laminated timber in Type IV Construction (existing Section 602.4.2) has been relocated to the new Section 602.2 as Item 2, with all the other allowable combustible materials for the construction of building elements.

Here are the items that are moved from Section 603 to Section 602.2 (both the existing Item number and the proposed new Item number are provided):

1. Fire-retardant-treated wood. (Item 1)
6. Millwork such as doors, door frames, window sashes and frames. (Item 3)
9. Where not installed greater than 15 feet (4572 mm) above grade, show windows, nailing or furring strips and wooden bulkheads below show windows, including their frames, aprons and show cases. (Item 4)
11. Partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a corridor serving an occupant load of 30 or more shall be permitted to be constructed of fire-retardant-treated wood, 1-hour fire-resistance-rated construction or of wood panels or similar light construction up to 6 feet (1829 mm) in height. (Item 5)
12. Stages and platforms constructed in accordance with Sections 410.3 and 410.4, respectively. (Item 6)
14. Blocking, such as for handrails, millwork, cabinets and window and door frames. (Item 7)
16. Mastics and caulking materials applied to provide flexible seals between components of exterior wall construction. (Item 8)
19. Heavy timber as permitted by Note c to Table 601 and Sections 602.4.7 and 1406.3. (Item 9)
20. Aggregates, component materials and admixtures as permitted by Section 703.2.2. (Item 10)
21. Sprayed fire-resistant materials and intumescent and mastic fire-resistant coatings, determined on the basis of fire-resistance tests in accordance with Section 703.2 and installed in accordance with Sections 1705.13 and 1705.14, respectively. (Item 11)
22. Materials used to protect penetrations in fire-resistance-rated assemblies in accordance with Section 714. (Item 12)
26. Wall construction of freezers and coolers of less than 1000 square feet (92.9 m²), in size, lined on both sides with noncombustible materials and the building is protected throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. (Item 13)

The remaining items are removed from this Chapter because they do not comprise parts of the elements listed in Table 601 and any limitations on their use in noncombustible

construction are provided elsewhere in the code:

2. Thermal and acoustical insulation: See Section 720.
3. Foam plastics: See Section 2603.
4. Roof coverings: See Chapter 15.
5. Interior floor finish and floor coverings: See Section 804.
7. Interior wall and ceiling finishes: See Sections 801 and 803.
8. Trim: See Section 806.
10. Finish flooring: See Section 805.
13. Combustible exterior wall coverings, balconies, and similar projections: See Section 1406.
15. Light-transmitting plastics: See Sections 2606- 2611.
17. Exterior plastic veneer: See Section 2605.2.
18. Nailing or furring strips: See Section 803.11.
23. Materials used to protect joints in fire-resistance rated assemblies: See Section 715.
24. Material in concealed spaces: See Section 718.5
25. Materials exposed within plenums: See Section 602 of the IMC

Cost Impact: Will not increase the cost of construction

The proposal attempts to clarify the code, but does not make any technical changes to code requirements.

G 170-15 : 602.4.1-KULIK4886

G 171-15

602.1, 602.1.1, 602.1.1.1 (New)

Proponent: Vickie Lovell, InterCode Incorporated, representing Fire Safe North America (vickie@intercodeinc.com)

2015 International Building Code

Revise as follows:

602.1 General. Buildings and structures erected or to be erected, altered or extended in height or area shall be classified in one of the five construction types defined in Sections 602.2 through 602.5. ~~The building elements shall have a fire-resistance rating not less than that specified in Table 601 and exterior walls shall have a fire-resistance rating not less than that specified in Table 602. Where required to have a fire-resistance rating by Table 601, building elements shall comply with the applicable provisions of Section 703.2. The protection of openings, ducts and air transfer openings in building elements shall not be required unless required by other provisions of this code.~~

602.1.1 Minimum requirements-Fire-resistance ratings ~~A-The building or portion thereof elements shall have a fire-resistance rating not less than that specified in Table 601 and exterior walls shall have a fire-resistance rating not less than that specified in Table 602. Where required to have a fire resistance rating by Table 601, building elements shall comply with the applicable provisions of Section 703.2. The protection of openings, ducts and air transfer openings in building elements shall not be required to conform to the details unless required by other provisions of a type of construction higher than that type which meets the minimum requirements based on occupancy even though certain features of such a building actually conform to a higher type of construction.~~ this code.

Add new text as follows:

602.1.1.1 Buildings in high risk areas. In Table 601 the building elements in multi-story buildings of construction Types IIB, IIIB and VB in Risk Categories III and IV identified in Table 1604.5 shall have a fire-resistance rating of not less than 1 hour where such buildings are any of the following:

1. Assigned to Seismic Design Category C or D in Table 1613.3.5(1).
2. Located in a flood hazard area established in accordance with Section 1612.3.
3. Located in a hurricane-prone region.

Reason: As hazard events, both naturally-occurring and man-made, are increasing in number and severity in the United States and around the world, the resilience of communities and the individual buildings within those communities is becoming of vital importance.

A National Institute of Building Sciences Publication (May, 2014) entitled "Moving Forward: Findings and Recommendations", states that "while a long history of building codes has laid the foundation for addressing the impacts of natural and man-made hazards, changes in the frequency and severity of events have brought new challenges — challenges requiring the engagement and support of policymakers. While building codes serve as the minimum requirements for life-safety in the building stock, basic life-safety protections do not fully address building performance requirements to achieve resilience."

Mitigation includes, among other things, fortifying buildings so that they are less likely to be severely damaged or completely destroyed during or immediately after a disaster. It is the key to recovery after a disaster. Mitigation allows individuals and communities to lessen post-disaster disruption and rebuild more quickly. States and cities have started implementing more stringent requirements in specific geographic areas they have designated as higher-risk. The purpose of this series of code changes proposed by Fire Safe North America is to encourage the debate in the code development process to identify what constitutes resilient buildings, and begin to identify issues that will become the basis for "new minimum requirements" for increased building resiliency.

Responding to the challenge of mitigating damage and resilient buildings is an admittedly complex topic. Fire Safe North America proposals are intended to reduce the total reliance of a community and its firefighters on automatic sprinkler systems in disaster-prone areas of the country where the water supply and/or power are likely to be interrupted, or are likely to have water supply system operational issues. The proposals, if approved, will fortify the building code requirements for the most vulnerable buildings to fire - Type IIB, IIIB, and VB construction, which are also classified as Risk Category III and IV in Table 1604.5, and in high-risk, disaster prone regions. The proposals modify the following code requirements in such buildings:

1. Reduce allowable area limits
2. Protect the path of egress by limiting travel distances
3. Protect the path of egress by protecting corridors
4. Require higher fire resistance ratings for occupancy separations
5. Require higher fire resistance ratings for building elements

These proposals are intended to be conservative so as to promote community resiliency and disaster mitigation by protecting essential buildings with both sprinkler protection AND fire resistance rated compartmentation. These proposals may be fairly considered to be the proverbial "belt-and suspenders" approach, requiring both sprinkler protection and increased fire resistance rated compartmentation in specific buildings in high risk areas for disasters.

Historically, the code has been written using the general assumption that automatic sprinklers will operate satisfactorily and there will be suitable power for such building operations. Code users design and build assuming that firefighters will be able to respond at their normal efficiencies. In some parts of the country, buildings impacted by disasters may remain without reliable water and/or power for a considerable period of time, well after the occurrence of the disaster. History has shown that increased incidents of fires after a disaster can be more destructive to life and property than the disaster itself. Total reliance on an uninterrupted power and water supply may not be an acceptable risk. It may also be an unacceptable risk to assume that firefighters will be able to respond at their normal efficiencies.

For example, more than 15% of the U.S. population lives in potential major earthquake areas. 41 states and territories have moderate to high risk. There is a real likelihood of power and water supplies being interrupted following a major seismic event, along with the potential for multiple simultaneous structure fires and also building-to-building fire spread. In October 17, 1989, a 7.1 earthquake in Santa Cruz Mountains was responsible for 26 fires in San Francisco, 60 miles from epicenter. There were 67 documented breaks in water mains which effectively eliminated water pressure in the area. On January 19, 1994, a 6.8 earthquake centered in Northridge, CA. There were approximately 100 fire ignitions, 30 to 50 of those were considered significant. The water supply systems in the area were damaged causing low pressure in water distribution. On January 17, 1995, a 6.8 (approx.) earthquake near Kobe, Japan caused 90 fires to start within minutes. 85 spread to adjacent buildings and 10 approached or reached conflagration status. 1,700 water line breaks occurred within a couple of hours. There were 7,000 buildings destroyed by fire alone.

In 1997, the Red River flooded Grand Forks, North Dakota, causing \$3.7 billion in flood losses, and displaced thousands of families and businesses. Similar data of increased fire incidents are available in other flood and hurricane-prone areas.

Undoubtedly, this will increase the cost of construction in these specific buildings. However, a recent FEMA's 2010 report "Mitigation's Value to Society" statement described how mitigation is an investment that needs to be made. A recent study by the NIBS Multihazard Mitigation Council (MMC) identified that each dollar spent on mitigation saves an average of \$4.00 in disaster recovery.

Links:

<http://www.dhss.ny.gov/oem/mitigation/documents/mitigations-value-to-society.pdf>

The two-volume NIBS MMC study report is available for free download at:

<http://www.nibs.org/index.php/mmc/projects/nhms>

Cost Impact: Will increase the cost of construction

This code change proposal will increase the cost of construction for some building types.

G 171-15 : 602.1-LOVELL5283

G 172-15

602.3

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

2015 International Building Code

Revise as follows:

602.3 Type III. Type III construction is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of any material permitted by this code. *Fire-retardant-treated wood* framing complying with Section 2303.2 shall be permitted within *exterior wall* assemblies of a 2-hour rating or less. Exterior walls complying with Section 602.4.2 or 602.4.8.2 shall be permitted.

Reason: Prior to the 2015 IBC, the requirements for exterior walls in Types III and IV construction were identical. They both permitted exterior walls to be of noncombustible material or to be of FRTW. The 2015 IBC now allows Cross-laminated timber, CLT, to also be used in those walls. The CLT is considered heavy timber in the 2015 IBC. So now, the Type III wall does not permit the three options of the Type IV wall. The 2015 code change created a difference that never existed and has no technical reason to continue to exist.

The exterior wall requirement for Type IV CLT walls are at least equivalent to what is currently required for FRTW exterior walls in Type III. This proposal will provide the same protection in Type III as is provided by exterior walls in Type IV construction. For a complete list of AWC code change proposals and additional information please go to <http://www.awc.org/Code-Officials/2015-IBC-Code-Changes>. For more information concerning CLT lumber and construction, please go to <http://www.rethinkwood.com/tall-wood-survey>.

Cost Impact: Will not increase the cost of construction

There is no increase in cost with this proposal as it just revises the protection requirements for Type II and Type IV construction identical.

G 172-15 : 602.3-TYREE4675

G 173-15

602.3

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

2015 International Building Code

Revise as follows:

602.3 Type III. Type III construction is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of any material permitted by this code. ~~Fire-retardant-treated wood framing~~ complying with Section 2303.2 shall be permitted within exterior wall assemblies of a 2-hour rating or less.

Reason: The term "framing" is not needed to understand the FRTW is permitted "within the exterior wall assemblies."

Cost Impact: Will not increase the cost of construction
There is no change in the requirements. It is only for clarification.

G 173-15 : 602.3-HOLLAND4215

G 174-15

602.4.1

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

2015 International Building Code

Revise as follows:

602.4.1 Fire-retardant-treated wood in exterior walls. *Fire-retardant-treated wood framing* complying with Section 2303.2 shall be permitted within exterior wall assemblies with a 2-hour rating or less.

Reason: The term "framing" is not needed to understand the FRTW is permitted "within the exterior wall assemblies."

Cost Impact: Will not increase the cost of construction
This is a clarification no change in construction costs.

G 174-15 : 602.4.1-HOLLAND4444

G 175-15

602.3, 602.4.1

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

2015 International Building Code

Revise as follows:

602.3 Type III. Type III construction is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of any material permitted by this code. *Fire-retardant-treated wood framing and sheathing* complying with Section 2303.2 shall be permitted within *exterior wall* assemblies of a 2-hour rating or less.

602.4.1 Fire-retardant-treated wood in exterior walls. *Fire-retardant-treated wood framing and sheathing* complying with Section 2303.2 shall be permitted within exterior wall assemblies with a 2-hour rating or less.

Reason: The word framing creates some confusion. some have interpreted that framing does not include the sheathing utilized for lateral resistance to be framing. This has resulted in at least one interpretation that the walls cannot have FRT structural wood panel framing and yet another interpretation that the structural wood panel is permitted to be installed but unlike the studs does not need to be FRT.

ASCE considers sheathing to be part of the framing system. The ICC ES has AQ for a product equivalent to FRT plywood for use on Type III construction.

The addition of sheathing clarifies wood framing and sheathing is permitted to be within the assembly if FRT.

Cost Impact: Will not increase the cost of construction

This code change does not create a new requirement. It clarifies existing code language to prevent misinterpretation of the code.

G 175-15 : 602.3-MAIEL4965

G 176-15

602.3, 602.4, 602.4.8

Proponent: Stephen Skalko, representing Masonry Alliance for Codes and Standards (svskalko@cox.net)

2015 International Building Code

Revise as follows:

602.3 Type III. Type III construction is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of any material permitted by this code. ~~Non-bearing. Fire-retardant-treated fire-retardant-treated wood~~ framing complying with Section 2303.2 shall be permitted within *exterior wall* assemblies of a 2-hour rating or less.

602.4 Type IV. Type IV construction (Heavy Timber, HT) is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of solid or laminated wood without concealed spaces. The details of Type IV construction shall comply with the provisions of this section and Section ~~2304.11~~. 2304.11. Non-bearing portions of Exterior walls complying with Section 602.4.1 or 602.4.2 shall be permitted. Minimum solid sawn nominal dimensions are required for structures built using Type IV construction (HT). For gluedlaminated members and structural composite lumber (SCL) members, the equivalent net finished width and depths corresponding to the minimum nominal width and depths of solid sawn lumber are required as specified in Table 602.4. *Cross-laminated timber* (CLT) dimensions used in this section are actual dimensions.

602.4.8 ~~Partitions~~Nonbearing partitions and walls. ~~Partitions~~Nonbearing partitions and walls shall comply with Section 602.4.8.1 or 602.4.8.2.

Reason: Changes to the building code that allow the use of fire retardant treated wood for Types III and IV construction and cross-laminated lumber for Type IV construction have reduced the clarity in the code that these two types of construction are required to have the exterior load-bearing portions of the structure to be noncombustible materials. This is evident by the requirements in the first sentence to both 602.3 Type III and 602.4 Type IV specifying exterior walls to be noncombustible materials. It is implied, but not as clear, by the language in the last sentence of 602.3 for Type III construction and in 602.4.1 and 602.4.2 of Type IV construction, where fire retardant treated wood and cross-laminated lumber are permitted to be used "within" the exterior wall. This term "within" indicates the combustible materials are permitted for use as a component in the exterior wall but the structural exterior wall is still required to be noncombustible.

Historically building construction types in older building codes and the previous legacy codes were described based on noncombustible and/or combustible materials utilized in the building structural elements. The construction types ranged from buildings with no combustible structural framing, to those with noncombustible exterior walls and some combustible structural framing on the interior of the building, to buildings where the majority of the structural framing was combustible. This concept of describing the building construction type based on these combinations of noncombustible and/or combustible materials is reflected in the types of construction found in the International Building Code.

Types I and II reflect the construction type where noncombustible materials are utilized. Types III and IV construction comprise construction types where the exterior walls are of noncombustible materials and the interior framing is wholly or partly of combustible materials. In the case of Type III construction the interior framing members may be nominal light frame wood members. For Type IV construction the interior wood members are expected to be of such size to be classified as heavy timber. Finally Type V construction in the code would be a building where structural elements, including bearing exterior walls are of combustible members such as nominal light frame wood members.

Further, this proposal coordinates with Section 603.1 where it currently outlines the limitations on the use of FRTW for Types I and II construction which are also based on exterior load-bearing portions of the structure being noncombustible materials. In subpart #1 of 603.1 it states the following:

"1. Fire-retardant-treated wood shall be permitted in:

1.1 Nonbearing partitions where the required fire-resistance rating is 2 hours or less.

1.2 Nonbearing exterior walls where fire-resistance-rated construction is not required...."

This change will make clear that the bearing portion of the exterior walls in Types III and IV construction must be noncombustible to qualify for that type of construction.

Cost Impact: Will not increase the cost of construction

There is no cost impact from this change. It only clarifies the intent of the existing code.

G 176-15 : 602.3-SKALKO5513

G 177-15

602.3

Proponent: Carl Wren, City of Austin, Texas, representing City of Austin, Texas; Planning and Development Review Department and the Austin Fire Department (carl.wren@austintexas.gov)

2015 International Building Code

Revise as follows:

602.3 Type III. Type III construction is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of any material permitted by this code. *Fire-retardant-treated wood* framing complying with Section 2303.2 shall be permitted where enclosed within exterior wall assemblies of a 2-hour rating or less. The required fire resistance shall be maintained and the exposed inner and outer faces of such exterior walls shall be noncombustible.

Reason: This jurisdiction has become aware of a lot of confusion as to what is required for the construction of a Type III exterior wall when the framing is fire retardant treated wood (FRTW). Some applicants have believed that the exterior wall could have FRTW plywood or OSB sheathing as the "noncombustible" exterior of the wall or that field applied ignition resistant coatings made wood sheathing noncombustible. Construction has been proposed where the FRTW plywood/OSB was to be applied directly to the FRTW framing and combustible siding installed on the exterior. These design approaches would potentially result in buildings up to 6 stories tall above the grade plane and as tall as 75-85 feet above the grade plane, without noncombustible and required fire resistive protection of the load bearing wall framing. These conditions are clearly contrary to the historical context of Type III wall construction and are at odds with the UBC source provision in section 503.4.3 of the 1997 UBC.

Bibliography: Uniform Building Code, International Conference of Building Officials/International Code Council, 1997 Edition, Section 503.4.3, Page 1-51

Cost Impact: Will not increase the cost of construction

The proponent is proposing that the code change is a clarification and not a new requirement and therefore should not result in increased costs for code compliant construction.

G 177-15 : 602.3-WREN5049

G 178-15

602.4

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

2015 International Building Code

Revise as follows:

602.4 Type IV. Type IV construction (Heavy Timber, ~~HT~~) is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of solid ~~or wood~~, laminated wood or structural composite lumber (SCL) without concealed spaces. The details of Type IV construction shall comply with the provisions of this section and Section 2304.11. Exterior walls complying with Section 602.4.1 or 602.4.2 shall be permitted. Minimum solid dimensions for building elements are as follows:

1. Solid sawn building elements shall be not less than the nominal dimensions are required for structures built using Type IV construction (HT) in Sections 602.4.3 through 602.4.6.

2. For ~~glued laminated~~ Glued-laminated members and structural composite lumber (SCL) members, members shall be the equivalent net finished width and ~~depths~~ depth corresponding to the minimum nominal width and ~~depths~~ depth of solid sawn lumber are required as specified in Table 602.4. ~~Cross-laminated~~

3. Cross-laminated timber (CLT) dimensions used in this section are actual dimensions and shall be not less than the dimensions required in Sections 602.4.6.2, 602.4.7, and 602.4.6.8.2, as applicable.

Reason:

In the last code cycle, the Heavy Timber section saw 5 code change proposals. The correlation of these changes was very difficult. We are submitting several changes which are intended to make this chapter more understandable. One of the issues to be clarified is the "minimum dimensions of the exterior walls. Another item is to make it absolutely clear that Structural Composite Lumber of the minimum dimensions for this chapter is, in fact, considered heavy timber. So this proposal will point the user to the proper sections to accomplish these tasks.

For a complete list of AWC code change proposals and additional information please go to <http://www.awc.org/Code-Officials/2015-IBC-Code-Changes>.

Cost Impact: Will not increase the cost of construction

This is an editorial rewrite and will have no cost impact other than to lower costs by making the minimum requirements more clear.

G 178-15 : 602.4-FRANCIS4679

G 179-15

602.4, TABLE 602.4, 602.4.1, 602.4.2, 602.4.3, 602.4.4, 602.4.5, 602.4.9, 2304.11, 2304.11.1, TABLE 2304.11.1.1, 2304.11.2, 2304.11.3, 602.4.8, 602.4.8.2, 602.4.8.1, 602.4.6, 602.4.6.2, 602.4.6.1, 2304.11.4, 2304.11.5, 602.4.7, 2304.11.4.2 (New)

Proponent: Dennis Richardson, representing American Wood Council

2015 International Building Code

Revise as follows:

602.4 Type IV. Type IV construction (~~Heavy Timber, HT~~) is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of solid or laminated ~~wood~~ heavy timber (HT), without concealed spaces. The minimum dimensions for permitted materials including solid timber, glued-laminated timber, structural composite lumber (SCL), and cross laminated timber (CLT) and details of Type IV construction shall comply with the provisions of this section and Section 2304.11. Exterior walls complying with Section 602.4.1 or 602.4.2 shall be permitted. Minimum solid sawn nominal dimensions are required for structures built using Type IV construction (HT). For glued-laminated members, interior walls and structural composite lumber (SCL) members, the equivalent net finished width and depths corresponding to the minimum nominal width and depths of solid sawn lumber are required as specified in Table 602.4, not less than one hour. Crossfire-resistance rating-laminated or heavy timber (CLT) dimensions used in this section are actual dimensions, conforming with Section 2304.11.2.2 shall be permitted.

602.4.1 Fire-retardant-treated wood in exterior walls. *Fire-retardant-treated wood* framing complying with Section 2303.2 shall be permitted within exterior wall assemblies not less than 6 inches (152 mm) in thickness with a 2-hour rating or less.

602.4.2 Cross-laminated timber in exterior walls. *Cross-laminated timber* complying with Section 2303.1.4 shall be permitted within exterior wall assemblies not less than 6 inches (152 mm) in thickness with a 2-hour rating or less, provided the exterior surface of the cross-laminated timber is protected by one the following:

1. *Fire-retardant-treated wood* sheathing complying with Section 2303.2 and not less than $1\frac{5}{32}$ inch (12 mm) thick;
2. *Gypsum board* not less than $\frac{1}{2}$ inch (12.7 mm) thick; or
3. A noncombustible material.

Delete without substitution:

602.4.3 Columns. Wood columns shall be sawn or glued laminated and shall be not less than 8 inches (203 mm), nominal, in any dimension where supporting floor loads and not less than 6 inches (152 mm) nominal in width and not less than 8 inches (203 mm) nominal in depth where supporting roof and ceiling loads only. Columns shall be continuous or superimposed and connected in an *approved* manner. Protection in accordance with Section 704.2 is not required.

602.4.4 Floor framing. Wood beams and girders shall be of sawn or glued laminated timber and shall be not less than 6 inches (152 mm) nominal in width and not less than 10 inches (254 mm) nominal in depth. Framed sawn or glued laminated timber arches, which spring from the floor line and support floor loads, shall be not less than 8 inches (203 mm) nominal in any dimension. Framed timber trusses supporting floor loads shall have members of not less than 8 inches (203 mm) nominal in any dimension.

602.4.5 Roof framing. Wood frame or glued laminated arches for roof construction, which spring from the floor line or from grade and do not support floor loads, shall have members not less than 6 inches (152 mm) nominal in width and have not less than 8 inches (203 mm) nominal in depth for the lower half of the height and not less than 6 inches (152 mm) nominal in depth for the upper half. Framed or glued laminated arches for roof construction that spring from the top of walls or wall abutments, framed timber trusses and other roof framing, which do not support floor loads, shall have members not less than 4 inches (102 mm) nominal in width and not less than 6 inches (152 mm) nominal in depth. Spaced members shall be permitted to be composed of two or more pieces not less than 3 inches (76 mm) nominal in thickness where blocked solidly throughout their intervening spaces or where spaces are tightly closed by a continuous wood cover plate of not less than 2 inches (51 mm) nominal in thickness secured to the underside of the members. Splice plates shall be not less than 3 inches (76 mm) nominal in thickness. Where protected by *approved* automatic sprinklers under the roof deck, framing members shall be not less than 3 inches (76 mm) nominal in width.

Revise as follows:

~~602.4.9~~ **602.4.3 Exterior structural members.** Where a horizontal separation of 20 feet (6096 mm) or more is provided, wood columns and arches conforming to heavy timber sizes complying with 2304.11 shall be permitted to be used externally.

2304.11 Heavy timber construction. Where a structure or, portion thereof is, or individual structural elements are required to be of ~~Type IV construction~~ heavy timber by other provisions of this code, the building elements therein shall comply with the applicable provisions of Sections 2304.11.1 through 2304.11.5. 2304.11.4. Minimum dimensions of heavy timber shall comply as applicable in Table 2304.11 based on roofs or floors supported and the configuration of each structural element, or as applicable in Sections 2304.11.2 through 2304.11.4.

2304.11.1 Columns ~~Details of heavy timber structural members.~~ Columns

Heavy timber structural members shall be continuous or superimposed throughout all stories by means of reinforced concrete or metal caps ~~detailed and constructed in accordance~~ with brackets, or shall be connected by properly designed steel or iron caps, with pintles and base plates, or by timber splice plates affixed to the columns by metal connectors housed within the contact faces, or by other *approved* methods. Sections 2304.11.1.1 through 2304.11.1.3.

2304.11.1.1 Column connections ~~Columns.~~ Minimum dimensions of columns shall be in accordance with Table 2304.11. Columns shall be continuous or superimposed throughout all stories and connected in an approved manner. Girders and beams at column connections shall be closely fitted around columns and adjoining ends shall be cross tied to each other, or intertied by caps or ties, to transfer horizontal loads across joints. Wood bolsters shall not be placed on tops of columns unless the columns support roof loads only. Where traditional heavy timber detailing is used, connections shall be permitted to be by means of reinforced concrete or metal caps with brackets, or shall be connected by properly designed steel or iron caps, with pintles and base plates, or by timber splice plates affixed to the columns by metal connectors housed within the contact faces, or by other approved methods.

~~2304.11.2~~**2304.11.1.2 Floor framing.** Minimum dimensions of floor framing shall be in accordance with Table 2304.11. *Approved* wall plate boxes or hangers shall be provided where wood beams, girders or trusses rest on masonry or concrete walls. Where intermediate beams are used to support a floor, they shall rest on top of girders, or shall be supported by ~~ledgers or blocks securely fastened to the sides of the girders, or they shall be supported by an approved metal hanger into which the ends of the beams shall be closely fitted.~~ *Where traditional heavy timber detailing is used, these connections shall be permitted to be supported by ledgers or blocks securely fastened to the sides of the girders.*

~~2304.11.3~~**2304.11.1.3 Roof framing.** Minimum dimensions of roof framing shall be in accordance with Table 2304.11. Every roof girder and at least every alternate roof beam shall be anchored to its supporting member; ~~and every monitor and every sawtooth construction shall be anchored to the main roof construction.~~ Such anchors shall consist of steel or iron bolts of sufficient strength to resist vertical uplift of the roof ~~forces as required in Chapter 16.~~

~~602.4.8.2~~**2304.11.2 Partitions and walls.** Partitions and walls shall comply with Section 602.4.8.1 ~~2304.11.2.1~~ or 602.4.8.2 ~~2304.11.2.2~~.

~~602.4.8.2~~**2304.11.2.1 Exterior walls.** Exterior walls shall ~~permitted to be of one of the following:~~

- ~~1. Noncombustible materials.~~
- ~~1. Not less than 6 inches (152 mm) in thickness and constructed of one of the following:~~
 - ~~1.1. Fire-retardant treated wood in accordance with Section 2303.2 and complying with Section 602.4.1.~~
 - ~~1.1. Cross-laminated timber complying with meeting the requirements of Section 602.4.2~~**2303.1.4.**

~~602.4.8.1~~**2304.11.2.2 Interior walls and partitions.** *No change to text.*

~~602.4.6.2~~**2304.11.3 Floors.** Floors shall be without concealed spaces. Wood floors shall be constructed in accordance with Section 602.4.6.1 ~~2304.11.3.1~~ or 602.4.6.2 ~~2304.11.3.2~~.

~~602.4.6.2~~**2304.11.3.1 Cross-laminated timber floors.** *Cross-laminated timber* shall be not less than 4 inches (102 mm) in actual thickness. *Cross-laminated timber* shall be continuous from support to support and mechanically fastened to one another. *Cross-laminated timber* shall be permitted to be connected to walls without a shrinkage gap providing swelling or shrinking is considered in the design. Corbelling of masonry walls under the floor shall be permitted to be used.

~~602.4.6.1~~**2304.11.3.2 Sawn or glued-laminated plank floors.** *No change to text.*

Delete without substitution:

~~2304.11.4 Floor decks.~~ Floor decks and covering shall not extend closer than $\frac{1}{2}$ inch (12.7 mm) to walls. Such $\frac{1}{2}$ inch (12.7 mm) spaces shall be covered by a molding fastened to the wall either above or below the floor and arranged such that the molding will not obstruct the expansion or contraction movements of the floor. Corbelling of masonry walls under floors is permitted in place of such molding.

Revise as follows:

~~2304.11.5~~**2304.11.4 Roof decks.** Roofs shall be without concealed spaces and roof decks shall be constructed in accordance with Section 2304.11.4.1 or 2304.11.4.2. Other types of decking shall be permitted to be used where equivalent fire resistance and structural properties are being provided. Where supported by a wall, roof decks shall be anchored to walls to resist ~~uplift forces determined in accordance with Chapter 16.~~ Such anchors shall consist of steel bolts, lags, screws or iron bolts approved hardware of sufficient strength to resist ~~vertical uplift of the roof~~ prescribed forces.

~~602.4.7~~**2304.11.4.1 Roofs**~~Cross-laminated timber roofs.~~ Roofs shall be without concealed spaces and wood roof decks shall be ~~sawn or glued laminated, splined or tongue-and-groove plank, not less than 2 inches (51 mm) nominal in thickness; $\frac{1}{8}$ inch thick (32 mm) wood structural panel (exterior glue); planks not less than 3 inches (76 mm) nominal in width, set on edge close together and laid as required for floors; or of cross-laminated timber.~~ Other types of decking shall be permitted to be used if providing equivalent fire resistance and structural properties.

Cross-laminated timber roofs shall be not less than 3 inches (76 mm) ~~nominal in~~ actual thickness and shall be continuous from support to support and mechanically fastened to one another.

Add new text as follows:

2304.11.4.2 Sawn, wood structural panel, or glued-laminated plank roofs.

Sawn, wood structural panel, or glued-laminated plank roofs shall be one of the following:

1. Sawn or glued laminated, splined or tongue-and-groove plank, not less than 2 inches (51 mm) nominal in thickness;
2. $\frac{1}{8}$ -inch-thick (32 mm) wood structural panel (exterior glue);
3. Planks not less than 3 inches (76 mm) nominal in width, set on edge close together and laid as required for floors.

Revise as follows:

TABLE 2304.11
WOOD-MEMBER SIZE EQUIVALENCIES**MINIMUM DIMENSIONS OF HEAVY TIMBER STRUCTURAL MEMBERS**

		MINIMUM NOMINAL SOLID SAWN SIZE		MINIMUM GLUED-LAMINATED NET SIZE		MINIMUM STRUCTURAL COMPOSITE LUMBER NET SIZE	
<u>Supporting</u>	<u>Heavy Timber Structural Element</u>	Width, inch	Depth, inch	Width, inch	Depth, inch	Width, inch	Depth, inch

<u>Floor loads only or combined floor and roof loads</u>	<u>Columns:</u> <u>Framed sawn or glued-laminated timber arches which spring from the floor line;</u> <u>Framed timber trusses</u>	8	8	$6\frac{3}{4}$	$8\frac{1}{4}$	7	$7\frac{1}{2}$
	<u>Wood beams and girders</u>	6	10	5	$10\frac{1}{2}$	$5\frac{1}{4}$	$9\frac{1}{2}$
<u>Roof loads only</u>	<u>Columns (roof and ceiling loads):</u> <u>Lower half of: Wood-frame or glued-laminated arches which spring from the floor line or from grade</u>	6	8	5	$8\frac{1}{4}$	$5\frac{1}{4}$	$7\frac{1}{2}$
	<u>Upper half of: Wood-frame or glued-laminated arches which spring from the floor line or from grade</u>	6	6	5	6	$5\frac{1}{4}$	$5\frac{1}{2}$
	<u>Framed timber trusses and other roof framing;^a</u> <u>Framed or glued-laminated arches that spring from the top of walls or wall abutments</u>	$4\frac{1}{2}$	6	$3\frac{1}{2}$	$6\frac{7}{8}$	$3\frac{1}{2}\frac{1}{2}$	$5\frac{1}{2}$

For SI: 1 inch = 25.4 mm.

^a Spaced members shall be permitted to be composed of two or more pieces not less than 3 inches (76 mm) nominal in thickness where blocked solidly throughout their intervening spaces or where spaces are tightly closed by a continuous wood cover plate of not less than 2 inches (51 mm) nominal in thickness secured to the underside of the members. Splice lates shall be not less than 3 inches (76 mm) nominal in thickness.

^b Where protected by approved automatic sprinklers under the roof deck, framing members shall be not less than 3 inches (76 mm) nominal in width.

Reason: The cross laminated timber product standard was approved in the 2015 IBC in addition to a code change allowing this material to be utilized for the construction of 2 hour exterior walls in type IV-HT construction.

Cross Laminated Timber has been manufactured for over 30 years in Europe and has just recently caught hold on the American Continent where some major structures are under way in Canada and smaller buildings are being built in the US. In Europe buildings of 8 to 10 stories and above are regularly constructed. The following link gives examples of CLT buildings throughout the world. <http://www.rethinkwood.com/tall-wood-survey>

Because of the high level of carbon sequestration and low embodied energy, it is anticipated there will be a renewed interest in the use of type IV heavy timber as a type of construction. One bit of feedback American Wood Council received after CLT was approved in the 2015 IBC was the observation from one building department that the heavy timber and type IV provisions are confusing, sometimes redundant and spread across different sections of the building code.

This code change is an attempt to address that concern without making any change in the substance of the requirements. Currently type IV construction and heavy timber requirements are found in Sections 602.4 and 2304.11 of the IBC. The clean up and reorganization of those sections is part one of this effort. Part two is the identification and update of many references to type IV construction and heavy timber found throughout the code.

In order to pare down Section 602.4, only the provisions specific to type IV construction remain along with a list of the types of materials found in heavy timber and the reference to the requirements for those materials in Section 2304.11. Requirements specific to type IV remain in 602.4.

Section 2304.11 can best be described as "all things heavy timber". Heavy timber structural elements have long been referenced throughout other parts of the code where a specific heavy timber structural element is detailed for use incorporated in another type of construction. The most general example of this is table 601 footnote c allowing the use of heavy timber roof construction in place of one hour fire resistance rated roof construction in types IB, II, IIIA, and VA construction. The design professional may detail heavy timber as the roof structure and assembly for these different types of construction and they are treated as building elements but the type of construction for the overall structure does not change from the type IB, II, IIIA, or VA.

Heavy timber requirements removed from Section 602.4 are combined and organized with the existing content of Section 2304. Table 602.4 is moved and renamed Table 2304.11. It is updated with information placing a description of the elements that are applicable for a given size timber element based on whether the element supports roof loads and floor loads or only roof loads. Specific footnotes about the size and protection of spaced truss elements and the reduction of roof beam width for sprinklers are noted where applicable.

The non-size related detailing provisions for framing members and connections (columns, floor framing and roof framing) are coalesced into Sections 2304.11.1.1, 2304.11.1.2 and 2304.11.1.3. All of the information in table 2304.11 and the following sections are organized so that the most pertinent information for most designs is found first.

Finally, some of the detailing provisions for traditional heavy timber are identified as such and relocated later in each section while some other information that is archaic and better replaced by reference is removed. A good example of this is the removal of the requirement for the anchorage of "every monitor and every sawtooth construction" to the main roof construction in Section 2304.11.3. New Section 2304.11.1.3 requires roof girders and alternate roof beams to be anchored to their supports as required by Chapter 16. Finally, Sections 2304.11.2 through 2304.11.4 contain pertinent thickness and detailing requirements for walls, roof and floor deck construction.

The following table gives a more detailed description of where specific requirements are moved.

Since this change is intended not to create any new requirements or delete pertinent content, there are other code changes which contain specific code changes to this information. It is intended this code change will serve as a template for the relocation of those other specific changes through the correlation process should other specific changes be approved.

Part 2 of this effort follows with the change to specific code references to: Section 602.4, type IV construction, heavy timber and Section 2304.11.

The following link provides access to additional information regarding this or other code changes proposed by American Wood Council.

<http://www.awc.org/Code-Officials/2015-IBC-Code-Changes/>

Section in 2015 IBC	Location in proposed change	Comments
602.4 Type IV	602.4 (same location)	modified to direct users to new section on heavy timber details; retains essentials for Type IV construction
Table 602.4	Table 2304.11	additional content is added describing the thickness of structural elements based on loading and configuration from 602.4.3 through 602.4.5
602.4.1 Fire-retardant treated wood in exterior walls, and 602.4.2 Cross-laminated timber in exterior walls	602.4.1 and 602.4.2 (same location)	thickness of wall assembly added from 602.4.8.2 item 2.
602.4.3 Columns	2304.11, Table 2304.11, and Section 2304.11.1.1	requirements combined with existing 2304.11.1 Columns; dimensions in new Table 2304.11.1
602.4.4 Floor framing	2304.11, Table 2304.11	
602.4.5 Roof framing	2304.11, Table 2304.11	
602.4.6 Floors	2304.11.3	
602.4.6.1 Sawn or glued-laminated plank floors	2304.11.3.2	the end of proposed Section 2304.11.3.2 comes from current 2304.11.2
602.4.6.2 Cross-laminated timber floors	2304.11.3.1	
602.4.7 Roofs	2304.11.4 and subsections 2304.11.4.1 and 2304.11.4.2	the current provisions of current section 2304.11.5 are folded into these sections
602.4.8 Partitions and walls and subsections 602.4.8.1 Interior walls and partitions and 602.4.8.2 Exterior walls	602.4 for exterior wall thickness in type IV; heavy timber in 2304.11.2 2304.11.2.1 and 2304.11.2.2	kept essentials for a Type IV building in 602.4; essentials for heavy timber in proposed section 2304.11.2
602.4.9 Exterior structural members	602.4.3	Unchanged but references proposed heavy timber section
2304.11 Heavy timber construction	2304.11 (same location)	Modified to become charging language for all heavy timber, not just Type IV construction; adds

		charging language for proposed Table 2304.11
2304.11.1 Columns	2304.11.1.1	new section 2304.11.1.1 combines current sections 2304.11.1 and 2304.11.1.1; updates text to be more design focused; retains traditional details
2304.11.1.1 Column connections	2304.11.1.1	incorporated in 2304.11.1
2304.11.2 Floor framing	2304.11.1.2	modifies text to make lesser-used methods a permitted option
2304.11.3 Roof framing	2304.11.1.3	modifies text to refer to design for all forces, not just uplift, archaic language deleted
2304.11.4 Floor decks	2304.11.3.2	current text appears at the end of the proposed section with hardware choices updated; this section incorporates requirements for floors moved from Chapter 6
2304.11.5 Roof decks	2304.11.4	current text appears at end of proposed section, and updates language to reflect current methods and to include consideration of all forces

Cost Impact: Will not increase the cost of construction

Since this is a reorganization of existing requirements, not the creation of new requirements, this code change will not increase the cost of construction.

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406.7.2, TABLE 601, 603.1, 705.2.3, 803.3, 803.13.3, 1406.3, [BG] 1510.2.5, [BG] 1510.3, 3105.3, D102.2.8, 803.1

Proponent: Dennis Richardson, American Wood Council, representing American Wood Council (drichardson@awc.org)

2015 International Building Code

Revise as follows:

406.7.2 Canopies. Canopies under which fuels are dispensed shall have a clear, unobstructed height of not less than 13 feet 6 inches (4115 mm) to the lowest projecting element in the vehicle drive-through area. Canopies and their supports over pumps shall be of noncombustible materials, *fire-retardant-treated wood* complying with Chapter 23, ~~wood of Type IV sizes~~ heavy timber complying with Section 2304.11 or of construction providing 1-hour *fire resistance*. Combustible materials used in or on a *canopy* shall comply with one of the following:

1. Shielded from the pumps by a noncombustible element of the *canopy*, or ~~wood of Type IV sizes~~ heavy timber complying with Section 2304.11;
2. Plastics covered by aluminum facing having a thickness of not less than 0.010 inch (0.30 mm) or corrosion-resistant steel having a base metal thickness of not less than 0.016 inch (0.41 mm). The plastic shall have a *flame spread index* of 25 or less and a smoke-developed index of 450 or less when tested in the form intended for use in accordance with ASTM E 84 or UL 723 and a self-ignition temperature of 650°F (343°C) or greater when tested in accordance with ASTM D 1929; or
3. Panels constructed of light-transmitting plastic materials shall be permitted to be installed in *canopies* erected over motor vehicle fuel-dispensing station fuel dispensers, provided the panels are located not less than 10 feet (3048 mm) from any building on the same *lot* and face *yards* or streets not less than 40 feet (12 192 mm) in width on the other sides. The aggregate areas of plastics shall be not greater than 1,000 square feet (93 m²). The maximum area of any individual panel shall be not greater than 100 square feet (9.3 m²).

TABLE 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A	B	A	B	HT	A	B
Primary structural frame ^f (see Section 202)	3 ^a	2 ^a	1	0	1	0	HT	1	0
Bearing walls	3	2	1	0	2	2	2	1	0
Exterior ^{e, f}	3 ^a	2 ^a	1	0	1	0	1/HT	1	0
Interior									
Nonbearing walls and partitions	See Table 602								
Exterior									
Nonbearing walls and partitions	0	0	0	0	0	0	See Section 602.4.6 <u>2304.11.2</u>	0	0
Interior ^d									
Floor construction and associated secondary members (see Section 202)	2	2	1	0	1	0	HT	1	0
Roof construction and associated secondary members (see Section 202)	1 ¹ / 2 ^b	1 ^{b,c}	1 ^{b,c}	0 ^c	1 ^{b,c}	0	HT	1 ^{b,c}	0

For SI: 1 foot = 304.8 mm.

- a. Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.
- b. Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.
- c. In all occupancies, heavy timber complying with Section 2304.11 shall be allowed where a 1-hour or less fire-resistance rating is required.
- d. Not less than the fire-resistance rating required by other sections of this code.
- e. Not less than the fire-resistance rating based on fire separation distance (see Table 602).
- f. Not less than the fire-resistance rating as referenced in Section 704.10.

603.1 Allowable materials. Combustible materials shall be permitted in buildings of Type I or II construction in the following applications and in accordance with Sections 603.1.1 through 603.1.3:

1. *Fire-retardant-treated wood* shall be permitted in:
 - 1.1. Nonbearing partitions where the required *fire-resistance rating* is 2 hours or less.
 - 1.2. Nonbearing *exterior walls* where fire-resistance-rated construction is not required.
 - 1.3. Roof construction, including girders, trusses, framing and decking.

Exception: In buildings of Type IA construction exceeding two *stories abovegrade plane*, *fire-retardant-treated wood* is not permitted in roof construction where the vertical distance from the upper floor to the roof is less than 20 feet (6096 mm).
2. Thermal and acoustical insulation, other than foam plastics, having a *flame spread index* of not more than 25.

Exceptions:

 1. Insulation placed between two layers of noncombustible materials without an intervening airspace shall be allowed to have a *flame spread index* of not more than 100.
 2. Insulation installed between a finished floor and solid decking without intervening airspace shall be allowed to have a *flame spread index* of not more than 200.
3. Foam plastics in accordance with Chapter 26.
4. Roof coverings that have an A, B or C classification.
5. *Interior floor finish* and floor covering materials installed in accordance with Section 804.
6. Millwork such as doors, door frames, window sashes and frames.
7. *Interior wall and ceiling finishes* installed in accordance with Sections 801 and 803.
8. *Trim* installed in accordance with Section 806.
9. Where not installed greater than 15 feet (4572 mm) above grade, show windows, nailing or furring strips and wooden bulkheads below show windows, including their frames, aprons and show cases.
10. Finish flooring installed in accordance with Section 805.
11. Partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a *corridor* serving an *occupant load* of 30 or more shall be permitted to be constructed of *fire-retardant-treated wood*, 1-hour fire-resistance-rated construction or of wood panels or similar light construction up to 6 feet (1829 mm) in height.
12. Stages and platforms constructed in accordance with Sections 410.3 and 410.4, respectively.
13. Combustible *exterior wallcoverings*, balconies and similar projections and bay or oriel windows in accordance with Chapter 14.
14. Blocking such as for handrails, millwork, cabinets and window and door frames.
15. Light-transmitting plastics as permitted by Chapter 26.
16. Mastics and caulking materials applied to provide flexible seals between components of *exterior wall* construction.
17. Exterior plastic veneer installed in accordance with Section 2605.2.
18. Nailing or furring strips as permitted by Section 803.11.
19. Heavy timber as permitted by Note c to Table 601 and Sections ~~602.4.7~~602.4.3 and 1406.3.
20. Aggregates, component materials and admixtures as permitted by Section 703.2.2.
21. Sprayed fire-resistant materials and intumescent and mastic fire-resistant coatings, determined on the basis of *fire resistance* tests in accordance with Section 703.2 and installed in accordance with Sections 1705.14 and 1705.15, respectively.
22. Materials used to protect penetrations in fire-resistance-rated assemblies in accordance with Section 714.
23. Materials used to protect joints in fire-resistance-rated assemblies in accordance with Section 715.
24. Materials allowed in the concealed spaces of buildings of Types I and II construction in accordance with Section 718.5.
25. Materials exposed within plenums complying with Section 602 of the *International Mechanical Code*.
26. Wall construction of freezers and coolers of less than 1,000 square feet (92.9 m²), in size, lined on both sides with noncombustible materials and the building is protected throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

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 heavy timber~~ construction complying with Section 2304.11, fire-retardant-treated wood or as required by Section 1406.3.

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).

803.3 Heavy timber exemption. Exposed portions of building elements complying with the requirements for buildings of ~~Type IV heavy timber~~ construction in Section 602.4 or Section 2304.11 shall not be subject to *interior finish* requirements.

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 heavy timber~~ construction in Sections 602.4.2 or 2304.11 or to wood furring strips applied directly to the wood decking or planking shall be fireblocked as specified in Section 803.13.1.1.

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 heavy timber~~ construction in accordance with Section ~~602.4~~2304.11. 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.

[BG] 1510.2.5 Type of construction. Penthouses shall be constructed with walls, floors and roofs as required for the type of construction of the building on which such penthouses are built.

Exceptions:

1. On buildings of Type I construction, the exterior walls and roofs of penthouses with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating. The exterior walls and roofs of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall not be required to have a fire-resistance rating.
2. On buildings of Type I construction two stories or less in height above grade plane or of Type II construction, the exterior walls and roofs of penthouses with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating or a lesser fire-resistance rating as required by Table 602 and be constructed of fire-retardant-treated wood. The exterior walls and roofs of penthouses with a *fire separation distance* of 20 feet (6096 mm) or greater shall be permitted to be constructed of fire-retardant-treated wood and shall not be required to have a fire-resistance rating. Interior framing and walls shall be permitted to be constructed of fire-retardant-treated wood.
3. On buildings of Type III, IV or V construction, the exterior walls of penthouses with a fire separation distance greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating or a lesser fire-resistance rating as required by Table 602. On buildings of Type III, IV or VA construction, the exterior walls of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall be permitted to be of ~~Type IV~~ heavy timber construction complying with Sections 602.4 and 2304.11 or noncombustible construction or fire-retardant-treated wood and shall not be required to have a fire-resistance rating.

[BG] 1510.3 Tanks. Tanks having a capacity of more than 500 gallons (1893 L) located on the roof deck of a building shall be supported on masonry, reinforced concrete, steel or ~~Type IV~~ heavy timber construction complying with Section 2304.11 provided that, where such supports are located in the building above the lowest story, the support shall be fire-resistance rated as required for Type IA construction.

3105.3 Design and construction. *Awnings* and *canopies* shall be designed and constructed to withstand wind or other lateral loads and live loads as required by Chapter 16 with due allowance for shape, open construction and similar features that relieve the pressures or loads. Structural members shall be protected to prevent deterioration. *Awnings* shall have frames of noncombustible material, *fire-retardant-treated wood*, ~~wood of Type IV~~ size heavy timber complying with Section 2304.11, or 1-hour construction with combustible or noncombustible covers and shall be either fixed, retractable, folding or collapsible.

D102.2.8 Permanent canopies. Permanent canopies are permitted to extend over adjacent open spaces provided all of the following are met:

1. The canopy and its supports shall be of noncombustible material, *fire-retardant-treated wood*, ~~Type IV construction~~ heavy timber complying with Section 2304.11 or of 1-hour fire-resistance-rated construction.
Exception: Any textile covering for the canopy shall be flame resistant as determined by tests conducted in accordance with NFPA 701 after both accelerated water leaching and accelerated weathering.
2. Any canopy covering, other than textiles, shall have a *flame spread index* not greater than 25 when tested in accordance with ASTM E 84 or UL 723 in the form intended for use.
3. The canopy shall have at least one long side open.
4. The maximum horizontal width of the canopy shall not exceed 15 feet (4572 mm).
5. The *fire resistance* of *exterior walls* shall not be reduced.

2015 International Fire Code

803.1 General. The provisions of this section shall limit the allowable fire performance and smoke development of interior wall and ceiling finishes and interior wall and ceiling trim in existing buildings based on location and occupancy classification. Interior wall and ceiling finishes shall be classified in accordance with Section 803 of the *International Building Code*. Such materials shall be grouped in accordance with ASTM E 84, as indicated in Section 803.1.1, or in accordance with NFPA 286, as indicated in Section 803.1.2.

Exceptions:

1. Materials having a thickness less than 0.036 inch (0.9 mm) applied directly to the surface of walls and ceilings.
2. Exposed portions of structural members complying with the requirements of ~~buildings of Type IV construction~~ heavy timber in accordance with the *International Building Code* shall not be subject to interior finish requirements.

Reason: This code change is part 2 of a proposal to reorganize Type IV Section 602.4 and heavy timber section 2304.11. This part of the change includes references found throughout the IBC to either: Type IV construction, Section 602.4, Section 2304.11, or "heavy timber". This change should follow directly after the 602.4 change and the reason for the change is included in that reason statement.

The references found in this part are generally changed to Type IV or Section 602.4 when the section of the code is referring to the type of construction associated with a structure. The references are generally changed to "heavy timber complying with Section 2304.11" when the code is referring to a heavy timber element found in a building of another type of construction. This change is a reorganization of two sections and is not intended to change the intent of the code.

Cost Impact: Will not increase the cost of construction

Since this is a reorganization of existing requirements, not the creation of new requirements, this code change will not increase the cost of construction.

G 181-15

602.4, 602.4.6, 602.4.7, 602.4.10 (New)

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

2015 International Building Code

Revise as follows:

602.4 Type IV. Type IV construction (Heavy Timber, HT) is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of solid or laminated wood without concealed spaces or with concealed spaces meeting the requirements of Section 602.4.10. The details of Type IV construction shall comply with the provisions of this section and Section 2304.11. Exterior walls complying with Section 602.4.1 or 602.4.2 shall be permitted. Minimum solid sawn nominal dimensions are required for structures built using Type IV construction (HT). For gluedlaminated members and structural composite lumber (SCL) members, the equivalent net finished width and depths corresponding to the minimum nominal width and depths of solid sawn lumber are required as specified in Table 602.4. *Cross-laminated timber* (CLT) dimensions used in this section are actual dimensions.

602.4.6 Floors. Floors shall be without concealed spaces or with concealed spaces meeting the requirements of Section 602.4.10. Wood floors shall be constructed in accordance with Section 602.4.6.1 or 602.4.6.2.

602.4.7 Roofs. Roofs shall be without concealed spaces ~~and wood~~ or with concealed spaces meeting the requirements of Section 602.4.10. Wood roof decks shall be sawn or glued laminated, splined or tongue-and-groove plank, not less than 2 inches (51 mm) nominal in thickness; 1¹/₈-inch-thick (32 mm) wood structural panel (exterior glue); planks not less than 3 inches (76 mm) nominal in width, set on edge close together and laid as required for floors; or of cross-laminated timber. Other types of decking shall be permitted to be used if providing equivalent fire resistance and structural properties.

Cross-laminated timber roofs shall be not less than 3 inches (76 mm) nominal in thickness and shall be continuous from support to support and mechanically fastened to one another.

Add new text as follows:

602.4.10 Concealed spaces Concealed spaces shall not contain combustibles other than building elements and electrical, mechanical, fire protection, or plumbing materials and equipment, shall comply with all applicable provisions of Section 718, and in addition shall be protected in accordance with at least one, or any combination, of the following:

1. The building is sprinklered throughout and automatic sprinklers are also provided in the concealed space.
2. The concealed space shall be filled completely with noncombustible insulation.
3. The concealed space shall be lined continuously with a noncombustible material, not less than 1/2-inch gypsum board, or equivalent.

Exception: Concealed spaces within 1-hour fire resistance rated interior walls and partitions in accordance with Section 602.4.8.1 shall not require additional protection.

Reason: The option of having protected concealed spaces in Type IV buildings is important to encourage the adaptive re-use of existing heavy timber buildings as well as to provide for the installation of mechanicals in Type IV cross laminated timber (CLT) construction. In addition to the current requirements for all concealed spaces in combustible construction, this change would require additional protection of the concealed spaces with sprinkler coverage, or eliminating all air space with noncombustible insulation, or covering all combustible surfaces with noncombustible materials or gypsum. If sprinkler protection is chosen, the entire building must be protected by sprinklers. Additional information related to the proposal may be posted at: <http://www.awc.org/Code-Officials/2015-IBC-Code-Changes/>

Cost Impact: Will not increase the cost of construction

The code change provides the option of having protected concealed spaces in Type IV buildings, therefore does not increase the cost of construction.

G 181-15 : 602.4-COATS4032

G 182-15

602.4.2, 602.4.8.2

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

2015 International Building Code

Revise as follows:

602.4.2 Cross-laminated timber in exterior walls. *Cross-laminated timber* complying with Section 2303.1.4, and associated glued laminated timber and structural composite lumber elements that are rated as required for the wall, shall be permitted within exterior wall assemblies with a 2-hour rating or less, provided the exterior surface of the cross-laminated timber ~~is~~ and associated elements are protected by one the following:

1. *Fire-retardant-treated wood* sheathing complying with Section 2303.2 and not less than $1\frac{5}{32}$ inch (12 mm) thick;
2. *Gypsum board* not less than $\frac{1}{2}$ inch (12.7 mm) thick; or
3. A noncombustible material.

602.4.8.2 Exterior walls. Exterior walls shall be of one of the following:

1. Noncombustible materials.
2. Not less than 6 inches (152 mm) in thickness and constructed of one of the following:
 - 2.1. *Fire-retardant-treated wood* in accordance with Section 2303.2 and complying with Section 602.4.1.
 - 2.2. *Cross-laminated timber and associated elements* complying with Section 602.4.2.

Reason: Reason: The code currently does not recognize that no member of glued laminated or SCL wood of heavy timber dimensions may be used as a beam, header, column or other member within a wall of CLT which is, itself, considered to be heavy timber. It seems rather obvious that a heavy timber element may be used within the construction of a wall of heavy timber construction. This change is intended to place into the code that which may seem obvious.

For a complete list of AWC code change proposals and additional information please go to <http://www.awc.org/Code-Officials/2015-IBC-Code-Changes>. For more information concerning CLT lumber and construction, please go to <http://www.rethinkwood.com/tall-wood-survey>.

Cost Impact: Will not increase the cost of construction

No increase in construction costs as proposal only clarifies the intent of the code.

G 182-15 : 602.4.2-TYREE4642

G 183-15

602.4.8.2

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

2015 International Building Code

Revise as follows:

602.4.8.2 Exterior walls. Exterior walls shall be of one of the following:

1. Noncombustible materials.

~~2. Not less than 6 inches (152 mm) in thickness and constructed of one of the following:~~

~~2.1. 2. Fire-retardant-treated wood~~ in accordance with Section 2303.2 and complying with Section 602.4.1.

~~2.2. 3. Cross-laminated timber~~ complying with Section 602.4.2 ~~not less than 6 inches (152mm) in thickness.~~

Reason: Prior to the 2015 code there was no mandate to erect a wall constructed with FRTW to be at least 6 inches thick. This provision was added when the membership included cross laminated timber (CLT) to type four construction.

No justification was submitted to explain the rationale behind the 6-inch requirement for FRTW. FRTW has been allowed in Type IV building under the UBC since the late 1960's and the IBC since its inception. We are not aware of any problems. The change to the 2015 code will make any wall constructed before the 2015 code with 2X4 studs nonconforming.

The wall load and fire resistance requirements in the code will dictate how the wall is to be constructed. A minimum thickness is not needed.

Cost Impact: Will not increase the cost of construction

Could save on the construction costs.

G 183-15 : 602.4.8.2-HOLLAND4421

G 184-15

602.4.8.2

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

2015 International Building Code

602.4.8.2 Exterior walls. Exterior walls shall be of one of the following:

1. Noncombustible materials.

~~2. Not less than 6 inches (152 mm) in thickness and constructed of one of the following:~~

~~2.1 2. Fire-retardant-treated wood~~ in accordance with Section 2303.2 and complying with Section 602.4.1.

~~2.2 3. Cross-laminated timber not less than 4 inches in thickness and~~ complying with Section 602.4.2.

Reason: When these provisions were introduced into the code in the last cycle, an overall wall thickness was deemed to be desirable. However, FRTW has performed suitably without an overall wall thickness requirement and the thickness of CLT will be driven by the required fire resistance rating and structural requirements. Citing an overall wall thickness is confusing and unnecessary, but the actual minimum thickness of the CLT is perhaps useful. Therefore we are proposing to delete the overall thickness of the wall in favor of citing an associated minimum CLT thickness, which requires a re-organization of the section.

When the original code section was developed, an overall thickness of 6 inches was proposed. It included the interior gypsum board (5/8 in.), the exterior gypsum board (5/8 in.) the exterior insulation (?? in.), the exterior cladding (3/4 in.). Thus, the overall thickness included at least 2 inches of non-CLT materials not even counting the insulation which would be required by the energy code. Subtracting the 2 inches of non-CLT material leaves 4 inches of CLT as a minimum dimension. This is completely consistent with the 6 inch requirement from the 2015 IBC. Of course, for a structure of more than 2 stories or which requires a 2 hr. FRR wall, the net dimension will still need to be greater than 6 inches, overall, to achieve the fire resistance rating and the structural capacity. Generally, the structural requirements will exceed this minimum number. But having such a number is necessary to insure the integrity of such a building.

Cost Impact: Will not increase the cost of construction

this change is not a substantive change and thus will not impact costs.

G 184-15 : 602.4.8.2-FRANCIS5409

G 185-15

603.1

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

2015 International Building Code

Revise as follows:

603.1 Allowable materials.

Combustible materials shall be permitted in buildings of Type I or II construction in the following applications and in accordance with Sections 603.1.1 through 603.1.3:

1. *Fire-retardant-treated wood* shall be permitted in:
 - 1.1. Nonbearing partitions where the required *fire-resistance rating* is 2 hours or less.
 - 1.2. Nonbearing *exterior walls* where fire-resistance-rated construction is not required.
 - 1.3. Roof construction, including girders, trusses, framing and decking.

Exception: In buildings of Type IA construction exceeding two *stories abovegrade plane*, *fire-retardant-treated wood* is not permitted in roof construction where the vertical distance from the upper floor to the roof is less than 20 feet (6096 mm).
 - 1.4. Balconies, porches, decks and exterior stairways not used as required exits on buildings three stories or less above grade plane.
2. Thermal and acoustical insulation, other than foam plastics, having a *flame spread index* of not more than 25.

Exceptions:

 1. Insulation placed between two layers of noncombustible materials without an intervening airspace shall be allowed to have a *flame spread index* of not more than 100.
 2. Insulation installed between a finished floor and solid decking without intervening airspace shall be allowed to have a *flame spread index* of not more than 200.
3. Foam plastics in accordance with Chapter 26.
4. Roof coverings that have an A, B or C classification.
5. *Interior floor finish* and floor covering materials installed in accordance with Section 804.
6. Millwork such as doors, door frames, window sashes and frames.
7. *Interior wall and ceiling finishes* installed in accordance with Sections 801 and 803.
8. *Trim* installed in accordance with Section 806.
9. Where not installed greater than 15 feet (4572 mm) above grade, show windows, nailing or furring strips and wooden bulkheads below show windows, including their frames, aprons and show cases.
10. Finish flooring installed in accordance with Section 805.
11. Partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a *corridor* serving an *occupant load* of 30 or more shall be permitted to be constructed of *fire-retardant-treated wood*, 1-hour fire-resistance-rated construction or of wood panels or similar light construction up to 6 feet (1829 mm) in height.
12. Stages and platforms constructed in accordance with Sections 410.3 and 410.4, respectively.
13. Combustible ~~*exterior wall coverings*~~ *coverings*, balconies and similar projections and bay or oriel windows in accordance with Chapter 14.
14. Blocking such as for handrails, millwork, cabinets and window and door frames.
15. Light-transmitting plastics as permitted by Chapter 26.
16. Mastics and caulking materials applied to provide flexible seals between components of *exterior wall* construction.
17. Exterior plastic veneer installed in accordance with Section 2605.2.
18. Nailing or furring strips as permitted by Section 803.11.
19. Heavy timber as permitted by Note c to Table 601 and Sections 602.4.7 and 1406.3.
20. Aggregates, component materials and admixtures as permitted by Section 703.2.2.
21. Sprayed fire-resistant materials and intumescent and mastic fire-resistant coatings, determined on the basis of *fire resistance* tests in accordance with Section 703.2 and installed in accordance with Sections 1705.14 and 1705.15, respectively.
22. Materials used to protect penetrations in fire-resistance-rated assemblies in accordance with Section 714.
23. Materials used to protect joints in fire-resistance-rated assemblies in accordance with Section 715.
24. Materials allowed in the concealed spaces of buildings of Types I and II construction in accordance with Section 718.5.
25. Materials exposed within plenums complying with Section 602 of the *International Mechanical Code*.
26. Wall construction of freezers and coolers of less than 1,000 square feet (92.9 m²), in size, lined on both sides with noncombustible materials and the building is protected throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

Reason: The addition of Sub Section 1.4 is warranted to include the requirements of Section 1406.3, Exception 1 in here.

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

G 185-15 : 603.1-MAIEL3437

G 186-15

1203.2 (New), 1203.2

Proponent: Mike Fischer, Kellen Company, representing the Ventilation Task Force of the Asphalt Roofing Manufacturers Association and the Center for the Polyurethanes Industry of the American Chemistry Council (mfischer@kellencompany.com)

2015 International Building Code

Add new text as follows:

1203.2 Roof ventilation Roof assemblies shall be ventilated in accordance with this section or shall meet the unvented attic or unvented enclosed rafter assembly requirements of Section 1203.3.

Revise as follows:

~~1203.2~~**1203.2.1 Ventilation required-Ventilated attics and rafter spaces.** *No change to text.*

Reason: The current code requirements for ventilated and unvented attics create an exception without clear direction. For example, 1203.2 includes mandatory ventilation provisions, but the unvented attic requirements aren't established as an exception to the ventilation requirements. The intent of introducing the unvented attic requirements into the code was to provide comprehensive provisions that replace the ventilation requirements as an optional path to address moisture concerns when the building thermal envelope is located at the roof assembly. This proposal clears up the ambiguity by indicating that there are two options available; ventilate the attic according to the code, or meet the detailed requirements for unvented attic spaces.

Cost Impact: Will not increase the cost of construction

The proposal is a clarification of existing requirements; it includes no technical changes to the code.

G 186-15 : 1203.2-FISCHER4003

Proponent: Joseph Lstiburek, representing self (joe@buildingscience.com)

2015 International Building Code

Revise as follows:

1203.3 Unvented attic and unvented enclosed rafter assemblies. Unvented *attics* and unvented enclosed roof framing assemblies created by ceilings applied directly to the underside of the roof framing members/rafters and the structural roof sheathing at the top of the roof framing members shall be permitted where all the following conditions are met:

1. The unvented *attic* space is completely within the *building thermal envelope*.
2. No interior Class I vapor retarders are installed on the ceiling side (*attic* floor) of the unvented *attic* assembly or on the ceiling side of the unvented enclosed roof framing assembly.
3. Where wood shingles or shakes are used, a minimum ¹/₄-inch (6.4 mm) vented airspace separates the shingles or shakes and the roofing underlayment above the structural sheathing.
4. In Climate Zones 5, 6, 7 and 8, any air-impermeable insulation shall be a Class II vapor retarder or shall have a Class II vapor retarder coating or covering in direct contact with the underside of the insulation.
5. Insulation shall be located in accordance with the following:
 - 5.1. Item 5.1.1, 5.1.2, 5.1.3 or 5.1.4 shall be met, depending on the air permeability of the insulation directly under the structural roof sheathing.
 - 5.1.1. Where only air-impermeable insulation is provided, it shall be applied in direct contact with the underside of the structural roof sheathing.
 - 5.1.2. Where air-permeable insulation is provided inside the building thermal envelope, it shall be installed in accordance with Item 5.1. In addition to the air-permeable insulation installed directly below the structural sheathing, rigid board or sheet insulation shall be installed directly above the structural roof sheathing in accordance with the R values in Table 1203.3 for condensation control.
 - 5.1.3. Where both air-impermeable and air-permeable insulation are provided, the *air-impermeable insulation* shall be applied in direct contact with the underside of the structural roof sheathing in accordance with Item 5.1.1 and shall be in accordance with the R values in Table 1203.3 for condensation control. The *air-permeable insulation* shall be installed directly under the *air-impermeable insulation*.
 - 5.1.4. Alternatively, sufficient rigid board or sheet insulation shall be installed directly above the structural roof sheathing to maintain the monthly average temperature of the underside of the structural roof sheathing above 45°F (7°C). For calculation purposes, an interior air temperature of 68°F (20°C) is assumed and the exterior air temperature is assumed to be the monthly average outside air temperature of the three coldest months.
 - 5.2. Where preformed insulation board is used as the ~~air-impermeable~~*air-permeable* ~~insulation~~ layer, it shall be sealed at the perimeter of each individual sheet interior surface to form a continuous layer.

Exceptions:

1. Section 1203.3 does not apply to special use structures or enclosures such as swimming pool enclosures, data processing centers, hospitals or art galleries.
2. Section 1203.3 does not apply to enclosures in Climate Zones 5 through 8 that are humidified beyond 35 percent during the three coldest months.

Reason: This is a technical error - arising from a typo or transcription error in the original proposal - the section should refer to air-impermeable insulation not air-permeable insulation.

There is no cost impact. This is an editorial correction.

Cost Impact: Will not increase the cost of construction

This is an editorial change correcting an error in the original code change. There is no cost impact.

G 188-15

TABLE 1203.3

Proponent: Joseph Lstiburek, representing self (joe@buildingscience.com)

2015 International Building Code

Revise as follows:

TABLE 1203.3
INSULATION FOR CONDENSATION CONTROL

CLIMATE ZONE	MINIMUM R-VALUE OF AIR-IMPERMEABLE INSULATION ^a
2B and 3B tile roof only	0 (none required)
1, 2A, 2B, 3A, 3B ^b , 3C	R-5 (none required)
4C	R-10
4A, 4B	R-15
5	R-20
6	R-25
7	R-30
8	R-35

a. Contributes to, but does not supersede, thermal resistance requirements for attic and roof assemblies in Section C402.2.1 of the *International Energy Conservation Code*.

b. In climate zones 3A, 3B and 3C where air-permeable insulation is provided and applied in direct contact with the underside of the structural sheathing, it shall be a Class II vapor retarder, or shall have a Class II vapor retarder coating or covering in direct contact with the underside of the insulation.

Reason: This significantly reduces the cost of constructing unvented attics. It allows the use of cellulose and fiberglass insulation.

Cost Impact: Will not increase the cost of construction
This will significantly reduce the cost of construction

G 188-15 : T1203.3-LSTIBUREK5443

G 189-15

1203.4, 1203.4.1, 1203.4.1.1 (New), 1203.4.1.2 (New), 1203.4.2 (New), 1203.4.3 (New), 1203.4.3.1 (New), 1203.4.3.2 (New), 1203.4.2

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

2015 International Building Code

Revise as follows:

1203.4 Under-floor ventilation. The space between the bottom of the floor joists and the earth under any building except spaces occupied by basements or cellars shall be provided with ventilation ~~openings through foundation walls or exterior walls. Such openings shall be placed so as to provide cross ventilation of the under-floor space in accordance with Sections 1203.4.1, 1203.4.2 and 1203.4.3.~~

1203.4.1 Openings for under-floor ventilation-Ventilation openings. ~~Ventilation openings through foundation walls shall be provided. The openings shall be placed so as to provide cross ventilation of the under-floor space.~~ The net area of ventilation openings shall be ~~not less than 1 square foot for each 150 square feet (0.67 m² for each 100 m²) of crawl-space area in accordance with Section 1203.4.1.1 or 1203.4.1.2.~~ Ventilation openings shall be covered for their height and width with any of the following materials, provided that the least dimension of the covering shall be not greater than ¹/₄ inch (6.4 mm):

1. Perforated sheet metal plates not less than 0.070 inch (1.8 mm) thick.
2. Expanded sheet metal plates not less than 0.047 inch (1.2 mm) thick.
3. Cast-iron grilles or gratings.
4. Extruded load-bearing vents.
5. Hardware cloth of 0.035-inch (0.89 mm) wire or heavier.
6. Corrosion-resistant wire mesh, with the least dimension not greater than ¹/₈ inch (3.2 mm).
7. Operable louvers, where ventilation is provided in accordance with Section 1203.4.1.2.

For buildings in flood hazard areas as established in Section 1612.3, the openings for under-floor ventilation shall be designed and installed in accordance with ASCE 24.

1203.4.1.1 Ventilation area for crawl spaces with open earth floors. The net area of ventilation openings for crawl spaces with uncovered earth floors shall be not less than 1 square foot for each 150 square feet (0.67 m² for each 100 m²) of crawl-space area.

1203.4.1.2 Ventilation area for crawl spaces with covered floors. The net area of ventilation openings for crawl spaces with the ground surface covered with a Class I vapor retarder shall be not less than 1 square foot for each 1500 square feet (0.67 m² for each 1000 m²) of crawl-space area.

1203.4.2 Ventilation in cold climates. In extremely cold climates, where ventilation opening will cause a detrimental loss of energy, ventilation openings to the interior of the structure shall be provided.

1203.4.3 Mechanical ventilation. Mechanical ventilation shall be provided to crawl spaces where the ground surface is covered with a Class I vapor retarder. Ventilation shall be in accordance with Section 1203.4.3.1 or 1203.4.3.2.

1203.4.3.1 Continuous mechanical ventilation. Continuously operated mechanical ventilation shall be provided at a rate of 1.0 cubic foot per minute (cfm) for each 50 square feet (1.02 L/s for each 10 m²) of crawl space ground surface area and the ground surface is covered with a Class I vapor retarder.

1203.4.3.2 Conditioned space. The crawl space shall be conditioned in accordance with the *International Mechanical Code* and the walls of the crawl space shall be insulated in accordance with the *International Energy Conservation Code*.

1203.4.2 Exceptions. The following are exceptions to Sections 1203.4 and 1203.4.1:

- 1- ~~Where warranted by climatic conditions, ventilation openings to the outdoors are not required if ventilation openings to the interior are provided.~~
- 2- ~~The total area of ventilation openings is permitted to be reduced to ¹/_{1,500} of the under-floor area where the ground surface is covered with a Class I vapor retarder material and the required openings are placed so as to provide cross ventilation of the space. The installation of operable louvers shall not be prohibited.~~
- 3- ~~Ventilation openings are not required where continuously operated mechanical ventilation is provided at a rate of 1.0 cubic foot per minute (cfm) for each 50 square feet (1.02 L/s for each 10 m²) of crawlspace floor area and the ground surface is covered with a Class I vapor retarder.~~
- 4- ~~Ventilation openings are not required where the ground surface is covered with a Class I vapor retarder, the perimeter walls are insulated and the space is conditioned in accordance with the *International Energy Conservation Code*.~~
- 5- ~~For buildings in flood hazard areas as established in Section 1612.3, the openings for under-floor ventilation shall be deemed as meeting the flood opening requirements of ASCE 24 provided that the ventilation openings are designed and installed in accordance with ASCE 24.~~

Reason: The purpose of this code change proposal is to organize Section 1203.4 into a logical format, and to change the code requirements related to the option presented by Section 1203.4.2, Exception 4. That exception allows for ventilation of a crawl space with a Class I vapor retarder covering the ground when the space is insulated and conditioned in accordance with the IECC. This is a problem because the IECC does not provide any requirements for conditioning. Since space conditioning requirements for conditioning are given in the IMC, the reference was modified to this section. This public proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

Cost Impact: Will not increase the cost of construction

Will not increase the cost of construction. The revisions are for clarification of the technical requirements and making reference to the appropriate I-code.

G 189-15 : 1203.4-KULIK5032

G 190-15

1207.2, 1207.3

Proponent: David Tyree, representing American Wood Council (dtyree@awc.org); Jason Smart (jsmart@awc.org); Kenneth Bland (kbland@awc.org); Sam Francis (sfrancis@awc.org); Bradford Douglas (bdouglas@awc.org)

2015 International Building Code

Revise as follows:

1207.2 Air-borne sound. Walls, partitions and floor/ceiling assemblies separating *dwelling units* and *sleeping units* from each other or from public or service areas shall have a sound transmission class of not less than 50, or not less than 45 if field tested, for air-borne noise when tested in accordance with ASTM E 90. Alternatively, the sound transmission class of walls, partitions and floor/ceiling assemblies shall be established by engineering analysis based on a comparison of walls, partitions and floor/ceiling assemblies having sound transmission class ratings as determined by the test procedures set forth in ASTM E 90. Penetrations or openings in construction assemblies for piping; electrical devices; recessed cabinets; bathtubs; soffits; or heating, ventilating or exhaust ducts shall be sealed, lined, insulated or otherwise treated to maintain the required ratings. This requirement shall not apply to entrance doors; however, such doors shall be tight fitting to the frame and sill.

1207.3 Structure-borne sound. Floor/ceiling assemblies between *dwelling units* and *sleeping units* or between a *dwelling unit* or *sleeping unit* and a public or service area within the structure shall have an impact insulation class rating of not less than 50, or not less than 45 if field tested, when tested in accordance with ASTM E 492. Alternatively, the impact insulation class of floor/ceiling assemblies shall be established by engineering analysis based on a comparison of floor/ceiling assemblies having impact insulation class ratings as determined by the test procedures set forth in ASTM E492.

Reason: Reason: The proposed performance alternative recognizes the current practice of STC and IIC interpolation based on data from testing performed in accordance with ASTM E90 and ASTM E492. It mirrors provisions of Section 703.3, which provides a similar engineering analysis alternative for establishing fire resistance ratings, thereby providing flexibility for designers. For a complete list of AWC code change proposals and additional information please go to <http://www.awc.org/Code-Officials/2015-IBC-Code-Changes>.

Cost Impact: Will not increase the cost of construction

This proposal does not increase the cost of construction as it only recognizes the use of ASTM E90 and E492.

G 190-15 : 1207.2-TYREE4803

G 191-15

202 (New), 1208.3, 1208.4

Proponent: Lee Kranz, representing Washington Association of Building Officials Technical Code Development Committee (lkranz@bellevuewa.gov)

2015 International Building Code

Add new definition as follows:

SECTION 202 DEFINITIONS

DWELLING UNIT, EFFICIENCY A dwelling unit containing not more than one habitable room.

Revise as follows:

1208.3 Room area. Every *dwelling unit* shall have no fewer than one room that shall have not less than 120 square feet (13.9 m²) of *net floor area*. Other habitable rooms shall have a *net floor area* of not less than 70 square feet (6.5 m²). Efficiency dwelling units shall be in accordance with Section 1208.4.

Exception: Kitchens are not required to be of a minimum floor area.

1208.4 Efficiency dwelling units. An efficiency ~~living~~dwelling unit shall conform to the requirements of the code except as modified herein:

1. The unit shall have a living room of not less than 220 square feet (20.4 m²) of floor area. An additional 100 square feet (9.3 m²) of floor area shall be provided for each occupant of such unit in excess of two.
2. The unit shall be provided with a separate closet.
3. The unit shall be provided with a kitchen sink, cooking appliance and refrigeration facilities, each having a clear working space of not less than 30 inches (762 mm) in front. Light and *ventilation* conforming to this code shall be provided.
4. The unit shall be provided with a separate bathroom containing a water closet, lavatory and bathtub or shower.

Reason: The current provisions of Section 1208.4 have no purpose in the building code because the scoping of these provisions depends on what is meant by "efficiency dwelling unit". Absent a clear definition of what an Efficiency Dwelling Unit (EDU) is in the building code there is no way to enforce the efficiency dwelling unit provisions found in IBC Section 1208.4. "Efficiency dwelling unit" is not a commonly used term, but our understanding is that it is what is more commonly called a studio apartment.

According to Section 1208.3, dwelling units may consist of a single room of 120 square feet. For example, this could be a single 10' X 12' room. This is not an acceptable amount of space for a dwelling unit. This code change will require that at least one room of not less than 220 square feet be provided in dwelling units containing only a single habitable room. It will also require a separate closet, bathroom, kitchen sink, a cooking appliance, & a refrigerator as well as the application of light and ventilation regulations.

Cost Impact: Will not increase the cost of construction

This code change adds a definition to clarify what an efficiency dwelling unit is and does not change the cost to construction.

G 191-15 : 1208.3-KRANZ3736

G 192-15

Part I:

2701.1

Part II:

[M] 2801.1

Part III:

[P] 2901.1

THIS IS A 3 PART CODE CHANGE PROPOSAL. PART I WILL BE HEARD THE THE IBC GENERAL COMMITTEE, PART II WILL BE HEARD BY THE IMC COMMITTEE AND PART III WILL BE HEARD BY THE IPC/IPSDC COMMITTEE. PLEASE SEE THE TENTATIVE HEARING ORDERS FOR THE RESPECTIVE COMMITTEES.

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

Part I

2015 International Building Code

Revise as follows:

2701.1 Scope. ~~This~~ The provisions of this chapter governs and NFPA 70 shall govern the design, construction, erection, and installation of the electrical components, appliances, equipment and systems used in buildings and structures covered by this code. ~~Electrical~~ The International Fire Code, the International Property Maintenance Code, and NFPA 70 shall govern the use and maintenance of electrical components, appliances, equipment and systems shall be designed. The International Existing Building Code and constructed in accordance with the provisions of NFPA 70 shall govern the alteration, repair, relocation, replacement, and addition of electrical components, appliances, equipment and systems.

Part II

2015 International Building Code

Revise as follows:

[M] 2801.1 Scope. ~~Mechanical appliances, equipment~~

The provisions of this chapter and systems shall be constructed, installed and maintained in accordance with the International Mechanical Code and the International Fuel Gas Code shall govern the design, construction, erection and installation of mechanical appliances, equipment and systems used in buildings and structures covered by this code. Masonry chimneys, fireplaces and barbecues shall comply with the *International Mechanical Code* and Chapter 21 of this code. The International Fire Code, the International Property Maintenance Code, the International Mechanical Code and the International Fuel Gas Code shall govern the use and maintenance of mechanical components, appliances, equipment and systems. The International Existing Building Code, the International Mechanical Code and the International Fuel Gas Code shall govern the alteration, repair, relocation, replacement, and addition of mechanical components, appliances, equipment and systems.

Part III

2015 International Building Code

Revise as follows:

[P] 2901.1 Scope. The provisions of this chapter and the International Plumbing Code shall govern the design construction, erection, and installation, alteration, repairs, relocation, replacement, addition to, use or maintenance of plumbing components, appliances, equipment and systems used in buildings and structures covered by this code. Toilet and bathing rooms shall be constructed in accordance with Section 1210- ~~Plumbing systems and equipment shall be constructed, installed and maintained in accordance with the International Plumbing Code.~~ Private sewage disposal systems shall conform to the *International Private Sewage Disposal Code*. The International Fire Code, the International Property Maintenance Code, and the International Plumbing Code shall govern the use and maintenance of plumbing components, appliances, equipment and systems. The International Existing Building Code and the International Plumbing Code shall govern the alteration, repair, relocation, replacement, and addition of plumbing components, appliances, equipment and systems.

Reason: This proposal provides consistency in the scoping for the Electrical, Plumbing, and Mechanical chapters. Direction is provided as to what codes govern use and maintenance, and alteration, repair, relocation, replacement and additions for existing electrical, plumbing, and mechanical systems.

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

Cost Impact:

Part I: Will not increase the cost of construction

This proposal will not increase the cost of construction. This proposal may decrease the cost of construction, by providing clarity to the scoping of these chapters.

Part II: Will not increase the cost of construction

This proposal will not increase the cost of construction. This proposal may decrease the cost of construction, by providing clarity to the scoping of these chapters.

Part III: Will not increase the cost of construction

This proposal will not increase the cost of construction. This proposal may decrease the cost of construction, by providing clarity to the scoping of these chapters.

G 193-15

2901, [P] 2901.1, 2902, [P] 2902.1, [P] TABLE 2902.1, [P] 2902.1.1, [P] 2902.1.2, [P] 2902.2, [P] 2902.2.1, [P] 2902.3, [P] 2902.3.1, [P] 2902.3.2, [P] 2902.3.3, [P] 2902.3.4, [P] 2902.3.5, [P] 2902.3.6, [P] 2902.4, [P] 2902.4.1, [P] 2902.5, [P] 2902.6

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

2015 International Building Code

Delete without substitution:

CHAPTER 29 PLUMBING SYSTEMS

SECTION 2901- GENERAL

~~[P] 2901.1 Scope.~~ The provisions of this chapter and the *International Plumbing Code* shall govern the erection, installation, ~~alteration~~, repairs, relocation, replacement, addition to, use or maintenance of plumbing equipment and systems. Toilet and bathing rooms shall be constructed in accordance with Section 1210. Plumbing systems and equipment shall be constructed, installed and maintained in accordance with the *International Plumbing Code*. Private sewage disposal systems shall conform to the *International Private Sewage Disposal Code*.

SECTION 2902- MINIMUM PLUMBING FACILITIES

TABLE 2902.1
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES* (See Sections 2902.1.1 and 2902.2)

No.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (URINALS SEE SECTION 419.2 OF THE INTERNATIONAL PLUMBING CODE)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING- FOUNTAINS- (SEE SECTION 410 OF THE INTERNATIONAL PLUMBING CODE)	OTHER
				Male	Female	Male	Female			
1	Assembly (continued)	A-1 st	Theaters and other buildings for the performing arts and motion pictures	1 per 125	1 per 65	1 per 200		—	1 per 500	1 service sink
		A-2 nd	Nightclubs, bars, taverns, dance halls and buildings for similar purposes	1 per 40	1 per 40	1 per 75		—	1 per 500	1 service sink
			Restaurants, banquet halls and food courts	1 per 75	1 per 75	1 per 200		—	1 per 500	1 service sink
			Auditoriums without permanent seating, art galleries, exhibition halls, museums, lecture halls, libraries, arcades and gymnasiums	1 per 125	1 per 65	1 per 200		—	1 per 500	1 service sink

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No.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (URINALS SEE SECTION 419.2 OF THE INTERNATIONAL PLUMBING CODE)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAINS (SEE SECTION 410 OF THE INTERNATIONAL PLUMBING CODE)	OTHER
				Male	Female	Male	Female			
1	Assembly	A-4	Coliseums, arenas, skating rinks, pools and tennis courts for indoor sporting events and activities	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 for the first 1,520 and 1 per 60 for the remainder exceeding 1,520	1 per 200	1 per 150	—	1 per 1,000	1 service sink
		A-5	Stadiums, amusement parks, bleachers and grandstands for outdoor sporting events and activities	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 for the first 1,520 and 1 per 60 for the remainder exceeding 1,520	1 per 200	1 per 150	—	1 per 1,000	1 service sink

2	Business	B	Buildings for the transaction of business; professional services; other services involving merchandise; office buildings; banks; light industrial and similar uses	1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50	1 per 40 for the first 80 and 1 per 80 for the remainder exceeding 80	—	1 per 100	1 service sink ^e
3	Educational	E	Educational facilities	1 per 50	1 per 50	—	1 per 100	1 service sink
4	Factory and industrial	F-1 and F-2	Structures in which occupants are engaged in work fabricating; assembly or processing of products or materials	1 per 100	1 per 100	See Section 411 of the <i>International Plumbing Code</i>	1 per 400	1 service sink
5	Institutional	I-1	Residential care	1 per 10	1 per 10	1 per 8	1 per 100	1 service sink
		I-2	Hospitals; ambulatory nursing home care recipient ^b	1 per room ^c	1 per room ^c	1 per 15	1 per 100	1 service sink
		-	Employees; other than residential care ^b	1 per 25	1 per 35	—	1 per 100	—
		-	Visitors; other than residential care	1 per 75	1 per 100	—	1 per 500	—
		I-3	Prisons ^b	1 per cell	1 per cell	1 per 15	1 per 100	1 service sink
		I-3	Reformatories; detention centers and correctional centers ^b	1 per 15	1 per 15	1 per 15	1 per 100	1 service sink
		-	Employees ^b	1 per 25	1 per 35	—	1 per 100	—
		I-4	Adult day care and child day care	1 per 15	1 per 15	1	1 per 100	1 service sink

No.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (URINALS SEE SECTION 419.2 OF THE INTERNATIONAL PLUMBING CODE)		LAVATORIES		BATHTUBS OR SHOWERS	DRINKING FOUNTAINS (SEE SECTION 410 OF THE INTERNATIONAL PLUMBING CODE)	OTHER
				Male	Female	Male	Female			
6	Mercantile	M	Retail stores; service stations; shops; salesrooms; markets and shopping centers	1 per 500		1 per 750		—	1 per 1,000	1 service sink*
7	Residential	R-1	Hotels, motels; boarding houses (transient)	1 per sleeping unit		1 per sleeping unit		1 per sleeping unit	—	1 service sink
		R-2	Dormitories; fraternities; sororities and boarding houses (not transient)	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		R-2	Apartment house	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per 20 dwelling units
		R-3	One and two-family dwellings and lodging houses with five or fewer guest rooms	1 per dwelling unit		1 per 10		1 per dwelling unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per dwelling unit
		R-3	Congregate living facilities with 16 or fewer persons	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink

		R-4	Congregate living facilities with 16 or fewer persons	1 per 10	1 per 10	1 per 8	1 per 100	1 service sink
8	Storage	S-1 S-2	Structures for the storage of goods, warehouses, storehouses and freight depots, low and moderate hazard	1 per 100	1 per 100	See Section 411 of the <i>International Plumbing Code</i>	1 per 1,000	1 service sink

a.—The fixtures shown are based on one fixture being the minimum required for the number of persons indicated or any fraction of the number of persons indicated. The number of occupants shall be determined by this code.

b.—Toilet facilities for employees shall be separate from facilities for inmates or care recipients.

c.—A single occupant toilet room with one water closet and one lavatory serving not more than two adjacent patient *sleeping units* shall be permitted, provided that each patient *sleeping unit* has direct access to the toilet room and provisions for privacy for the toilet room user are provided.

d.—The occupant load for seasonal outdoor seating and entertainment areas shall be included when determining the minimum number of facilities required.

e.—For business and mercantile occupancies with an occupant load of 15 or fewer, service sinks shall not be required.

[P] 2902.1 Minimum number of fixtures. Plumbing fixtures shall be provided in the minimum number as shown in Table 2902.1 based on the actual use of the building or space. Uses not shown in Table 2902.1 shall be considered individually by the code official. The number of occupants shall be determined by this code.

[P] 2902.1.1 Fixture calculations. To determine the *occupant load* of each sex, the total *occupant load* shall be divided in half. To determine the required number of fixtures, the fixture ratio or ratios for each fixture type shall be applied to the *occupant load* of each sex in accordance with Table 2902.1. Fractional numbers resulting from applying the fixture ratios of Table 2902.1 shall be rounded up to the next whole number. For calculations involving multiple occupancies, such fractional numbers for each occupancy shall first be summed and then rounded up to the next whole number.

Exception: The total *occupant load* shall not be required to be divided in half where *approved* statistical data indicate a distribution of the sexes of other than 50 percent of each sex.

[P] 2902.1.2 Family or assisted-use toilet and bath fixtures. Fixtures located within family or assisted-use toilet and bathing rooms required by Section 1109.2.1 are permitted to be included in the number of required fixtures for either the male or female occupants in assembly and mercantile occupancies.

[P] 2902.2 Separate facilities. Where plumbing fixtures are required, separate facilities shall be provided for each sex.

Exceptions:

1. Separate facilities shall not be required for *dwelling units* and *sleeping units*.
2. Separate facilities shall not be required in structures or tenant spaces with a total *occupant load*, including both employees and customers, of 15 or fewer.
3. Separate facilities shall not be required in mercantile occupancies in which the maximum occupant load is 100 or less.

[P] 2902.2.1 Family or assisted-use toilet facilities serving as separate facilities. Where a building or tenant space requires a separate toilet facility for each sex and each toilet facility is required to have only one water closet, two family or assisted-use toilet facilities shall be permitted to serve as the required separate facilities. Family or assisted-use toilet facilities shall not be required to be identified for exclusive use by either sex as required by Section 2902.4.

[P] 2902.3 Employee and public toilet facilities. Customers, patrons and visitors shall be provided with public toilet facilities in structures and tenant spaces intended for public utilization. The number of plumbing fixtures located within the required toilet facilities shall be provided in accordance with Section 2902.1 for all users. Employees shall be provided with toilet facilities in all occupancies. Employee toilet facilities shall be either separate or combined employee and public toilet facilities.

Exception: Public toilet facilities shall not be required in:

1. Open or enclosed parking garages where there are no parking attendants.
2. Structures and tenant spaces intended for quick transactions, including takeout, pickup and drop-off, having a public access area less than or equal to 300 square feet (28 m²).

[P] 2902.3.1 Access. The route to the public toilet facilities required by Section 2902.3 shall not pass through kitchens, storage rooms or closets. Access to the required facilities shall be from within the building or from the exterior of the building. Routes shall comply with the accessibility requirements of this code. The public shall have access to the required toilet facilities at all times that the building is occupied.

[P] 2902.3.2 Location of toilet facilities in occupancies other than malls. In occupancies other than covered and open mall buildings, the required public and employee toilet facilities shall be located not more than one story above or below the space required to be provided with toilet facilities, and the path of travel to such facilities shall not exceed a distance of 500 feet (152 m).

Exception: The location and maximum distances of travel to required employee facilities in factory and industrial occupancies are permitted to exceed that required by this section, provided that the location and maximum distance of travel are *approved*.

[P] 2902.3.3 Location of toilet facilities in malls. In covered and open mall buildings, the required public and employee toilet facilities shall be located not more than one story above or below the space required to be provided with toilet facilities, and the path of travel to such facilities shall

not exceed a distance of 300 feet (91 m). In mall buildings, the required facilities shall be based on total square footage (m^2) within a covered mall building or within the perimeter line of an open mall building, and facilities shall be installed in each individual store or in a central toilet area located in accordance with this section. The maximum distance of travel to central toilet facilities in mall buildings shall be measured from the main entrance of any store or tenant space. In mall buildings, where employees' toilet facilities are not provided in the individual store, the maximum distance of travel shall be measured from the employees' work area of the store or tenant space.

~~[P] 2902.3.4 Pay facilities.~~ Where pay facilities are installed, such facilities shall be in excess of the required minimum facilities. Required facilities shall be free of charge.

~~[P] 2902.3.5 Door locking.~~ Where a toilet room is provided for the use of multiple occupants, the egress door for the room shall not be lockable from the inside of the room. This section does not apply to family or assisted-use toilet rooms.

~~[P] 2902.3.6 Prohibited toilet room location.~~ Toilet rooms shall not open directly into a room used for the preparation of food for service to the public.

~~[P] 2902.4 Signage.~~ Required public facilities shall be provided with signs that designate the sex as required by Section 2902.2. Signs shall be readily visible and located near the entrance to each toilet facility. Signs for accessible toilet facilities shall comply with Section 1111.

~~[P] 2902.4.1 Directional signage.~~ Directional signage indicating the route to the required public toilet facilities shall be posted in a lobby, corridor, aisle or similar space, such that the sign can be readily seen from the main entrance to the building or tenant space.

~~[P] 2902.5 Drinking fountain location.~~ Drinking fountains shall not be required to be located in individual tenant spaces provided that public drinking fountains are located within a distance of travel of 500 feet (152 m) of the most remote location in the tenant space and not more than one story above or below the tenant space. Where the tenant space is in a covered or open mall, such distance shall not exceed 300 feet (91-440 m). Drinking fountains shall be located on an accessible route.

~~[P] 2902.6 Small occupancies.~~ Drinking fountains shall not be required for an occupant load of 15 or fewer.

Reason: Chapter 29 is merely a reprint of specific sections out of the International Plumbing Code. There is no justification for reprinting verbiage from another code into the Building Code unless the language is specifically a building code item such as masonry fireplaces as referenced in Chapter 28. Instead, allow the charging statement in 2901 to direct the code official to the proper code or codes as done in Chapter 28 for Mechanical Systems.

Cost Impact: Will not increase the cost of construction

This will not increase the cost of construction as it is not adding additional code requirements it is merely directing the proponent to the correct code.

Analysis: This code change proposal addresses the scope and application of the International Building Code, Chapter 29. The action taken by the IBC-General Committee on this proposal coupled with the final action taken at the 2015 Final Action Hearings will be limited to an advisory recommendation to the ICC Board of Directors who will determine the final disposition on this proposed change in accordance with Section 1.3 of CP 28 which stipulates that the Board determines the scope of the I-Codes.

G 193-15 : 2902-SNYDER4424

G 194-15

3001.2, TABLE 3001.2 (New)

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

2015 International Building Code

Revise as follows:

3001.2 Referenced standards. Except as otherwise provided for in this code, the design, construction, installation, *alteration*, repair and maintenance of elevators and conveying systems and their components shall conform to ~~ASME A17.1/CSA B44, ASME A17.7/CSA B44.7, ASME A90.1, ASME B20.1, ANSI MH29.1, ALI ALCTV~~ the applicable standard specified in Table 3001.2 and ASCE 24 for construction in flood hazard areas established in Section 1612.3.

Add new text as follows:

TABLE 3001.2
ELEVATORS AND CONVEYING SYSTEMS AND COMPONENTS

<u>TYPE</u>	<u>STANDARD</u>
<u>Elevators, escalators, dumbwaiters, moving walks, material lifts</u>	<u>ASME A17.1/CSA B44</u>
<u>Belt manlifts</u>	<u>ASME A90.1</u>
<u>Conveyors and related equipment</u>	<u>ASME B20.1</u>
<u>Automotive lifts</u>	<u>ALI ALCTV</u>
<u>Platform lifts, stairway chairlifts, wheelchair lifts</u>	<u>ASME A18.1</u>

Reason: The referenced installation and design standards do not apply to all elevators and conveying systems and their components. Each standard is for a certain type. Although covered for accessibility in Section 1109.8, the installation standard for Platform Lifts and Stairway Chairlifts, ASME A18.1, is not included in Chapter 30. ASME A18.1 is a separate standard, not covered by Section 1.1.2 of ASME A17.1.

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

Cost Impact: Will not increase the cost of construction

This code change proposal will not increase the cost of construction due to the code already requires conformance with these standards. There may be a decrease in the cost of construction, due to providing clarity on what is required for specific equipment.

G 194-15 : 3001.2-KULIK5033

G 195-15

3001.2 (New)

Proponent: Andrew Cid, representing Private Citizen for The Initiative for Emergency Elevator Communication Systems for the Deaf, Hard of Hearing and Speech Impaired (andycid99@gmail.com)

2015 International Building Code

Add new text as follows:

3001.2 Emergency elevator communication systems for the deaf, hard of hearing and speech impaired An emergency two-way communication system shall be provided that:

1. Is a visual text-based and a video-based live interactive system.
2. Is fully accessible by the deaf and hard of hearing and speech impaired, and
3. Is located between the elevator car and the local emergency authorities at a point outside of the hoistway.

-

Reason: Reason for Addition / Change to the Language of IBC 3001.2:

The addition of the terms "visual, text-based and video-based live interactive communication systems" is strongly recommended to emphasize the need for totally accessible communication in elevators between local government emergency authorities and individuals who are: Deaf, Hard of Hearing, and Speech Impaired. This type of communication system is long overdue and strongly recommended for installation and retrofit into public elevators in existing buildings and for new construction. A similar proposal was considered by the A117.1 Standards Committee in 2014, but not approved. The IBC and IEBC should take the lead on this topic and establish this requirement that is needed by our communities..

Cost Impact: Will not increase the cost of construction

Cost Impact - The cost impact, to a recommended 70% of the existing building inventory for public and commercial buildings that are three (3) stories or higher with elevators, is expected to be negligible or minimal to the building owner / operator. Any costs incurred is anticipated to be alleviated with the use of various incentives such as tax write offs for complying with new accessibility standards. In addition, for new construction, it is expected that there will be no significant additional costs involved because it will be built into the design / build. For existing buildings, the estimated cost for such a system is approximately \$2,500. For new construction, the system will cost approximately \$5,000.

G 195-15 : 3001.2 (New)-CID3932

G 196-15

3004.1, 3004.5 (New)

Proponent: RW Bob O'Gorman, Automotive Lift Institute, representing Automotive Lift Institute, Inc.

2015 International Building Code

CHAPTER 30 ELEVATORS AND CONVEYING SYSTEMS

Revise as follows:

3004.1 General. Escalators, moving walks, conveyors, personnel hoists ~~and~~ material hoists and automotive lifts shall comply with the applicable provisions of Sections 3004.2 through ~~3004.4~~ 3004.5.

Add new text as follows:

3004.5 Automotive Lifts. Automotive Lifts shall be listed and labeled in accordance with ANSI/ALI ALCTV.

Reason: ANSI/ALI ALCTV is ALREADY identified as a referenced National Safety Standard in section 3001.2 of Chapter 30. This proposal is NOT requiring that a new standard be placed into reference. The reference to ANSI/ALI ALCTV by the IBC has existed since the 2000 codes went into effect. AHJ's and those attempting to comply regarding Automotive Lifts are confused and need clarification within the cited sections.

ANSI/ALI ALCTV applies to permanently installed, automotive service and repair lifts, such as those installed and used to convey and support passenger cars, trucks, buses, rail, and specialty vehicles. ANSI/ALI ALCTV identifies the electrical and mechanical safety requirements for an automotive lift and dictates that any such electrically powered devices be "Listed" by an OSHA accredited, Nationally Recognized Testing Laboratory (NRTL) and that the mechanical characteristics such as structural components and control systems be "Certified" as conforming to this ANSI standard by an accredited, independent third party product certifier.

Unlike the other products currently addressed within section 3004 (escalators, conveyors, and personnel/material hoists), no expertise in automotive lifts was had by those responsible for this item being developed at the time it was placed within Chapter 30. As a result, there is no dedicated section of code providing greater detail to those attempting to comply....or for those utilizing the code to definitively determine risk and compliance with known electrical and mechanical safety requirements contained within ANSI/ALI ALCTV.

A problem exists throughout the vehicle lift industry - there are a number of manufacturers (both within the continental US and overseas) that are providing automotive lift products that have no electrical and mechanical product safety certifications as required by ANSI/ALI ALCTV. These products are regularly being installed and hard wired into new and current construction. In recent years these products have moved beyond commercial applications and are now being placed into residential environments. Unknowing purchasers and end users are winding up with automotive lifts that successfully circumvent known electrical safety requirements regularly, because when these lifts are installed without proper permits (or even with permits); many utilizing the code that challenge an installation do not know how to interpret the need for compliance with ANSI/ALI ALCTV when countered with the argument "show me where it says that in writing". My office has been contacted literally hundreds of times by electrical code enforcement officers and other AHJ's regarding their difficulty in "holding ground" when those that sold the product argue chapter 30 does NOT apply to automotive lifts - because it lacks discussion and direction found for other products in the section.

Cost Impact: Will not increase the cost of construction

Since Compliance with ANSI/ALI ALCTV is already referenced in section 3001.2 of the current edition of the IBC (it has been required within this section since the 2000 edition of the IBC) the writer of this proposal states there is zero cost impact.

The change requested will allow for clarification of an existing requirement for automotive lifts to comply with ANSI/ALI ALCTV. The clarification requested will assist AHJ's, consumers, specifiers and contractors attempting to comply, to have clear understanding of what is currently required for Automotive Lifts, such as those used in service and repair centers (shops and dealerships for example).

Cost of construction will NOT increase. Currently 24 major companies act responsibly and provide North America with more than 2500 certified variations of automotive lift products that range in capacity from 5,000 lbs to well over 150,000 lbs in some applications. Without clarification, the issue of automotive lift compliance with IBC will continue to be a matter of "Buyer Beware".

G 197-15

3004.2.2

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

2015 International Building Code

Revise as follows:

3004.2.2 Escalators. Where provided in below-grade transportation stations, escalators shall have a clear width of not less than 32 inches (815 mm).

Exception: ~~The clear width is not required in existing facilities undergoing alterations.~~

Reason: The exception to this section addresses requirements for escalators undergoing alterations. Such provisions should be in the IEBC, not the IBC.

Cost Impact: Will not increase the cost of construction

This change and the companion change to put requirements for existing escalators undergoing alterations in the IEBC will clarify how the two codes work together. There should be no cost impact with this change.

G 197-15 : 3004.2.2-COLLINS4477

G 198-15

3005.4

Proponent: Quinton Owens, City of Rexburg, representing "self" (quintono@rexburg.org)

2015 International Building Code

Revise as follows:

3005.4 Machine rooms, control rooms, machinery spaces, and control spaces. Elevator machine rooms, control rooms, control spaces and machinery spaces outside of but attached to a hoistway that have openings into the hoistway shall be enclosed with *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. The *fire-resistance rating* shall be not less than the required rating of the hoistway enclosure served by the machinery. Openings in the *fire barriers* shall be protected with assemblies having a *fire protection rating* not less than that required for the hoistway enclosure doors.

Exceptions:

1. For other than fire service access elevators and occupant evacuation elevators, where machine rooms, machinery spaces, control rooms and control spaces do not abut and have no openings to the hoistway enclosure they serve, the *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both, shall be permitted to be reduced to a 1-hour *fire-resistance rating*.
2. For other than fire service access elevators and occupant evacuation elevators, in buildings ~~four~~^{three} stories or less above *grade plane* where machine room, machinery spaces, control rooms and control spaces do not abut and have no openings to the hoistway enclosure they serve, the machine room, machinery spaces, control rooms and control spaces are not required to be fire-resistance rated.

Reason: As the fire rating on shafts increases from one hour to two hours beginning at 4 stories, it seems logical that a machine room serving only a one hour rated shaft should be in exception two and all other shafts would fall together under exception one.

Cost Impact: Will increase the cost of construction

Cost increase is limited only to raising assembly rating by 1 hour for machine rooms serving elevator shafts of 4 stories.

G 198-15 : 3005.4-OWENS5702

G 199-15

3005.7 (New)

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

2015 International Building Code

Add new text as follows:

3005.7 Fire service access and occupant evacuation elevator machine rooms. Fire service access elevator machinery and occupant evacuation elevator machinery shall not be located in the same room with machinery serving other elevators.

Exception: Co-location of elevator machinery is permitted where a clean-agent fire-extinguishing system is installed in the machinery room instead of an automatic sprinkler system. The clean-agent system shall be in accordance with Section 904.10. Openings in the machinery room floor, walls and ceiling shall be limited to insure the functionality of the clean-agent system.

Reason: There are cases where fire service access elevator machinery or occupant evacuation elevator machinery may need to be co-located in the same machinery room as other non-fire service elevator or non-occupant self evacuation elevator machinery. IBC Section 903 and NFPA 13 requires sprinkler protection in all elevator machinery rooms except those serving fire service access elevator machinery or occupant evacuation elevator machinery (see IBC Sections 3007.2.1 & 3008.2.1 prohibiting the use of automatic (wet) sprinklers in fire service access and occupant evacuation elevator machine rooms). Both fire service access elevator machinery and occupant evacuation elevator machinery must be protected from any water source so this proposal allows the use of a clean-agent system per NFPA 2001 to allow all elevator machinery to be in the same room. This will insure that the provisions of IBC Section 3007.4 & 3008.4 are met when co-location of machinery is desired to meet design requirements.

Cost Impact: Will not increase the cost of construction

This code change will not effect the cost of construction as in some cases it will be less expensive to install a clean-agent fire extinguishing system than an automatic sprinkler system.

G 199-15 : 3005.7 (New)-KRANZ3868

G 200-15

3006.2

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:

3006.2 Hoistway opening protection required. Elevator hoistway door openings shall be protected in accordance with Section 3006.3 where ~~an the elevator hoistway is required to be located in a shaft enclosure, connects more than three stories, is required to be enclosed within a shaft enclosure in accordance with Section 712.1.1 and where~~ any of the following conditions ~~apply exist~~

1. The elevator hoistway exceeds 420 feet in height.
- ~~21.~~ The building is not ~~protected~~equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2.
- ~~32.~~ The building contains a Group I-1 Condition 2 occupancy.
- ~~43.~~ The building contains a Group I-2 occupancy.
- ~~54.~~ The building contains a Group I-3 occupancy.
- ~~5.~~ The building is a high rise and the elevator hoistway is more than 75 feet (22 860 mm) in height. The height of the hoistway shall be measured from the lowest floor to the highest floor of the floors served by the hoistway.

Exceptions:

1. Protection of elevator hoistway door openings is not required where the elevator serves only open parking garages in accordance with Section 406.5.
2. Protection of elevator hoistway door openings is not required at the level(s) of exit discharge, provided the level(s) of exit discharge is equipped with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
3. Enclosed elevator lobbies and protection of elevator hoistway door openings are not required on levels where the elevator hoistway opens to the exterior

The height of the hoistway shall be measured from the top of the lowest finished floor to the top of the highest finished floor of the floors served by the hoistway.

The height of elevator hoistways sharing a common atmosphere by elevator door openings at a common floor or by openings between hoistways shall be measured from the top of the lowest finished floor to the top of the highest finished floor of the floors served by the non separated hoistways.

Reason: This proposal is a follow-up to what was proposed in the 2012 cycle as proposal FS66-12. This version has been updated to work with the new language found in Section 3006.2 and addresses the reasons for disapproval, including that midrise buildings may not have been equipped throughout with an automatic sprinkler system. This issue has been viewed very differently throughout the US with many jurisdictions requiring elevator lobbies and many not. The IBC has required these lobbies since the 2000 edition and have always been heavily debated. This debate has been the reason the CTC has been carefully studying this issue. The work that led to FS66-12 included a technical analysis that looked at issues such as stack effect and also looked at the reliability of sprinklers through the use of the fire safety concepts tree. The technical analysis is available at the following link. <https://cdpaccess.com/proposal/fileupload/get/280>

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

Cost Impact: Will not increase the cost of construction

If the requirements for elevator lobbies are made less restrictive then the cost of construction would go down.

G 200-15 : 3006.2-
BALDASSARRA4170

G 201-15

3006.2.1 (New), 1020.1.1(IFC [BE] 1020.1.1) (New)

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

2015 International Building Code

Add new text as follows:

3006.2.1 Rated corridors. Where corridors are required to be fire resistance rated in accordance with Section 1020.1, elevator hoistway openings shall be protected in accordance with Section 3006.3.

1020.1.1(IFC [BE] 1020.1.1) Hoistway opening protection Elevator hoistway openings shall be protected in accordance with Section 3006.2.1.

Reason: During the 2012 cycle the CTC submitted a code change FS88-12 to clarify that it was not the intent to require protection of a hoistway opening in rated corridors. Instead, the elevator lobby requirements themselves addressed this issue. That proposal was not approved. Based upon that disapproval, it appears that it is within the intent to require protection of elevator hoistway openings based upon the requirement for rated corridor construction. Therefore, this requirement needs to be specifically clarified within Section 3006 to avoid the requirement being missed. A new section 3006.2.1 has been written to clarify that intent. Also, to further clarify this intent a Section 1020.1.1 has been provided as a pointer to these specific lobby requirements.

It should be noted that this requirement has limited application. The following summarizes the buildings not already addressed by Section 3006.2 that are required to have rated corridors.

Unsprinklered buildings:

Both conditions below apply to require hoistway opening protection:

- Group A, B, E, F, M, S and U occupancies with an occupant load served by a corridor greater than 30.
- Hoistways connecting only 3 stories.

Sprinklered buildings

Both conditions below apply to require hoistway opening protection:

- Applicable Occupancies
 - o Group R greater than 10 served by corridor (.5 hr)
 - o Group H1, H-2, H-3 (1 hr)
 - o Group H4, H5 greater than 30 served by Corridor (1 hr)
- Non High rise buildings

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

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

Cost Impact: Will not increase the cost of construction

This will not increase the cost of construction depending upon how this issue is being interpreted. This item will only increase construction if it had not been interpreted to require protection of the hoistway opening in rated corridors. This would involve having to comply with Section 3006.3.

G 201-15 : 3006.2.1 (New)-
BALDASSARRA4172

G 202-15

405.4.3, 708.1, 716.5.9.3, [F] 907.5.2.1 (IFC 907.5.2.1), 3006.4, 3007.6, 3007.6.1, 3007.6.3, 3007.9, 3007.9.1, 3008.6

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

2015 International Building Code

Revise as follows:

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 enclosed elevator lobby shall be provided and shall be separated from each compartment by a *smoke barrier* in accordance with Section 709. Doors shall be gasketed, have a drop sill and be automatic-closing by smoke detection in accordance with Section 716.5.9.3.

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

1. Separation walls as required by Section 420.2 for Groups I-1, R-1, R-2 and R-3.
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. Enclosed Elevator lobby separation as required by Section 3006.2.
5. Egress balconies as required by Section 1019.2

716.5.9.3 Smoke-activated doors. 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 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 enclosed 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.

[F] 907.5.2.1 Audible alarms. Audible alarm notification appliances shall be provided and emit a distinctive sound that is not to be used for any purpose other than that of a fire alarm.

Exceptions:

1. Audible alarm notification appliances are not required in critical care areas of Group I-2 Condition 2 occupancies that are in compliance with Section 907.2.6, Exception 2.
2. A visible alarm notification appliance installed in a nurses' control station or other continuously attended staff location in a Group I-2 Condition 2 suite shall be an acceptable alternative to the installation of audible alarm notification appliances throughout the suite in Group I-2 Condition 2 occupancies that are in compliance with Section 907.2.6, Exception 2.
3. Where provided, audible notification appliances located in each enclosed occupant evacuation elevator lobby in accordance with Section 3008.9.1 shall be connected to a separate notification zone for manual paging only.

3006.4 Means of egress. Elevator lobbies shall be provided with at least one means of egress complying with Chapter 10 and other provisions in this code. Egress through an enclosed elevator lobby shall be permitted in accordance with Item 1 of Section 1016.2.

3007.6 Fire service access elevator lobby. The fire service access elevator shall open into ~~an enclosed~~ fire service access elevator lobby in accordance with Sections 3007.6.1 through 3007.6.5. Egress is permitted through the enclosed elevator lobby in accordance with Item 1 of Section 1016.2.

Exception: Where a fire service access elevator has two entrances onto a floor, the second entrance shall be permitted to ~~open into an elevator lobby~~ be protected in accordance with Section 3006.3.

3007.6.1 Access to interior exit stairway or ramp. The enclosed fire service access elevator lobby shall have direct access from the enclosed elevator lobby to an enclosure for an *interior exit stairway* or *ramp*.

Exception: Access to an *interior exit stairway* or *ramp* shall be permitted to be through a protected path of travel that has a level of fire protection not less than the elevator lobby enclosure. The protected path shall be separated from the enclosed elevator lobby through an opening protected by a smoke and draft control assembly in accordance Section 716.5.3.

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

3007.9 Standpipe hose connection. A Class I standpipe hose connection in accordance with Section 905 shall be provided in the *interior exit stairway* and *ramp* having direct access from the enclosed fire service access elevator lobby.

3007.9.1 Access. The *exit* enclosure containing the standpipe shall have access to the floor without passing through the enclosed fire service access elevator lobby.

3008.6 Occupant evacuation elevator lobby. Occupant evacuation elevators shall open into an enclosed elevator lobby in accordance with Sections 3008.6.1 through 3008.6.6. Egress is permitted through the elevator lobby in accordance with Item 1 of Section 1016.2.

Reason: This proposal is simply clarifying where elevator lobbies are intended to be enclosed. In some cases an elevator lobby is simply the area where the elevators open onto and no enclosure of the space is necessary. This does not necessarily mean the hoistway opening is not protected but instead that there is not a physical lobby enclosure. It should be noted that there are some sections such as Section 909.21.6 that are not necessarily intending to address whether such lobbies are enclosed or unenclosed. The ICC Code Technology Committee (CTC) has just completed its 10th year. The ICC Board has decided to sunset the CTC. The sunset plan includes re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). The two remaining CTC Areas of Study are Care Facilities and Elevator Lobbies/WTC Elevator issues. This proposal falls under the Elevator Lobby Area of Study. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website at: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>.

Cost Impact: Will not increase the cost of construction
This is simply clarification of when elevator lobbies are enclosed.

G 202-15 : 405.4.3-
BALDASSARRA4176

G 203-15

3007.1

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

2015 International Building Code

Revise as follows:

3007.1 General. Where required by Section 403.6.1, every floor above and including the lowest level of fire department vehicle access of the building shall be served by fire service access elevators complying with Sections 3007.1 through 3007.9. Except as modified in this section, fire service access elevators shall be installed in accordance with this chapter and ASME A17.1/CSA B44.

Exception: Elevators that only service an open or enclosed parking garage and the lobby of the building shall not be required to serve as fire service access elevators in accordance with Section 3007.

Reason: There are two aspects that this proposal addresses. The first is that it was not the intention that FSAEs be available in the levels of the building below the lowest level of fire department access. Typically the fire department is more concerned with travelling high into the building and does not require that the same facilities be provided in the lower levels of the building. Most fire departments will likely not take an elevator below grade to a fire when the stairs are manageable. This will likely only affect buildings on steep grades where the lowest level of fire department access differs greatly from the main entrance. The second aspect addresses the issue that FSAEs are not necessary in parking garages. As noted the fire department is more likely to use FSAEs due to the height of the building. In addition, fire fighters typically are not willing to take an elevator past the fire floor. Instead in such cases they would prefer the use of the stairway.

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

Cost Impact: Will not increase the cost of construction

This will save money by not requiring FSAE elevators from the garage and clarifying that it is only the portion of the building above the lowest level of fire department vehicle access that need these elevators.

G 203-15 : 3007.1-
BALDASSARRA4189

G 204-15

3007.3, 3008.3

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

2015 International Building Code

Revise as follows:

3007.3 Water protection. ~~An approved method to prevent water~~ Water from the operation of an automatic sprinkler system outside the enclosed lobby shall be prevented from infiltrating into the hoistway enclosure ~~from the operation of the automatic sprinkler system outside the enclosed fire service access elevator lobby shall be provided in accordance with an approved method.~~

3008.3 Water protection. ~~An approved method to prevent water~~ Water from the operation of an automatic sprinkler system outside the enclosed lobby shall be prevented from infiltrating into the hoistway enclosure ~~from the operation of the automatic sprinkler system outside the enclosed occupant evacuation elevator lobby shall be provided in accordance with an approved method.~~

Reason: As currently written it is often misinterpreted that water protection should be provided from sprinklers activating within the enclosed lobby itself. In fact, this provision is specifically looking only at sprinkler activation outside the lobby. If a sprinkler was activated within the lobby itself then there are larger concerns about the safety of the elevator operations. Also if sprinklers have activated within the lobby the lobby smoke detection would have also activated and recalled the elevators to the lobby. This section is not intended to include fire fighter hose stream.

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

Cost Impact: Will not increase the cost of construction

This is merely a clarification. It may be a savings if it was interpreted to include the activation of an automatic sprinkler system within the enclosed elevator lobby.

G 204-15 : 3007.3-
BALDASSARRA4191

G 205-15

3007.1

Proponent: Dave Frable, representing US General Services Administration

2015 International Building Code

Add new text as follows:

3007.1 General. Where required by Section 403.6.1, every floor above and including the lowest level of fire department vehicle access of the building shall be served by fire service access elevators complying with Sections 3007.1 through 3007.9. Except as modified in this section, fire service access elevators shall be installed in accordance with this chapter and ASME A17.1/CSA B44.

Reason: The intent of this code change proposal is to clarify the original intent of the installation requirements for fire service access elevators in buildings with an occupied floor more than 120 feet above the lowest level of fire department access.

Please note that it was not the intention of the submitter of the original code change proposal to require fire service access elevators be available on the levels of the building below the lowest level of fire department access. Typically the fire department is more concerned with travelling upward into the building and typically do not require that fire service access elevators be provided in the lower levels of the building. Most fire departments will likely not take an elevator below grade to a fire when the stairs are manageable.

Cost Impact: Will not increase the cost of construction

This clarification will reduce cost of construction by not requiring fire service access elevators to be installed in locations below the lowest level of fire department vehicle access and that it is only the portion of the building above and including the lowest level of fire department vehicle access that need these elevators.

G 205-15 : 3007.1-FRABLE5041

G 206-15

3007.8, 3007.8.1 (New)

Proponent: Dave Frable, US General Services Administration, representing US General Services Administration

2015 International Building Code

Revise as follows:

3007.8 Electrical power. ~~The following features serving each fire service access elevator shall be supplied by both~~ Sufficient normal power and Type 60/Class 2X/Level 1 standby power: ~~1. Elevator shall be provided to simultaneously operate all designated fire service access elevators and their associated elevator equipment; 2. Elevator, elevator hoistway lighting; 3. Ventilation, elevator car lighting, and the ventilation and cooling equipment for their respective elevator machine rooms, control rooms, machine spaces and control spaces. 4. Elevator car lighting.~~

Add new text as follows:

3007.8.1 Standby power evaluation and analysis An evaluation and analysis shall be provided to determine the appropriate minimum time, in hours, that standby power must be provided following loss or failure of the normal power supply for the fire service access elevators to operate for the specific building and application. The subject evaluation and analysis shall be prepared by the responsible registered design professional and shall be approved prior to installation.

Reason: Currently as written all designated fire service access elevators must comply with Section 3007.8 which requires 2 hours of standby power for each designated fire service access elevator and associated equipment simultaneously.

In many 120 foot tall buildings across the country, the current 2-hour standby power requirement becomes costly and is likely much more conservative than necessary. The intent of this code change is to provide a more reasonable approach for providing standby power in lieu of using an arbitrary/absolute value of 2-hours. NFPA 110, Standard for Emergency and Standby Power Systems permits the use of Class X systems (Other time, in hours, as required by the application). Please note the Class defines the minimum time, in hours, for which the standby power system is designed to operate at its rated load without being refueled or recharged.

This proposal would permit the Building Official to approve an evaluation and analysis prepared by the registered design professions for determining the appropriate minimum time, in hours, that standby power must be provided for the respective building. In addition, it should also be pointed out that the 2-hour standby power requirement is also not consistent with reviews of the WTC bombing in 1996 that concluded buildings should not take longer than 1-hour to evacuate.

Cost Impact: Will not increase the cost of construction

This proposal will decrease the cost of construction as it will possibly reduce the size of the emergency power supply system providing standby power as well as determining the appropriate timeframe necessary for providing standby power for the operation of the fire service access elevators during an emergency.

G 206-15 : 3007.8-FRABLE5021

G 207-15

3008.1, 3008.1.1 (New), 3008.8.1 (New)

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

2015 International Building Code

Revise as follows:

3008.1 General. ~~Where elevators are to be~~ Elevators used for occupant self-evacuation during fires, ~~all passenger elevators for general public use shall comply with Sections 3008.1 through 3008.10. Where other elevators are used for occupant self-evacuation, those elevators shall comply with these sections.~~

Add new text as follows:

3008.1.1 Number of occupant evacuation elevators. The number of elevators available for occupant evacuation shall be determined based on an egress analysis that addresses one of the following scenarios

1. Full building evacuation where the analysis demonstrates that the number of elevators provided for evacuation results in an evacuation time less than one hour.
2. Evacuation of the 5 consecutive floors with the highest cumulative occupant load where the analysis demonstrates that the number of elevators provided for evacuation results in an evacuation time less than 15 minutes.

A minimum of one elevator in each bank shall be designated for occupant evacuation. Not less than two shall be provided in each occupant evacuation elevator lobby where more than one elevator opens into the lobby. Signage shall be provided to denote which elevators are available for occupant evacuation.

3008.8.1 Determination of standby power load. Standby power loads shall be based upon the determination of the number of occupant evacuation elevators in Section 3008.1.1.

Reason: The alternative to the 3rd stair in Section 403.5.2 is to use occupant evacuation elevators. This is a viable and more efficient option, but can require an excessive amount of standby power. As currently written, all passenger elevators must be used to comply with Section 3008 and Section 3008.8 would require 2 hours of standby power for every elevator simultaneously. In a building with many elevators, this becomes excessive and may be much more conservative than necessary where occupant loads are low. This proposal provides a more reasonable performance-based approach but while retaining the capacity to evacuate buildings more quickly than with stairs alone. Two options are provided to determine the number of occupant evacuation elevators necessary to meet the performance intent. The first focuses upon full building evacuation. This does not mandate full building evacuation but instead is a benchmark to use for analysis. The use of 1 hour sets an upper limit on evacuation time and is based upon concerns during review of events such as the WTC bombing in 1993 that buildings should not take longer than an hour to evacuate. The 1 hour criterion is consistent with the upper limit that the elevator industry typically uses to determine the use of elevators during the busier times of the day within buildings during normal operation. It is also consistent with the basis for the current code language. The second option is more closely associated with a more typical phased evacuation. This 15 minute criterion intends to remove occupants from the area to which the fire department will respond. In reviewing a number of resources the time of arrival of most fire departments in a typical city is likely around 4 minutes. This does not include time for set-up at the scene. NFPA 1710 specifically requires a 240 second arrival time to 90 percent of the incidents in a jurisdiction. Again this is only arrival time of the first due company. Several fire service officers have stated that an additional 10 minutes are needed to begin incident assessment, leading to the 15 minute criterion. Using the highest occupant load for 5 consecutive floors will provide a safety factor for the required number of occupant evacuation elevators.

In addition since the initial publication of occupant evacuation elevator requirements, ASME A17.1 has been updated and revised to address occupant evacuation elevators. This also includes the interface with the fire department features on elevators. Elevators can now be individually recalled by the fire department thus leaving more elevators available for evacuation if necessary. ASME A17.1 also provides requirements for the prioritization of elevators during emergencies. This provides another level of rigor to the concept.

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

Bibliography: Fire Master Plan, Olympia Washington, Chapter 4 Emergency response – response times. [Response times - Chapter 4 Fire Master Plan Olympia, WA](#)
NYC City wide fire report -2014. [NYC response times](#)
NFPA 1710 – 2010

Cost Impact: Will not increase the cost of construction

This proposal will decrease the cost of construction as it will possibly reduce the number of elevators necessary for occupant evacuation and thus reduce the capacity necessary for standby power.

G 207-15 : 3008.1 #1-
BALDASSARRA4188

G 208-15

3008.1, 3008.6.1

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

2015 International Building Code

3008.1 General. Where elevators are to be used for occupant self-evacuation during fires, all passenger elevators for general public use shall comply with Sections 3008.1 through 3008.10. Where other elevators are used for occupant self-evacuation, those elevators shall comply with these sections.

Revise as follows:

3008.6.1 Access to interior exit stairway or ramp. The occupant evacuation elevator lobby shall have direct access from the enclosed elevator lobby to an *interior exit stairway or ramp*.

Exception~~Exceptions:~~ 1. Access to an *interior exit stairway or ramp* shall be permitted to be through a protected path of travel that has a level of fire protection not less than the elevator lobby enclosure. The protected path shall be separated from the enclosed elevator lobby through an opening protected by a smoke and draft control assembly in accordance Section 716.5.3.

2. Elevators that only service an open parking garage and the lobby of the building shall not be required to provide direct access in accordance with this section.

Reason: Requiring occupant evacuation elevators to extend from a parking garages to the main lobby was not contemplated or intended to be addressed by the requirements for occupant evacuation elevators. Such elevators were intended to address portions of the building where height became an issue for evacuation. However it was felt that these elevators should still be available for occupant evacuation but the direct access requirement was felt to be overly restrictive for open parking garages. The direct access requirement often affects the location of the stairways and possibly leading to an additional stairway. There is an exception to Section 3008.6.1 if you provide protection to that stairway but in an open parking garage smoke accumulation is much less due to the open nature of the structure. The additional construction required to create that protected path would serve little benefit.

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

Cost Impact: Will not increase the cost of construction

Will decrease the cost of construction. This will simplify the location of the stairway. This exception eliminates the need for an additional stairway or of the creation of a protected path from the occupant evacuation elevator lobby to the stairway.

G 208-15 : 3008.1 #2-
BALDASSARRA4190

G 209-15

202 (New), 3001.1 (New), 3002 (New), 3003 (New), 3004 (New), 3005 (New), 3006 (New), 3007 (New), 3008 (New).
CHAPTER 35

Proponent: Jani Palmer, Environmental Protection Agency, representing United States Environmental Protection Agency

2015 International Building Code

Add new text as follows:

SECTION 202 DEFINITIONS

ACTIVE SOIL-DEPRESSURIZATION SYSTEM. A system designed to lower the air pressure in the soil beneath a building, relative to the atmospheric pressure immediately above ground level, by continuously withdrawing air from below a membrane covering the soil. An active soil-depressurization system consists of a pressure distribution manifold, one or more radon vents, an operating fan and a fan-failure indicator.

RADON. A naturally occurring, chemically inert, radioactive gas. It is part of the uranium-238 decay series. For purposes of this code, radon applies to radon-222; thus, it is the direct decay product of radium-226.

SOIL GAS RETARDER MEMBRANE. A durable, flexible and non-deteriorating material, installed in a continuous sheet to retard the pressured-driven flow of soil gas through elements of a structure.

CHAPTER 30 RADON REDUCTION SYSTEMS

SECTION 3001 GENERAL

3001.1 Intent. The provisions of this chapter shall govern the design, construction and testing of radon reduction systems. These systems are intended to limit radon entry points through floors, walls and foundations and to limit the mechanical depressurization of buildings, which can enhance radon entry.

3001.2 Required. This Chapter shall be mandatory for buildings of Group E (Educational) occupancy that are located in areas of high radon potential as determined by Table AF101(1) High Radon-Potential (Zone 1) Counties in Table 3001.2.

Table 3001.2
High Radon-potential, Zone 1, counties.

SECTION 3002 SOIL GAS RETARDER MEMBRANE.

3002.1 Membrane materials. Acceptable soil gas retarder membranes shall consist of a single layer of polyethylene, not less than 0.006-inch (6 mils) thick with a maximum perm rating of 0.3. Polyvinyl chloride (PVC), ethylene diene ter polymer (EPDM), neoprene or other non-deteriorating, non-porous material may be used instead of polyethylene, provide the installed thickness of the alternate material has greater or equal tensile strength, resistance to water-vapor transmission, resistance to puncture, and resistance to deterioration determined in accordance with ASTM E 154. The membrane shall be placed to minimize seams and to cover all of the soil below the building floor.

3002.2 Tape. Tape used to install the soil gas retarder shall have a minimum width of 2 inches and shall be pressure sensitive vinyl or other non-deteriorating pressure sensitive tape compatible with the surfaces being joined.

3002.3 Mastic. Mastic used to join sections of membrane to one another or to elements of the building foundation, or to seal penetrations in the membrane of the soil gas retarder shall be compatible with the surfaces being joined, and shall be installed in accordance with the manufacturer's recommendations for the materials, surface conditions and temperatures involved.

3002.4 Installation. The soil gas retarder shall be placed under the entire soil contact area of the floor in a manner than minimizes the required number of joints and seams. Care shall be taken to prevent damage to the membrane during the construction process. In buildings incorporating the sub-slab portions of an active soil-depressurization system, the soil gas retarder shall also serve to prevent mastic, cement or other materials from blocking the pressure distribution manifolds or pits.

3002.5 Seams Seams between portions of the soil gas retarder shall maintain not less than 12 inches of lap when concrete is placed. The membrane shall be secured with tape or mastic or by using larger unsecured overlaps prior to placing concrete.

3002.6 Slab edges and joints The soil gas retarder shall fully cover the soil beneath the building floor. Where the slab edge is cast against a foundation wall or grade beam, the soil gas retarder shall contact the foundation element, and shall not extend vertically into the slab more than one half of of the slab thickness.

3002.7 Penetrations At all points where pipes, conduits, reinforcing bars or other objects pass through the soil gas retarder membrane, the membrane shall be fitted to within one-half inch of the penetration and sealed to the penetration. Where penetrations occur within 24 inches of a soil-depressurization system mat or pit, the gap between the penetrating object and the soil gas retarder shall be taped closed. When necessary to meet this requirement a second layer of the membrane, cut so as to provide not less than a 12-inch lap on all sides, shall be placed over the object and shall be sealed to the soil gas retarder with a continuous band of tape.

3002.8 Punctures, cuts and tears All damaged portions of the soil gas retarder membrane within 24 inches of any portion of a soil-depressurization system mat or pit shall be sealed with tape or with a patch made from the same or compatible material, cut so as to provide not less than a 12-inch lap from any opening, and taped continuously about its perimeter.

3002.9 Mastics Mastic used to join sections of soil gas retarder to one another or to elements of the building foundation, or to seal penetrations in

the soil gas retarder, shall be located not less than 24 inches from any portion of the soil-depressurization system mat or pit. Tape shall be used to seal those portions of the soil gas retarder membrane that are within 24 inches of a soil-depressurization system mat or pit.

3002.10 Repairs Where portions of an existing concrete slab-on-grade construction have been removed and are about to be replaced, the soil gas retarder membrane shall be carefully fitted to the opening, and all openings between the membrane and the soil shall be closed with tape or mastic. Special care shall be exercised to assure that mastic does not enter any portion of the soil-depressurization system that is located beneath the slab-on-grade construction.

SECTION 3003

CONCRETE FLOORS IN CONTACT WITH SOIL GAS

3003.1 General Concrete slab-on-grade construction that is supported on soil or spanning over exposed soil, and that is used as a floor for conditioned space or enclosed spaces that are adjacent to or are connected to conditioned spaces, shall be constructed in accordance with local codes for mix design, slump and workability, hot weather placing and finishing and curing.

3003.2 Concrete for slab-on-grade construction. Concrete for slab-on-grade construction that is in contact with soil gas shall be in accordance with Sections 3003.2.1 and 3003.2.2.

3003.2.1 Compressive strength Design strength for concrete mixes used in the construction of slab-on-grade floors shall be not less than 3,000 psi at 28 days and shall be designed, delivered and placed in accordance with ASTM C 94.

3003.2.2 Shrinkage control Concrete mix design, placing practices, and curing practices prescribed shall be in accordance with this section. Concrete slab-on-grade or slabs spanning above exposed soil shall be designed, placed, finished and cured in accordance with this code.

3003.3 Sealing of construction joints, penetrations, cracks and other connections The sealing of construction joints, penetrations, cracks and other connections shall be in accordance with Sections 3003.3.1 through 3003.3.4.

3003.3.1 Sealants Sealants shall be selected and installed in compliance with ASTM C 920 and ASTM C 1193.

1. Sealant materials shall be compatible with the materials they join, including curing compounds and admixtures, and with materials that will be applied over them, including floor finishing materials.
2. Field-molded sealants shall be installed in sealant reservoirs proportioned, cleaned of laitance and prepared in accordance with the manufacturer's recommendations. For elastomeric sealants, this generally requires the installation of a bond breaker or backer rod shall be provided where required by the sealant manufacturer's installation instructions.
3. Where installed sealant is not protected by a finished floor or other protective surface, it shall be suitable to withstand the traffic to which it will be exposed.
4. Waterstops shall be preformed from polyvinyl chloride or other non-corrosive material.

3003.3.2 Joints Joints between sections of concrete floor slabs, between the floor slab and a wall or other vertical surface, and between a section of floor and another object that passes through the slab, shall be sealed to prevent soil gas entry in accordance with the provisions of this section. Joints and portions thereof shall not be covered or rendered inaccessible unless the seal has first been inspected and approved by the building official. Such joints shall be sealed prior to the structure being certified for occupancy.

1. **Butt joints.** Non-bonded butt joints shall be sealed to prevent radon entry using an elastomeric sealant or a waterstop as specified in Section 3003.3.1. The sealant reservoir shall be sufficiently large to prevent failure of the sealant or waterstop and shall not be less than 1/4-inch by 1/4-inch in cross-section
2. **Lap joints.** Non-boned lap joints shall be sealed with either a field-molded or preformed elastomeric sealant or with a flexible waterstop as specified in Section 3003.3.1. The lap joint shall be sufficiently large to prevent failure of the sealant or waterstop, but in no case shall the sealant reservoir be less than 1/2-inch by 1/2-inch in cross-section.
3. **Isolation joints.** Non-boned isolation joints shall be sealed with either a field-molded or preformed elastomeric sealant or with a flexible waterstop as specified in Section 3003.3.1. Isolation joints shall be sufficiently large enough to prevent failure of the sealant or waterstop, and shall be not less than 1/2-inch by 1/2-inch in cross-section.
4. **Control or contraction joints.** In locations where continued movement of the slab portions can be reasonably expected, flexible sealants shall be installed in reservoirs in accordance with Section 3003.3.2 Item 2, or a flexible waterstop shall be provided.
5. **Construction joints.** Bonded construction joints shall be sealed to prevent radon entry using either a rigid or an elastomeric sealant or a waterstop in accordance with Section 3003.3.1. Where movement of the joint is not prevented by continuous reinforcing and tie bars, flexible sealants shall be installed in reservoirs in accordance with Section 3003.3.2 Item 2, or a flexible waterstop shall be provided.

3003.3.3 Cracks Cracks in concrete slabs supported on soil or spanning over exposed soil, that are used as floors for conditioned space or enclosed spaces adjacent to or connected to conditioned spaces, shall be sealed against radon entry in accordance with the provisions of this section and Section 3003.3.1, except that cracks less than 1/16-inch wide that do not meet any of the conditions described in Section 3003.3.3(1), shall not be required to be sealed.

1. Cracks greater than 1/4-inch wide; all cracks that exhibit vertical displacement; all cracks that connect weakened zones in the slab such as vertical penetrations or re-entrant corners; and, all cracks that cross changes in materials or planes in the structure, shall be sealed with a flexible field-molded elastomeric sealant installed in accordance with Section 3003.3.2, Item 3, for isolation joints.
2. Cracks greater than 1/16-inch wide; that do not meet any of the conditions described in 3003.3.3(1), shall be enlarged to contain a sealant reservoir not less than 1/4-inch by 1/4-inch in cross-section along the entire length of the crack; and shall be sealed with a flexible, field-molded elastomeric sealant installed in accordance with 3003.3.2(1).

3003.3.4 Stakes, pipe penetrations and other small objects Objects that pass through the slab shall be sealed gas tight. A sealant reservoir, appropriately dimensioned to accommodate any differential movement between the object and the concrete, shall be formed continuously around the objects, and the joint shall be sealed with a field molded elastomeric sealant in accordance with Section 3003.3.2 Item 3 and Section 3003.3.1. Where pipes or other penetrations are separated from the concrete by flexible sleeves, the sleeve shall be removed to provide bonding of the sealant to the object. Where stakes are used to support plumbing, electrical conduits or other objects that will penetrate the slab, the stakes shall be solid, non-porous and resistant to decay, corrosion and rust. Special care shall be taken to avoid honeycombing between multiple or ganged penetrations.

1. Large utility service openings through the slab shall be sealed gas-tight. For slab-on-grade construction, this shall be accomplished by fully covering the exposed soil with a vapor-retarder membrane, covered to a depth of not less than 1 inch with an elastomeric sealant. Alternatively, the opening shall be closed with an expansive concrete or hydraulic cement to within 1/2 inch of the top of the slab, and the remaining 1/2 inch shall be filled with an elastomeric sealant. Where the opening connects to a crawlspace, the opening shall be closed with sheet metal or other rigid impermeable materials and sealed with an elastomeric sealant compatible with the materials and conditions.
2. For openings made through existing slabs, sealing shall meet the applicable provisions of this section. Where the opening is partially repaired with concrete, any resulting crack shall be sealed in accordance with Section 3003.3.3.
3. Sumps located in habitable portions of a building and connecting to the soil, either directly or through drainage piping, shall be equipped with a gasketed lid. The lid shall be attached so as to provide a gas-tight seal between the sump and the access space above.

SECTION 3004

WALLS IN CONTACT WITH SOIL GAS

3004.1 General Walls separating below-grade conditioned space from the surrounding earth or from a crawlspace or other enclosed space with an exposed earth floor, shall be isolated from the soil by an approved structural barrier as in accordance with Section 3002. Foundation walls consisting of cavity walls, or constructed of hollow masonry products or of any material in such a way as to create an air-space within the wall, shall be capped as the floor-level of the first finished floor they intersect. The cap shall be either at least 8 inches of solid concrete or concrete filled block, or a cap that provides air-flow resistance at least equal to the adjacent floor. Cracks, honeycombs, joints, ducts, pipes conduit chases or other openings in the wall shall not be allowed to connect soil gas to a conditioned space or to an enclosed space adjacent to or connected to a conditioned space.

3004.2 Materials Walls governed by the provisions of Section 3004 shall be constructed of reinforced concrete, or solid reinforced masonry construction.

3004.3 Waterproofing Walls governed by Section 3004 shall be constructed with a continuous waterproofing membrane applied either

1. To the exterior surface from the top of the footing to not less than 6 inches above the finished grade, or where the wall separates interior space and a crawlspace; or
2. From the top of the footing to the bottom of the floor above.

3004.3.1 Application The waterproofing membrane shall be applied in accordance with this code and shall be sealed to the top of the footing so as to waterproof the joint between the footing and the wall. Where installed in accordance with Section 3004.3 Item 2, the membrane shall be attached to the bottom of the floor above in a manner that fully seals the joint between the floor and wall.

3004.3.2 Utility penetrations Below-grade utility penetrations through walls in partial or full contact with the soil shall be closed and sealed with a sealant in accordance with Section 3003.3.1. This seal shall be made on both faces of the wall. Where conduits or ducts do not provide a continuous and gas-tight separation from the soil, the end of the conduit or duct shall be sealed in accordance with Section 3003.3.1 to prevent soil gas entry.

3004.4 Doors and service openings Doors, hatches or removable closures of any kind that can create an opening between the interior and a crawlspace shall be gasketed and equipped with a latch or other permanent fastening device.

SECTION 3005

BUILDINGS WITH CRAWL SPACES

3005.1 General. For the purposes of Section 3005, buildings with crawl spaces shall include all buildings with a floor supported above grade.

3005.1.1 Reinforced concrete floor systems Reinforced concrete floors constructed over crawl spaces shall be in accordance with Section 3003.

3005.1.2 Wood-framed floor systems Wood-framed floors spanning over soil, that are used as floors for conditioned space or enclosed spaces adjacent to or connected to conditioned spaces, shall be constructed in accordance with Section 3005.

3005.2 Materials. Wood-framed floors constructed over a crawl space shall be constructed of APA certified tongue-in-groove plywood, and shall otherwise comply with this code. Oriented structural board shall not be considered to be an acceptable substitute material.

3005.3 Utility penetrations Penetrations through the floor shall be fully sealed to the floor structure with a sealant that complies with Section 3003.3.1. Large service openings through the slab shall be sealed gas-tight. Where large openings are created, sheet metal or other rigid material shall be used in conjunction with sealants to close and seal the openings.

3005.4 Vertical joints Vertical joints between the subfloor and foundation wall or the subfloor and any vertical plane of the building that extends from the crawlspace to the top of the subfloor, shall be sealed with a sealant that complies with Section 3003.3.1.

3005.5 Doors and service openings. Doors, hatches or removable closures of any kind that have the potential to create an opening in the floor-plane shall be gasketed and equipped with a latch or other permanent fastening device.

3005.6 Other radon-entry paths Openings that connect a crawlspace and construction cavities, such as the space between wall studs, hollow masonry or precast concrete units, or floor and ceiling planes, shall be closed and sealed in accordance with Section 3003.3.1.

3005.7 Crawl space ventilation Crawl Spaces shall be passively ventilated or shall be constructed with an active soil-depressurization system in compliance with Sections 3008 and 3009. No portion of an air-distribution system shall pass through a crawlspace.

3005.7.1 Required ventilation. Crawl spaces shall be ventilated by openings through the perimeter wall connecting to the exterior of the foundation. Required vents shall have a combined net free area of not less than 1 square inch in each 1 square foot of crawl space, and shall conform to the following conditions:

1. Openings shall be distributed uniformly around the outside walls of the crawl space.
2. Vents shall be fitted with corrosion- and decay-resistant wire mesh or grilles with openings not less than 1/4 inch nor more than 1/2 inch in size. Vents shall not be fitted with operable louvers, dampers or other closure mechanisms.
3. Plumbing located in a ventilated crawlspace shall be protected from freezing with insulation or heat tape.

3005.7.2 Prohibited uses. Crawl spaces shall not be used as an air-duct or plenum or to house a duct or fan that is part of a heating, ventilating or air-conditioning system.

SECTION 3006
SPACE CONDITIONING SYSTEMS AND VENTILATING

3006.1 General. This Section limits radon entry points by means of the mechanical depressurization of buildings. Ventilating systems shall be designed in accordance with applicable codes and the provisions of this section for use of outside air of low radon concentration.

3006.2 Condensate drains. Joints in condensate piping shall be solvent welded, soldered or otherwise connected in a leak-proof and gas-tight manner. Condensate drains shall be trapped and shall terminate in the building sewer or outside of buildings, at not less than 6 inches above finished grade. Where the condensate piping penetrates a floor or wall separating enclosed space from the soil or from a crawl space, the penetration shall be sealed in accordance with applicable provisions of Section 3003. Condensate drain piping shall not terminate in a return plenum.

3006.3 Other piping. Where piping penetrates a floor or wall separating enclosed space from the soil or from a crawl space, the penetration shall be sealed in accordance with applicable provisions of Section 3003. Where piping is insulated, the insulation shall be removed at the point of the seal, and the required seal shall be made between the pipe and the building structure. The sealant shall be compatible with the materials and anticipated operating temperatures. Piping shall not terminate in a return plenum.

3006.4 Plumbing and wiring chases. Where piping or wiring is installed in a chase that is at any point in contact with the soil or a crawl space, the chase shall be sealed to the floor or wall where it first enters the structure, in accordance with applicable provisions of Section 3003. Piping contained in such a chase shall be sealed to the chase at the interior plane of that floor or wall. A chase or portion thereof shall not terminate in a return air duct or plenum. Where it is impractical or prohibited by another code to seal wiring into an electrical chase or conduit, the chase shall comply with applicable portions of Section 3003 or the conduit shall be entirely fabricated of gas-tight components and materials.

SECTION 3007
AIR DISTRIBUTION SYSTEMS

3007.1 Air distribution systems. Air ducts, plenums, fan enclosures or fans that are part of a building's heating, ventilating or air-conditioning system shall be completely isolated from the soil gas by a structural barrier complying with this Chapter. Heating, ventilating and air-conditioning systems supplying spaces with floors or walls that are in contact with soil or soil gas shall be designed to minimize air pressure differences and eliminate negative pressures, that cause significant flow of soil gas through the structural barrier and into the building. Return ducts, plenums and air handlers shall not be located in a crawl space.

3007.2 Exhaust fans, hoods, equipment and appliances. For each zone, the required volume of outside ventilation air shall be not less than the combined volume of air capable of being exhausted by all exhaust fans, hoods, equipment and appliances installed in the zone. This amount shall not be reduced by use factors unless devices are wired and switched in a manner that prevents their simultaneous operation.

3007.3 Combustion air ducts. Ducts that provide combustion air to fuel-burning appliances and equipment shall be completely isolated from the soil gas by a structural barrier that complies with the provisions in this Chapter.

SECTION 3008
ACTIVE SOIL-DEPRESSURIZATION SYSTEMS

3008.1 General. A soil-depressurization system causes the direction of air flow through any possible failure in the structural barrier to move out of the building and into the depressurization system, thereby reducing radon. Soil-depressurization systems shall be installed beneath concrete slabs supported directly on the soil, or beneath the soil gas retarder membrane in crawl spaces.

3008.2 Prohibited uses. Soil-depressurization systems components shall not extend beneath areas that are required to be depressurized by other codes for the protection of public health, such as, but not limited to, rooms containing general anesthesia or pathogens. Soil-depressurization systems shall be installed beneath rooms that are required to be depressurized for other reasons, such as, but not limited to, toilets and kitchens.

3008.3 System components. An active soil-depressurization system shall be comprised of the following components: a pressure distribution system porous media or manifolds; a soil cover; one or more vents; a suction fan; and a system failure indicator.

3008.3.1 Pressure distribution media or manifold. The low-pressure zone shall be extended across the entire area beneath the structure in accordance with the following. Acceptable means of extending the low-pressure zone include, but are not limited to, synthetic ventilation mats, a system of perforated pipe and an air-permeable gravel layer. Different types of pressure distribution media shall be allowed to be used in the same system, provided each complies with the installation requirements of this Chapter. Pressure distribution media must be installed in such a way as to assure that they are never blocked by water.

1. Ventilation mats shall have a soil contact area of not less than 216 square inches per linear foot and provide a cross-section profile of not less than 9 square inches.
2. Perforated pipe that is used to construct pressure extension manifolds shall be installed directly under the soil cover or in gravel or a similar porous medium that provides an adequate air flow connection between the pipe and the sub-soil and that protects the pipe from becoming blocked by soil.
3. Continuous gravel layers of at least 4-inches thickness are an acceptable pressure distribution medium, provided they completely cover the area of soil to be pressurized.

3008.3.2 Soil cover. In slab-on-grade construction, the soil cover shall consist of the soil gas retarder membrane and the concrete slab. In crawl spaces, the concrete slab shall be allowed to be omitted, provided that the soil-gas retarder membrane will not be subjected to wear and damage due to required maintenance procedures. In all instances, the soil gas retarder membrane shall be fully sealed to the radon vents in accordance with Section 3002.

3008.3.3 Radon vents. Radon vents that carry the soil gas to an area above and away from the building shall be gas-tight and of a material that is in accordance with the requirements for plumbing vents in the *International Plumbing Code*.

3008.3.4 Suction fans. Suction fans shall be designed for continuous operation. Fan performance shall comply with air flows and operating pressures that are determined by the system design, as determined using estimates from active soil-depressurization air flow models or in accordance with Section 3008.4.2.2.

3008.3.5 Fan failure indicator. Soil-depressurization systems shall have a failure indicator labeled with the words "Radon Reduction System Fan Failure Indicator" mounted so as to be conveniently visible to building occupants. The fan failure indicator shall be either a visual device consisting of a light not less than 1/5 footcandle at the floor level, or an alarm that produces a minimum of 60 db audible signal. The indicator shall be made to operate automatically when the pressure inside any radon vent pipe fitted with an operable fan is less than 0.40-inch water column (100 pascals).

lower than the air pressure inside the building.

3008.4 Active soil-depressurization system design requirements.

3008.4.1 General. Active soil-depressurization systems shall be designed to be capable of maintaining a 0.02-inch (5-pascal) pressure differential over 90 percent of the slab or crawlspace.

3008.4.2 Ventilation mat systems. Ventilation mat systems shall be designed to be capable of maintaining a 5-pascal pressure differential over 90 percent of the slab area or in accordance with the *International Mechanical Code* for equipment and system sizing.

3008.4.2.1 Installation. Radon ventilation mats shall be installed immediately prior to placing the soil gas retarder membrane. Mats shall be arranged in a pattern that provides not less than two possible flow paths from any points on the mat to a radon vent pipe. Mats shall be placed with the filter material facing the compacted soil. Where sections of the mat join, a section of filter material not less than 6-inches long at the end of one of the mats shall be loosened and the other piece of mat shall be inserted between the loosened filter material and the first section of mat. The mats shall be pressed tightly together at this lap and mechanically attached together with hog rings or metal pins driven through the mat and into the soil so as not to puncture or tear the soil gas retarder membrane. When properly joined, the filter material will extend continuously across the joint and the full cross-sectional area of the mat shall be preserved across the splice.

3008.4.2.2 Alternate compliance method. Systems installed on sand or granular soil shall demonstrate compliance by meeting all of the following design limits:

1. Mats shall be located at least 15 feet and not more than 25 feet from the outside edge of the floor.
2. Mats shall be spaced not more than 50 feet on center.
3. No portion of a building floor shall be isolated from a mat by a construction feature, such as an internal footing, grade beam, foundation wall or other obstacle having a depth greater than the exterior foundation walls.
4. No portion of a building floor shall be more than 35 feet from the mat.
5. Mats shall be run parallel to the longest slab dimension unless obstructed by a construction feature, and arranged in a pattern that provides at least two possible flow paths from any point on the mat to a radon vent pipe.

3008.4.2.3 Radon vent connection. The radon vent pipe shall join to the mat in a manner that does not restrict the full air flow capacity of the pipe. Where required, dependent upon the thickness and effective net-free-area of the ventilation mat, the diameter of the vent pipe at the connections shall be enlarged with a suitable flange, or the net-free-area of the mat shall be enlarged by installing additional layers of mat or a layer of gravel beneath the connection point. The soil gas retarder membrane shall be fully sealed to the radon vents in accordance with Section 3002.

3008.4.3 Perforated pipe systems. Perforated pipes shall be of a material that complies with this code for foundation drainage, and shall be sized according to the air flow estimated for the active soil-depressurization system. Perforated pipes installed in gravel shall be number 4 or 5 gravel complying with ASTM D 448, with not more than 5 percent passing a 3/8-inch screen.

3008.4.3.1 Installation. Perforated pipe pressure distribution manifolds shall be installed after the installation of all other utilities has been complete, and immediately prior to the soil gas retarder membrane. Pipes shall be installed with a row of perforations located at the bottom of the pipe, in order to allow condensate to drain from the system. Pipes shall be arranged in a pattern that provides at least two possible flow paths from any point in the system to a radon vent pipe. Separate sections of pipe shall be solvent welded or mechanically fastened together.

3008.4.3.2 Radon vent connection. The radon vent pipe shall join to the perforated pipe with a fitting that allows for the full air flow capacity of the vent pipe. The soil gas retarder membrane shall be fully sealed to the radon vents in accordance with Section 3002.

3008.4.4 Continuous gravel layer system. Gravel used as the pressure distribution medium shall be installed only after the installation of other utilities has been completed, and immediately prior to the soil gas retarder membrane. Where regions of gravel are isolated from one another by interior foundation elements, separate suction points shall be provided in each region, or regions shall be interconnected with pipes run horizontally through the obstruction. The size and number of such pipes shall be sufficient to provide at least two-times the anticipated air flow. Not less than two pipes shall be used to interconnect one gravel area with another. These pipes shall be separated by a horizontal distance of not less than one-half the length of the boundary between the connecting gravel areas.

3008.4.4.1 Radon vent connection. The radon vent pipe shall join to the gravel layer with a "T" fitting that allows for the full air flow capacity of the vent pipe from either side of the "T". The fitting shall be installed with two arms in the gravel and a single arm connected to the radon vent pipe. The soil gas retarder membrane shall be fully sealed to the radon vents in accordance with Section 3002.

3008.4.5 Radon vent pipe installation. Radon vent pipes shall be solvent welded or otherwise joined to create a gas-tight connection from the soil suction point to the vent termination point. They shall be sloped at not less than 1/8-inch per foot in a manner that will drain rain and condensate back to the soil, and shall be supported in accordance with the requirements for vents in the *International Plumbing Code*.

3008.4.5.1 Labeling. Portions of the radon vent pipe not permanently encased in a wall or chase shall be labeled to prevent accidental misuse. Labels shall consist of a pressure sensitive 2-inch yellow band with the words "Radon Reduction System" printed in black letters at least 1 inch in height. These labels shall be placed on every visible portion of the vent pipe at a spacing of not more than 3 feet. The labels shall be placed so as to be visible from any direction.

3008.4.5.2 Sizing. The size of vent pipes shall be determined by application of appropriate engineering principles and based on modeled air flow rates. For systems that comply with the alternate compliance method of Section 3008.4.2.2, and are installed in buildings with straight runs of vent pipes not more than 50 feet in height, the required number and size of vent pipes shall be determined as follows:

1. For up to 100 linear feet of ventilation mat, one 2-inch diameter pipe shall be used.
2. For up to 200 linear feet of ventilation mat, one 3-inch diameter pipe, or two 2-inch diameter pipes, shall be used.
3. For up to 400 linear feet of ventilation mat use one 4-inch diameter pipe, or two 3-inch diameter pipes, or four 2-inch diameter pipes shall be used.

3008.4.5.3 Terminals. Radon vent pipes shall terminate with a rain cap, installed above the roof of the structure, and shall be located in accordance with existing codes for toxic or noxious exhaust. Where not specifically addressed or applicable, vent pipes shall terminate in locations that minimize human exposure to their exhaust air, such that the location is:

1. At least 12 inches above the surface of the roof;
2. At least ten feet from any window, door or other opening such as, but not limited to, an operable skylight or air intake to conditioned spaces of the structure; and
3. Ten feet from openings into an adjacent building. The total required distance (10 feet) shall be measured either directly between the two points or be the sum of measurements made around the intervening obstacles.

Where the discharge point is within two feet of the elevation of openings into conditioned space, the ten foot distance shall be the horizontal distance between the points.

3008.4.6 Suction fans. Soil-depressurization system fans shall be designed to maintain the following minimum air pressure differences at the lower opening of the radon vent pipe, as compared to the air pressure of the conditioned space above:

1. For systems using ventilation mats, 0.5 inches water column.
2. For systems using perforated pipe, 0.5 inches water column.
3. For systems using continuous gravel layers, 1.0 inches water column.

3008.4.6.1 Fan sizing. Soil-depressurization systems that comply with the alternative compliance method of Sections 3008.4.2.2 and 3008.4.5.2, shall comply by sizing the fan as follows:

1. For up to 100 linear feet of ventilation mat the fan shall be rated for 50 cfm (24 L/s) at 1-inch water column.
2. For 100 to 200 linear feet of ventilation mat, the fan shall be rated for not less than 100 cfm (47 L/s) at 1-inch water column.
3. For 200 to 400 linear feet of ventilation mat, the fan shall be rated for not less than 175 cfm (83 L/s) at 1-inch water column.

Add new standard(s) as follows: ASTM E 154-08a (Reapproved 2013) Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, Walls or as Ground Cover.
ASTM C 1193-13 Standard Guide for Use of Joint Sealants

Reason: Radon in schools presents significant health risk. Thousands of schools are affected by radon. EPA found that 41% of schools that had high radon were located geographically within Zone 1 (high radon potential). It is common knowledge that there is no way to know your building/room's radon level unless you test. Testing before a building is constructed is not possible; therefore, preventative measures, such as adding radon reducing features during construction, can save future costs and lives. Often, the preventative measures alone are enough to keep radon levels below the 4 pCi/L action level. This means that many times, no fan for radon removal would need to run; thus saving more energy.

Bibliography: Radon Prevention in the Design and Construction of Schools and Other Large Buildings [EPA 625-R-92-016, June 1994].
Reducing Radon in Schools: A Team Approach [EPA 402-R-94-008, April 1994] at www.epa.gov/radon/pubs/index.html
www.epa.gov/radon

Cost Impact: Will increase the cost of construction

If the gravel and vapor barrier are already being installed due to code requirements, the cost will be at the low end of this range. The cost of adding radon resistant features during construction is much less than the cost to test and fix radon after construction. Typically, costs can be approximately \$10,000 and \$50,000 if these radon resistant features are not added during construction.

Analysis: A review of the standards proposed for inclusion in the code, ASTM E154 and ASTM C1193 with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 2, 2014. All other standards proposed for inclusion into the code are already in Chapter 35 of the 2015 IBC.

G 210-15

3008.8, 3008.8.1 (New)

Proponent: Dave Frable, representing US General Services Administration

2015 International Building Code

Revise as follows:

3008.8 Electrical power. ~~The following features serving each occupant evacuation elevator shall be supplied by both~~ Sufficient normal power and Type 60/Class 2X/Level 1 standby power: ~~1. Elevators shall be provided to simultaneously operate all occupant evacuation elevators along with their associated elevator equipment. 2. Ventilation, elevator hoistway lighting, elevator car lighting, and the ventilation and cooling equipment for their respective elevator machine rooms, control rooms, machinery machine spaces and control spaces. 3. Elevator car lighting.~~

3008.8.1 Standby power evaluation and analysis. An evaluation and analysis shall be provided to determine the appropriate minimum time, in hours, that standby power must be provided following loss or failure of the normal power supply for the occupant evacuation elevators to operate for the specific building and application. The subject evaluation and analysis shall be prepared by the responsible registered design professional and shall be approved prior to installation.

Reason: Currently as written all occupant evacuation elevators must comply with Section 3007.8 which requires 2 hours of standby power for each occupant evacuation elevator and associated equipment simultaneously.

In many tall buildings across the country, the current 2-hour standby power requirement becomes costly and is likely much more conservative than necessary. The intent of this code change is to provide a more reasonable approach for providing standby power in lieu of using an arbitrary/absolute value of 2-hours. NFPA 110, Standard for Emergency and Standby Power Systems permits the use of Class X systems (Other time, in hours, as required by the application). Please note the Class defines the minimum time, in hours, for which the standby power system is designed to operate at its rated load without being refueled or recharged.

This proposal would permit the Building Official to approve an evaluation and analysis prepared by the registered design professions for determining the appropriate minimum time, in hours, that standby power must be provided for the respective building. In addition, it should also be pointed out that the 2-hour standby power requirement is also not consistent with reviews of the WTC bombing in 1996 that concluded buildings should not take longer than 1-hour to evacuate.

Cost Impact: Will not increase the cost of construction

This proposal will decrease the cost of construction as it will possibly reduce the size of the emergency power supply system providing standby power as well as determining the appropriate timeframe necessary for providing standby power for the operation of occupant evacuation elevators during an emergency.

G 210-15 : 3008.8-FRABLE5036

G 211-15

3101.1, 3111, 3111.1, 3111.1.1, 3111.1.1 (New), 3111.1.2 (New), 3111.1.3 (New), 3111.2 (New), 3111.2.1 (New), 3111.3 (New), 3111.3.1 (New), 3111.3.2 (New), 3111.3.3 (New), 3111.3.4 (New), 3111.3.5 (New), 3111.3.5.1 (New)

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

2015 International Building Code

Revise as follows:

3101.1 Scope. The provisions of this chapter shall govern special building construction including membrane structures, temporary structures, *pedestrian walkways* and tunnels, automatic *vehicular gates, awnings and canopies, marquees, signs, and towers and antennas, swimming pool enclosures and safety devices, and solar energy systems.*

SECTION 3111 PHOTOVOLTAIC PANELS AND MODULES SOLAR ENERGY SYSTEMS

3111.1 General. Photovoltaic panels and modules Solar energy systems shall comply with the requirements of this code ~~and the International Fire Code section.~~

Delete without substitution:

~~**3111.1.1 Rooftop-mounted photovoltaic panels and modules.** Photovoltaic panels and modules installed on a roof or as an integral part of a roof assembly shall comply with the requirements of Chapter 15 and the International Fire Code.~~

Add new text as follows:

3111.1.1 Wind resistance. Rooftop mounted photovoltaic panels and modules and solar thermal collectors shall be designed in accordance with Section 1609.

3111.1.2 Roof live load. Roof structures that provide support for solar energy systems shall be designed in accordance with Section 1607.12.5.

3111.1.3 Guards. Installations shall comply with Section 1015.6 prior to installation of solar thermal systems or photovoltaic solar energy systems.

3111.2 Solar thermal systems. Solar thermal systems shall be designed and installed in accordance with Section 2606.12, the International Plumbing Code, the International Mechanical Code, and the International Fire Code.

3111.2.1 Equipment listings. Solar thermal systems and components shall be listed and labeled in accordance with ICC 900/SRCC 300 and ICC 901/SRCC 100.

3111.3 Photovoltaic solar energy systems. Photovoltaic solar energy systems shall be designed and installed in accordance with this section, the International Fire Code, NFPA 70, and the manufacturer's installation instructions.

3111.3.1 Equipment listings. Photovoltaic panels and modules shall be listed and labeled in accordance with UL 1703. Inverters shall be listed and labeled in accordance with UL 1741. Systems connected to the utility grid shall use inverters listed for utility interaction.

3111.3.2 Fire classification. Rooftop-mounted photovoltaic systems shall have a fire classification in accordance with Section 1505.9. Building integrated photovoltaic systems shall have a fire classification in accordance with Section 1505.8.

3111.3.3 Building integrated photovoltaic systems. Building integrated photovoltaic systems that serve as roof coverings shall be designed and installed in accordance with Section 1507.17.

3111.3.4 Access and pathways. Roof access, pathways and spacing requirements shall be provided in accordance with Section 605.11 of the International Fire Code.

3111.3.5 Ground mounted photovoltaic systems. Ground mounted photovoltaic systems shall be designed and installed in accordance with Chapter 16 and the International Fire Code.

3111.3.5.1 Fire separation distances. Ground mounted photovoltaic systems shall be subject to the fire separation distance requirements determined by the local jurisdiction.

Add new standard(s) as follows: ICC/SRCC

ICC 900/SRCC 300 Solar Thermal Systems

ICC 901/SRCC 100 Solar Thermal Collector

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

Currently, provisions for solar energy systems, both solar thermal and photovoltaic, are scattered throughout the International Building Code, International Fire Code, International Plumbing Code, International Mechanical Code, and the National Electrical Code (NFPA 70). The intent of this proposed change is to do for these codes what was done in the 2015 International Residential Code through Proposal RM98-13. This proposed change consolidates and organizes all the requirements, with necessary section revisions and section additions, in an easily used format that assists the user to find all the applicable requirements – fire, electrical, structural, plumbing, and mechanical - related to solar thermal and photovoltaic systems.

Both of these systems are special building construction, and this proposal expands on the existing Section 3111 for photovoltaic panels and modules, providing clarity as to where specific requirements are located in the building and other codes.

As with the new Section R324 in the International Residential Code, expanding Section 3111 will allow for easy inclusion of new solar energy system types and locations.

Several of the new sections proposed to Section 3111 are located in other parts of the code, and a follow-up proposal will be made in the Group B cycle to address those sections, which include:

1510.7.1 (proposed new Section 3111.1)

1510.7.3, 1510.7.4, and 1512.1 (proposed new Section 3111.3)

1510.7.4 (proposed new Section 3111.3.1)

1510.7 (proposed new Section 3111.3.2)

Also a new section will be proposed in Group B cycle to address the specific structural requirements for wind resistance in Chapter 16. These requirements will be coordinated with new provisions in ASCE 7-16.

The requirement for guards in Section 3111.1.3 is already in Section 1015.6.

The new standards developed by ICC/SRCC are referenced for solar thermal equipment and installations.

Cost Impact: Will not increase the cost of construction

This code change proposal will not increase the cost of construction. The proposal attempts to clarify the code, but does not make any technical changes to code requirements.

Analysis: A review of the standards proposed for inclusion in the code, ICC 900/SRCC 300 and ICC 901/SRCC 100, 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.

G 211-15 : 3101.1-KULIK4875

G 212-15

3102.1.1

Proponent: Jennifer Goupil, representing American Society of Civil Engineers (jgoupil@asce.org)

2015 International Building Code

Revise as follows:

3102.1.1 Tensile membrane structures and air-supported structures. Tensile membrane structures and air-supported structures, including permanent and temporary structures, shall be designed and constructed in accordance with ASCE 55. The provisions in Sections 3102.3 through 3102.6 shall apply.

Reason: This change proposes to add the new referenced standard *ASCE 55 Tensile Membrane Structures*. This Standard provides minimum criteria for the design and performance of tensile membrane cable and rigid member structures, including frame structures, collectively known as tensile membrane structures, including permanent and temporary structures as defined herein. The requirements of this Standard shall apply whether the tensile membrane structure is independent of or attached to another structure. This Standard does apply to air-supported structures.

In addition to the scope and definitions, the Standard includes chapters on membrane materials, connections, design, fabrication and erection, as well as appendices for special provisions and a procedure for determining modulus of elasticity.

ASCE/SEI 55 is published and maintained by the Structural Engineering Institute of the American Society of Civil Engineers (SEI/ASCE). The document is a nationally recognized consensus standard developed in full compliance with the ASCE *Rules for Standards Committees*. The ASCE standards process is fully accredited by the American National Standards Institute (ANSI).

The document is designated ASCE/SEI 55-10 *Tensile Membrane Structures* and it is currently available for purchase from ASCE. Any person interested in obtaining a public comment copy of ASCE/SEI 55 may do so by contacting the proponent at jgoupil@asce.org. A copy of the standard has been submitted with this proposal.

Cost Impact: Will not increase the cost of construction

This proposal coordinates the provisions of the code with the provisions of the referenced standard and provides the correct pointer to ASCE 55.

G 212-15 : 3102-GOUPIL4126

G 213-15

3102.1, 3103.1, 3103.5 (New)

Proponent: Adolf Zubia, IAFC Fire & Life Safety Section, representing IAFC Fire & Life Safety Section

2015 International Building Code

Revise as follows:

3102.1 General. The provisions of Sections 3102.1 through 3102.8 shall apply to air-supported, air-inflated, membrane-covered cable, membrane-covered frame and *tensile membrane structures*, collectively known as membrane structures, erected for a period of 180 days or longer. Those erected for a shorter period of time shall comply with Section 3103 and the International Fire Code. Membrane structures covering water storage facilities, water clarifiers, water treatment plants, sewage treatment plants, greenhouses and similar facilities not used for human occupancy are required to meet only the requirements of Sections 3102.3.1 and 3102.7. Membrane structures erected on a building, balcony, deck or other structure for any period of time shall comply with this section.

3103.1 General. The provisions of Sections 3103.1 through ~~3103.4~~3103.5 shall apply to structures erected for a period of less than 180 days. Tents and other membrane structures erected for a period of less than 180 days shall comply with Section 3103.5 and the International Fire Code. Those erected for a longer period of time shall comply with applicable sections of this code.

Add new text as follows:

3103.5 Structural design. Temporary tents and membrane structures, including those erected for a period of less than 180 days, shall be designed and constructed in accordance with Chapter 16 where any of the following conditions occur:

1. The occupant load of the tent or membrane structure exceeds 300.
2. The height of the tent or membrane structure exceeds 30 feet (9144 mm).
3. The tent or membrane structure exceeds one story.
4. The floor area of the tent or membrane structure exceeds 5,000 square feet (465 m²).

Construction documents as required by Section 1603 shall be provided for such temporary tents and membrane structures.

Reason: This proposal is submitted by Fire and Life Safety Section of the International Association of Fire Chiefs.

Temporary tents and membrane structures are now being constructed of significant size, with many containing multiple stories or floor levels. The potential collapse of these tents or membrane structures creates significant hazards to the occupants and others in the immediate vicinity.

These temporary tents and membrane structures have traditionally been regulated solely by the IFC, however, the structural requirements are found in the IBC. Structural loads such as seismic, wind and snow loads impact temporary structures just the same as they would affect permanent structures.

This proposal accomplishes the following:

1. It provides a reference to the structural requirements for temporary tents and membrane structures in the IBC.
2. It includes the requirement that certain large tents and membrane structures must meet the same structural requirements that would be required for permanent structures.

This proposal will require a review of structural design for temporary tents and membrane structures over 30 feet in height or over 5,000 square feet,



over one story,



and over an occupant load of 300.



These categories of temporary tents and membrane structures are significantly larger than the typical, routine tent and membrane structure installation. The smaller tents are intentionally not included in this proposal.

A companion code change will be submitted to the IFC during the Group B code change cycle to complement this proposal.

Cost Impact: Will increase the cost of construction

The cost of construction will increase to cover the additional structural evaluation necessary to show compliance with Chapter 16.

G 214-15

3103.5 (New), 3103.5.1 (New)

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

2015 International Building Code

Add new text as follows:

3103.5 Accessibility. Temporary structures shall comply with the accessibility requirements of Chapter 11.

3103.5.1 Temporary outdoor performance areas. An accessible route is required to an temporary outdoor performance area. An accessible route shall directly connect the temporary outdoor performance area to the assembly seating or standing area where a circulation path directly connects a temporary outdoor performance area to the an assembly seating or standing area.

Exception: The vertical access to the elevated temporary outdoor performance area is not required at the time of initial construction provided:

1. A ramp, lift or elevator can be installed without reconfiguration or extension of the temporary outdoor performance area or extension of the electrical system; and
2. The accessible route is not required from the assembly seating or standing area to the temporary outdoor performance area.

Reason: The proposed amendment addresses the accessibility requirements for temporary structures. Section 107.2 requires temporary uses to comply with the IBC including the accessibility requirements. The proposed addition of Section 3103.5 references Chapter 11 and makes clear that the temporary construction need only comply if involving the applicable facilities regulated by Chapter 11. For example a snow ramp and similar elevated structures that do not convey users are not considered amusement rides and therefore not regulated.

Section 3103.5.1 is added to address a practical issue during temporary performances where the show producer knows that no persons with mobility impairments require access onto a performance stage and prefer to incur the additional costs of a ramp or platform lift. The ADA requires all employers to accommodate persons with disabilities and as a result the code change is proposed with permissive language to allow for circumstances where access can be provided. By requiring an accessible route up to the temporary platform or stage the code change will make it possible to add a temporary platform lift or ramp if necessary to provide access. A temporary structure is very similar to a moved or relocated building; the IEBC does not require that moved or relocated buildings be made accessible. Additionally, the employee work area definition in the IBC is broad enough to classify the performance stage or platform as an employee work area that Section 1103.2.2 only requires compliance with the accessibility requirements in Section 1104.3 that requires an accessible route to connect the employee work area to the rest of the facility.

Cost Impact: Will not increase the cost of construction

This code change will not increase the cost of construction since the cost of installing a ramp or a lift when not needed is avoided.

G 214-15 : 3103.5 (New)-FATTAH5007

G 215-15

3104.3

Proponent: Mike Fischer, Kellen Company, representing the Plastic Glazing Coalition of the American Chemistry Council (mfischer@kellencompany.com)

2015 International Building Code

Revise as follows:

3104.3 Construction. The *pedestrian walkway* shall be of noncombustible construction.

Exceptions:

1. Combustible construction shall be permitted where connected buildings are of combustible construction.
2. *Fire-retardant-treated wood*, in accordance with Section 603.1, Item 1.3, shall be permitted for the roof construction of the *pedestrian walkway* where connected buildings are a minimum of Type I or II construction.
3. Awnings or canopies installed at a *pedestrian walkway* shall be in accordance with Section 3105.

Reason: Awnings and canopies are often used at pedestrian walkways. Section 3104.3 requires that pedestrian walkways be of non-combustible construction, but provides no guidance on canopies or awnings that may cover, or project over, the walkway. The proposal provides a reference to indicate that the provisions of 3105, which apply to awnings and canopies in other locations, also apply over pedestrian walkways.

Cost Impact: Will not increase the cost of construction

The proposal is a clarification of existing code provisions; it does not add new requirements.

G 215-15 : 3104.3-FISCHER5483

G 216-15

3104.5.2.2

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

2015 International Building Code

Revise as follows:

3104.5.2.2 Glass. The wall shall be constructed of a tempered, wired or laminated glass. ~~The glass wall and doors or glass~~ separating the interior of the building from the *pedestrian walkway*. ~~The glass~~ shall be protected by an *automatic sprinkler system* in accordance with Section 903.3.1.1 that, when actuated, shall completely wet the entire surface of interior sides of the wall or glass. Obstructions shall not be installed between the sprinkler heads and the wall or glass. The glass 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 operates.

Reason: When this section was reformatted by G19-12 we believe the proponent inadvertently added verbiage that resulted in an unintended provision. In the first sentence after "...tempered, wired or laminated glass wall and doors or glass..." The term "or glass" was not in the 2012 edition. This leads one to believe that you could have the option of using tempered, wired or laminated glass or just plain glass. We are sure that was not the intent of the proponent of G19-12. We know of a couple of instances where design professionals have read this to mean they had that option.

We have also divided the first sentence into two sentences. The first sentence tells you the type of glazing to be used, and the second sentence has the protection method.

This proposal would correct any confusion as to the type of glazing required.

Cost Impact: Will not increase the cost of construction

This is just a clarification of the type of glazing that is currently required for pedestrian walkways so there should be no cost increase

G 216-15 : 3104.5.2.2-LAMPELLA4992

G 217-15

3104.9

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

2015 International Building Code

CHAPTER 31 SPECIAL CONSTRUCTION

Revise as follows:

3104.9 Exit access travel. The length of *exit access* travel that occurs within a *pedestrian walkway* shall be 200 feet (60 960 mm) or less.

Exceptions:

1. *Exit access* travel distance on a *pedestrian walkway* equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 shall be 250 feet (76 200 mm) or less.
2. *Exit access* travel distance on a *pedestrian walkway* constructed with both sides not less than 50 percent open shall be 300 feet (91 440 mm) or less.
3. *Exit access* travel distance on a *pedestrian walkway* constructed with both sides not less than 50 percent open, and equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, shall be 400 feet (122 m) or less.

Reason: The application of travel distance in a pedestrian walkway is not clearly stated. The language proposed is similar to the travel distance requirement for atriums in Section 404.9.3.

Cost Impact: Will not increase the cost of construction

This proposal only clarifies the application of the requirement and does not add any new requirements that would add material or labor cost to a building.

G 217-15 : 3104.9-GEREN5145

G 218-15

3105.1

Proponent: Victor Cuevas, representing City of Los Angeles

2015 International Building Code

Revise as follows:

3105.1 General. *Awnings, ~~canopies~~ and ~~canopies~~ trellises* shall comply with the requirements of Sections 3105.2 through 3105.4 and other applicable sections of this code.

Reason: Trellises are not currently addressed by the IBC. Trellises represent no greater hazard than awnings or canopies, which are similar to trellises, except that they have a cover.

Cost Impact: Will not increase the cost of construction

Adding the term trellis to the code will not require that construction work be made any different than the way it's currently done.

G 218-15 : 3105.1-CUEVAS4921

G 219-15

202 (New), 3105.3

Proponent: Victor Cuevas, representing City of Los Angeles

2015 International Building Code

Add new definition as follows:

SECTION 202 DEFINITIONS

TRELLIS. A permanent structure or architectural projection of rigid construction that provides shading, identity or decoration. Trellises may be constructed of lattice members so that a sphere of 10 inches minimum in diameter can pass through, or of members running in one direction only with a minimum clear spacing between the members of not less than 4 inches. A trellis is permitted to be structurally independent or supported by attachment to a building on one or more sides.

Revise as follows:

3105.3 Design and construction. Awnings, canopies and ~~canopies~~ trellises shall be designed and constructed to withstand wind or other lateral loads and live loads as required by Chapter 16 with due allowance for shape, open construction and similar features that relieve the pressures or loads. Structural members shall be protected to prevent deterioration. Awnings and trellises shall have frames of noncombustible material, *fire-retardant-treated wood*, wood of Type IV size, heavy timber or 1-hour construction with combustible or noncombustible covers and shall be either fixed, retractable, folding or collapsible.

Exception: Trellises in Group R-3 occupancies shall be permitted to be constructed of any materials allowed by this code.

Reason: The proposed new definition for trellis, is similar to a canopy, except without a covering. This definition incorporates spacing requirements that have been developed and used for trellises at single family dwellings.

Section 3105.3 is being amended to include trellises, and to include a reference to heavy timber. The exception is in place to continue allowances for trellises of any material or size in one- and two-family homes.

Cost Impact: Will not increase the cost of construction

This change does not require any change in the way buildings are built. It simply establishes a criteria/threshold for when floor area needs to be accounted for, when roof projections exceed the outer walls of a building.

Adding the term trellis to the code will not require that construction work be made any different than the way it's currently done.

G 219-15 : 3105.3-CUEVAS4922

G 220-15

3105.4

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:

3105.4 Awnings and canopy materials. Awnings and *canopies* shall be provided with an *approved* covering that ~~meets~~complies with one of the following:

1. The fire propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701-or has,
2. Has a flame spread index not greater than 25 when where tested in accordance with ASTM E 84 or UL 723, or
3. Meets all of the following criteria as tested in accordance with NFPA 286:

- 3.1. During the 40 kW exposure, flames shall not spread to the ceiling.
- 3.2. Flashover, as defined in NFPA 286, shall not occur.
- 3.3. The flame shall not spread to the outer extremity of the sample on any wall or ceiling.
- 3.4. The peak heat release rate throughout the test shall not exceed 800 kW.

Exception: The fire propagation performance and flame spread index requirements shall not apply to awnings installed on detached one- and two-family dwellings.

Reason: The proposal provides an additional compliance path for awning and canopy covers through the addition of NFPA 286 to Section 3105.4. NFPA 286 is referenced in other sections of the IBC, including Chapter 26.

Cost Impact: Will not increase the cost of construction
The proposal provides additional options and adds no mandatory requirements.

G 220-15 : 3105.4-FISCHER5502

G 221-15

3111, 3111.1, 3111.1.1, 3111.1.1.1 (New), 3111.1.1.2 (New)

Proponent: Victor Cuevas, representing City of Los Angeles

2015 International Building Code

SECTION 3111 PHOTOVOLTAIC PANELS AND MODULES

3111.1 General. Photovoltaic panels and modules shall comply with the requirements of this code and the *International Fire Code*.

3111.1.1 Rooftop-mounted photovoltaic panels and modules. Photovoltaic panels and modules installed on a roof or as an integral part of a roof assembly shall comply with the requirements of Chapter 15 and the *International Fire Code*.

Add new text as follows:

3111.1.1.1 Height and area Photovoltaic panel arrays supported by a structure shall not constitute an additional story or additional floor area provided one of the following is met:

1. The highest point of the structure/panel array shall meet the lower of the two values below:

1.1 Ten feet above the allowable building height; or

1.2. Ten feet above the roof of the building immediately below.

2. Either no use is located on the roof beneath the photovoltaic array or the use of the roof shall be limited to parking complying with all of the following:

2.1. The total area within the perimeter of each photovoltaic array shall not be greater than 6,000 square feet.

2.2. The distance between solar photovoltaic array structures shall be not less than 10 feet.

2.3. Where a driveway aisle is located between arrays, the distance between the arrays shall be not less than 25 feet.

2.4. No storage shall occur beneath the array, and

2.5. The structure supporting the array shall be completely open on all sides, with no interior partitions.

3111.1.1.2 Fire-resistance Noncombustible structural members supporting photovoltaic panel arrays shall not be required to have a fire-resistance rating as follows:

1. Where no use occurs beneath the array, the array structure and supported photovoltaic panels shall have uniformly distributed and unobstructed openings throughout the top of the array as approved by the code official, to allow heat and gases to escape. The code official is authorized to require signage prohibiting use of the space beneath the array; or

2. Where parking is located beneath the array, the requirement of Section 3111.1.1.1 are met.

Reason: Add regulations similar to the State of California. The area limitation of 6,000 square feet will allow the Fire Department to get around the structures when putting out a fire.

Cost Impact: Will not increase the cost of construction

The code change proposal will not increase the cost of construction.

G 221-15 : 3111.1.1.1 (New)-
CUEVAS4746

G 222-15

3112 (New), 3112.1 (New), 3112.2 (New), 3112.3 (New), 3112.4 (New), 3112.5 (New), 3112.6 (New), 3112.6.1 (New)

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

2015 International Building Code

Add new text as follows:

SECTION 3112 GREENHOUSES

3112.1 General. The provisions of this section shall apply to structures defined as greenhouses by this code that are designed and used for the cultivation, maintenance, or protection of plants.

3112.2 Accessibility. Greenhouses shall be accessible in accordance with Chapter 11.

3112.3 Structural design. Greenhouses shall comply with the structural design requirements for greenhouses in Chapter 16.

3112.4 Glass and glazing. Glass and glazing used in greenhouses shall comply with Section 2405.

3112.5 Light-transmitting plastics. Light-transmitting plastics shall be permitted in lieu of plain glass in greenhouses and shall comply with Section 2606.

3112.6 Membrane structures. Greenhouses that are considered membrane structures shall comply with Section 3102.

3112.6.1 Plastic film. Plastic films used in greenhouses shall comply with Section 3102.3.

Reason: The word "greenhouse" is used throughout the IBC and important requirements for greenhouses are scattered throughout the code. They are often formatted as exceptions in sections that are otherwise unrelated to greenhouses, and could be easily overlooked by designers and enforcers. Therefore, the purpose of this proposal is to relocate (and direct the code user to) the current and relevant code requirements for greenhouses to a new section in Chapter 31, Special Construction. The new section will consolidate all the relevant information in the code into a single location without any technical changes to current code language.

The table below shows where the current code requirements are located in the 2015 IBC. The new section 3112 has pointers to these sections.

2015 IBC Section with Greenhouse Requirements

Chapter 312 Use Group U

Table 506.5 Group U Height and Area

1103.2.4 Accessibility Exception for Group U

Table 1604.3 Deflection Limits

1607.12.2.1 Ordinary roofs, awnings and canopies

1609.1.2 Structural design and protection of openings

2405.3 Exception 3 Screening

2606.11 Greenhouses. Light transmitting plastics

2607.4 Exception 3 Area limitation and separation

2609.4 Exception 3 Area limitations

3102.1 General. Membrane Structures

3102.3 Exception Type of Construction

3102.3.1 Exception - Membrane and interior liner material

Appendix C Group U Agricultural Buildings

Appendix D D105 Exceptions to Restrictions in Fire District

Appendix G G1001 Utility and miscellaneous Group U

There are numerous other Group U requirements that could apply to greenhouses.

This proposal, along with the other greenhouse proposals that modify the occupancies to include greenhouses, will assist the designers, other code users and code officials to more consistently apply the requirements for greenhouses. As greenhouse food production and scientific research becomes increasingly vital and sophisticated, a single code section on greenhouses will promote more consistent enforcement of current code text, and facilitate the introduction of new technology related to greenhouses in the future.

Cost Impact: Will not increase the cost of construction

There is no cost impact related to this proposal because this proposal only reorganizes and references existing code language into a new section.

G 222-15 : 3112 (New)-LOVELL4397

G 223-15

202 (New), 107.2.7 (New), 3101.1, 3112 (New), 3112.1 (New), 3112.1.1 (New), 3112.2 (New), 3112.3 (New), 3112.4 (New)

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

2015 International Building Code

Add new definition as follows:

SECTION 202 DEFINITIONS

RELOCATABLE BUILDING. A partially or completely assembled building constructed and designed to be reused multiple times and transported to different building sites.

Add new text as follows:

107.2.7 Relocatable buildings. Construction documents for relocatable buildings shall comply with this section and Section 3112.

Revise as follows:

3101.1 Scope. The provisions of this chapter shall govern special building construction including membrane structures, temporary structures, pedestrian walkways and tunnels, automatic vehicular gates, awnings and canopies, marquees, signs, and towers, antennas, and antennasrelocatable buildings.

Add new text as follows:

SECTION 3112 RELOCATABLE BUILDINGS

3112.1 General. The provisions of this section shall apply to relocatable buildings. Relocatable buildings manufactured after the effective date of this code shall comply with the applicable provisions of this code.

3112.1.1 Compliance. A newly constructed relocatable building shall comply with this code for new construction. An existing relocatable building that is undergoing alteration, addition, change of occupancy or relocation shall comply with Chapter 13 of the *International Existing Buildings Code*.

3112.2 Supplemental information. Supplemental information specific to a relocatable building shall be submitted to the authority having jurisdiction. It shall, as a minimum, include all of the following in addition to the information required by Section 105.

1. Manufacturer's name and address.
2. Date of manufacture.
3. Serial number of module.
4. Manufacturer's design drawings.
5. Type of construction in accordance with Section 602.
6. Design loads including: roof live load, roof snow load, floor live load, wind load and seismic site class, use group and design category.
7. Additional building planning and structural design data.
8. Site built structure or appurtenance attached to the relocatable building.

3112.3 Manufacturer's data plate. Each relocatable module shall have a data plate that is permanently attached on or adjacent to the electrical panel, and shall include the following information:

1. Occupancy group.
2. Manufacturer's name and address.
3. Date of manufacture.
4. Serial number of module.
5. Design roof live load, design floor live load, snow load, wind and seismic design.
6. Approved quality assurance agency or approved inspection agency.
7. Codes, and standards of construction.
8. Envelope thermal resistance values.
9. Electrical service size.
10. Fuel burning equipment and size.
11. Special limitations if any.

3112.4 Inspection agencies. The building official is authorized to accept reports of inspections conducted by approved inspection agencies during off-site construction of the relocatable building, and to satisfy the applicable requirements of Sections 110.3 through 110.3.10.1.

Reason: In July/2014 the ICC Board decided to sunset the activities of the Code Technology Committee (CTC). This is being accomplished by re-assigning many of the CTC Areas of Study to the applicable Code Action Committee (CAC). This proposal falls under the CTC Area of Study entitled Relocatable Modular Buildings. Information on the CTC, including: the sunset plan; meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the CTC website.

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

Unlike site-built buildings, which are typically intended to remain on their original site for the life of the building, relocatable modular buildings are designed and intended for relocation, reuse and/or repurposing. Many states have statutes that govern the building and relocating of relocatable modular buildings. For those that do not have state mandated requirements, much confusion and inconsistency exists about the requirements for relocatable modular buildings as existing buildings.

The Modular Building Institute (MBI) (www.modular.org) estimates that there are over 600,000 code compliant relocatable buildings in use in North America today. While it is impossible to determine the exact amount owned by the public at large, MBI estimates that public school districts across North America collectively own and operate about 180,000 relocatable classrooms with the industry owning and leasing an additional 120,000. Additionally, the industry owns and leases approximately 280,000 relocatable buildings for various other business occupancies, including construction site offices and temporary sales offices.

Unique characteristics of relocatable modular buildings that are unlike site-built buildings include:

- There are sections of the IBC that are applicable equally to both site-built and relocatable modular buildings, particularly for new construction.

- There are sections of the conflicting code sections that cannot be applied to both site-built and relocatable modular buildings, specifically related to construction documents, inspection, and relocation.

The IBC does not have specific requirements on how to treat these buildings. In the absence of clear definitions and requirements that are specific to both new and existing relocatable modular buildings, many code officials attempt to apply similar, but non-related sections of the building code intended for site built buildings to the relocatable modular industry. There are unique attributes to relocatable modular buildings that warrant their own requirements in a new chapter in this code.

Two proposals have been submitted on the subject of relocatable modular buildings. One proposal for new construction (this proposal) and a second proposal to address the relocation of modular buildings (proposal to the IEBC). This proposal includes:

- The definition has been reproduced from the definition that was added to the 2015 IEBC last cycle.
- Identification and inclusion of relocatables into Special Construction, Chapter 31. This chapter applies to new relocatable buildings, and also new site built structures.

Moving this document forward through the ICC code development process will help the modular building industry comply with the intent of the code, provide a clear and consistent path for enforcement professionals, and for compliance by owners of relocatable buildings who wish to re-use or repurpose their existing buildings.

Cost Impact: Will not increase the cost of construction

This code change proposal will not increase the cost of construction due to the re-usable/relocatable nature of such buildings.

G 223-15 : 3101.1-KULIK4952

G 224-15

3112 (New), 3112.1 (New), 3112.2 (New)

Proponent: Steve Martin, Representing the Florida Division of Emergency Management (steve.martin@em.myflorida.com); Sergio Ascunce, Representing the Building Officials Association of Florida (sascunce@cohb.org)

2015 International Building Code

Add new text as follows:

SECTION 3112 PUBLIC USE RESTROOM BUILDINGS IN FLOOD HAZARD AREAS

3112.1 Scope Restroom buildings intended for public use that are located in flood hazard areas shall be in accordance with this section. Public use toilet rooms, bathrooms, showers and changing rooms and spaces that are not elevated or protected in accordance with Section 1612 shall comply with Section 3112.2. Portions of buildings that include uses other than public use toilet rooms, bathrooms, showers and changing rooms and spaces shall be subject to the requirements of Section 1612.

3112.2 Flood resistance Public use restroom buildings and portions of buildings that include public use restrooms, that are located in flood hazard areas shall comply with the applicable requirements of ASCE 24 and shall:

1. Be limited to a footprint of not more than 1,500 square feet.
2. Be located, designed and constructed to resist the effects of flood hazards and flood loads to minimize flood damage from combination of wind and water loads associated with the base flood.
3. Be anchored to prevent flotation, collapse or lateral movement resulting from hydrostatic loads, including the effects of buoyancy during conditions of the design flood.
4. Be constructed of flood damage-resistant materials.
5. Have flood openings, where enclosed by walls.
6. Have mechanical and electrical systems that are located above the design flood elevation.
7. Have plumbing fixtures and plumbing connections that are located above the design flood elevation.
8. Have an emergency plan if the design specifies implementation of protection measures prior to the onset of flooding conditions.

Exceptions:

1. Minimum electric service required to address life safety and electric code requirements is permitted below the design flood elevation provided it conforms to the provisions of the electrical part of this code for wet locations.
2. Plumbing fixtures and connections are permitted below the design flood elevation provided the fixtures and connections are designed and installed to minimize or eliminate infiltration of floodwaters into the sanitary sewage system and discharges from sanitary sewage systems into floodwaters.

Reason: Thousands of communities have public open space and parks along rivers and shorelines. Many communities experience economic value from tourism and public access to areas that feature water resources. Under the current requirements of the IBC, restrooms for public use, if located in flood hazard areas, must meet the same requirements as residential and commercial buildings. In flood hazard areas other than coastal high hazard areas and Coastal A Zones (i.e., in flood zones identified on Federal Emergency Management Agency Flood Insurance Rate Maps with the letter "A"), restroom buildings may be elevated or dry floodproofed. In coastal high hazard areas (flood Zone V) and Coastal A Zones, the current requirements specify that restroom buildings must be elevated.

In Florida and other coastal states, this has resulted in building public use restrooms as high as 7 to 18 feet above grade. This poses many challenges, not the least of which is access. See Figures 1, 2, 3 and 4. While ramps can be built to meet ADA requirements, to reach some heights required in some flood hazard areas the ramps may be as long as 300 feet or the length of a football field. Such exceptionally long ramps defeat the purpose of low slope facilities when the distance of travel still renders restroom facilities inaccessible to many persons with disabilities. Although the IBC (and FEMA) permits elevators to extend below the base flood elevation, installing elevators to provide access to elevated public use restrooms is expensive and creates many maintenance issues, and a high rate of failure to function, especially in beach areas where blowing sand and wind-borne salt aerosols create corrosive conditions.

This proposal creates a new section in IBC Chapter 31, Special Construction to limit the scope to restroom buildings that include public use toilet rooms, bathrooms, showers and changing rooms and spaces. Portions of such buildings that include other uses would have to fully comply with the elevation and other flood resistant requirements of IBC Section 1612, Flood Loads, which references ASCE 24, Flood Resistant Design and Construction.

In recognition that most public use restrooms are built on public land using public funds, the proposal is to limit the exposure of public facilities in two ways: by limiting the footprint to not more than 1,500 square feet and by specifying design requirements. Enabling public use restrooms to be designed to be located below the base flood elevation and to withstand the base flood is a reasonable alternative to the extremely high cost for design, construction and maintenance of elevated structures. Although the proposed design requirements are intended to preclude significant damage during flood conditions up to and including conditions of the design flood (e.g., the base or 100-year flood), more severe floods can and do occur.

The proposal includes requirements for flood resistance similar to those found in IBC Appendix G, Section G1001 for Utility and Miscellaneous Group U and similar to the requirements of ASCE 24-14 for Flood Design Class 1 (which is essentially equivalent to Structure/Risk Category I). Those requirements effectively are the same as the NFIP requirements in 44 Code of Federal Regulations Section 60.3(a)(3)(ii), (iii), and (iv). FEMA deems the flood provisions of the I-Codes, with reference to ASCE 24, to meet or exceed the requirements of the National Flood Insurance Program (NFIP).

The intent is to allow public use restroom buildings to be at-grade, provided they meet the design requirements listed in 3112.1. The proponent acknowledges that, at present, FEMA guidance states that restroom buildings and comfort stations in coastal high hazard areas must be elevated and meet the same design and construction requirements as other buildings. This proposal is intended to meet the intent of the NFIP to minimize flood damage, while acknowledging the special needs and access appropriate for public use restrooms. The Florida Floodplain Management Association prepared a white paper on this subject: Policy and Design Options for Public Restrooms in Special Flood Hazard Areas (2014), www.FLfoods.org/ffmawhitepaper



Figure 1. Florida, flood Zone V. Ramp wraps around entire building. Has composting toilets, battery and solar electric system, emergency plan requires pumping out tank and filling with clean water.



Figure 3. Florida, Gulf Coast, flood Zone V. Ramp built after original elevator determined to be unsustainable due to significant maintenance problems.



Figure 2. Coastal Mississippi, flood Zone V. This facility cost \$1.1 million.



Figure 4. Southwest Florida, flood Zone V. Extensive ramp wraps around three sides.

Bibliography: Policy and Design Options for Public Restrooms in Special Flood Hazard Areas, Florida Floodplain Management Associations, 2014.
www.FLflooding.org/ffmawhitepaper

Cost Impact: Will not increase the cost of construction

The cost to build as specified to resist the effects of flood hazards and flood loads will be higher than a typical restroom building in a flood hazard area that is not designed to resist flood loads and flood damage (not currently allowed) but the cost will be less than the cost to elevate and provide extensive ramp systems (current method of compliance).

G 224-15 : 3112 (New)-MARTIN4949

G 225-15

3302.3

Proponent: Anthony Apfelbeck, City of Altamonte Springs Building/Fire Safety, representing City of Altamonte Springs
(ACApfelbeck@altamonte.org)

2015 International Building Code

Revise as follows:

3302.3 Fire safety and security during construction. Fire safety and security during construction shall comply with the applicable requirements of this code and the applicable provisions of Chapter 33 of the *International Fire Code*.

Reason: One of the primary fire causes during construction activity is arson. An effective method to mitigate this cause is implementing basic security actions. While chapter 33 of the IFC does provide a direct reference to NFPA 241 *Safeguarding Construction and Alteration Operations* and NFPA 241 does contain a number of provisions addressing on-site security including references to guard service, security fences and security of entrances, the need to review the security component is not obvious to the user of the code. The current pointer in the IBC to the IFC and NFPA 241 does not leave the user with the impression that security is a core component of the the construction site safety provisions necessary to ensure fire safety and an item to be addressed under the code. By inserting "and security" into the provisions of 3302.3, the importance of the security component is reinforced with the Code Official, contractor and designer.

Cost Impact: Will not increase the cost of construction

The reference to security is already provided in NFPA 241. This proposal does not change that reference.

G 225-15 : 3302.3-APFELBECK5333

G 226-15

3302.3, 3302.3.1 (New)

Proponent: William Hall, Portland Cement Association, representing Portland Cement Association (jhall@cement.org); Jason Thompson (jthompson@ncma.org); Jonathan Humble (jhumble@steel.org)

2015 International Building Code

3302.3 Fire safety during construction. Fire safety during construction shall comply with the applicable requirements of this code and the applicable provisions of Chapter 33 of the *International Fire Code*.

Add new text as follows:

3302.3.1 Special requirements for Type V buildings with combustible framing material. Where a building using combustible framing members exceeds the allowable height or number of stories for designation NS in Tables 504.3 or 504.4, the following shall be required:

1. The fire prevention program superintendent responsibilities required in Section 3308 of the International Fire Code shall be provided by an approved agency. The approved agency shall meet the following requirements:

1.1. Shall provide all information as necessary for the building official to determine that the agency meets the applicable requirements.

1.2. Shall be objective, competent and independent from the contractor or owner responsible for the fire prevention program.

1.3. Shall employ experienced personnel educated in supervising and evaluating safe jobsite practices to provide services to perform a fire watch and the enforcement of the fire prevention program.

2. Qualified personnel of the approved agency shall be onsite 24 hours of each day starting the day that framing materials are delivered to the site up through completion of the building.

3. Smoking and cooking shall be prohibited.

4. Temporary heating and hot work shall be supervised by the fire prevention program superintendent or agency.

Reason: Fires during construction have been on the increase across the U.S and other countries which utilize combustible construction in multi-story buildings. The intensity of these fires put adjacent buildings, businesses and residents at risk until the project is complete, which can take up to 2 years to complete or more if the project stalls. These fires are caused by a multitude of reasons including, but not limited to, arson, smoking, cooking, heating and hot work. Fire service, even in large well equipped jurisdictions cannot effectively stop these fires and most of these incidents end in total loss of the building under construction as well as damaged or destroyed adjacent buildings. Many times adjacent buildings are at risk due to the extreme heat, flying embers and wind speeds, as seen in the recent Los Angeles fire where paper, laying on a desk in an adjacent high rise structure caught fire and 6 six floors of the high rise were on fire.

The International Fire Code requires a Fire Prevention Program Superintendent be provided on all construction sites. This proposal would require that for combustible construction which is over the base allowable height or story, the agency or superintendent be onsite 24 hours a day to mitigate potential fire and conflagration.

Bibliography: <http://magazine.sfpd.org/fire-protection-design/fire-safety-buildings-under-construction>

Cost Impact: Will increase the cost of construction

This proposal will increase the cost of construction for buildings of Type V which are higher or contain more stories than the base allowable. The amount would be the cost difference to provide on a 24 hour basis, rather than daily basis which is already required by the fire code.

G 226-15 : 3302.3.1 (New)-HALL4716

G 227-15

3304.1.5 (New)

Proponent: Alexandria Shaw, Howard County Government Department of Inspections, Licenses and Permits; Plan Review Division, representing Self (aeshaw@howardcountymd.gov); George Martin (gmartin@howardcountymd.gov)

2015 International Building Code

Add new text as follows:

3304.1.5 Burial of construction debris. The burial of construction debris shall be prohibited on lots that are equal to or less than 20,000 square feet in area and contain Group R (Residential) occupancies.

The burial of inert debris that are not contaminated by hazardous substances in concentrations sufficient to cause environmental contamination shall be prohibited on lots greater than or equal to 20,000 square feet in area and contain Group R (Residential) occupancies, except where the debris is generated on-site.

Construction debris as defined in EPA 40 CFR Part 268 Subpart C, Prohibition on Land Disposal, shall not be buried.

Construction debris shall not be buried in proposed driveway or parking area locations and shall not be located less than 50 feet from existing or proposed buildings.

Existing in-ground swimming pools that are abandoned or are not in use shall not be buried on lots that are equal to or greater than 20,000 square feet in area and contain Group R (Residential) occupancies. The walls and the bottom of buried existing swimming pools shall be provided with ground water drainage holes spaced at not less than 5 feet on center. Vinyl pool liners shall not be buried. Pool coping shall be removed and buried within the pool. Pool related utilities shall be disconnected and removed. Well drainable soils shall be used as back fill.

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

EPA U.S. Environmental Protection Agency

40 CFR Part 268, Subpart C - 2005 Prohibition on Land Disposal

Reason: The IBC does not currently address this issue. It is feasible and realistic to have an enforceable policy implemented which outlines a more cost effective solution to handling certain residential construction debris. Additionally, allowing material to be buried rather than removed prevents negative erosion and sedimentation consequences.

Bibliography: "ECFR — Code of Federal Regulations." ECFR — Code of Federal Regulations. US Government Publishing Office, n.d. Web. 09 Jan. 2015.
<http://www.ecfr.gov/cgi-bin/text-idx?SID=9f532bd60026d6902b386fdf9b392beb&tpl=/ecfrbrowse/Title40/40Cisubchap1.tpl>

Cost Impact: Will not increase the cost of construction

The code change proposal will not increase the cost of construction. If anything, this code change proposal will serve to eliminate many costs of having to remove certain building material from the site that would not negatively impact the environment or property otherwise. Costs related to renting equipment for removal of debris and hauling, as well as dumping costs would be saved with this code change proposal.

Analysis: A review of the standard proposed for inclusion in the code, EPA 40 CFR Part 268 Subpart C, Prohibition on Land Disposal, 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.

G 227-15 : 3304.1.5 (New)-SHAW4884

G 228-15

3304.2 (New)

Proponent: Jonathan Humble, American Iron and Steel Institute, representing American Iron and Steel Institute (jhumble@steel.org); William Hall (jhall@cement.org); Larry Williams (Williams@steel framingassociation.org); Jason Thompson, Masonry Alliance for Codes and Standards, representing Masonry Alliance for Codes and Standards (jthompson@ncma.org)

2015 International Building Code

Add new text as follows:

3304.2 Access for fire fighting A vehicle access plan for fire fighting, complying with Section 3310 of the *International Fire Code*, shall be submitted to the fire department for review and approval prior to construction. For Type V construction with combustible building elements, four stories or more above grade plane, an approved vehicle access plan shall also demonstrate access to all sides of the building's perimeter for purposes of fire fighting.

Reason: The intent of IBC Chapter 33 (Safeguards During Construction) is to govern the provisions for safety during construction and the protection of adjacent properties. Unfortunately, the Chapter lacks requirements addressing the ability for fire fighters access to construction sites in cases of emergency. While on the surface this may be viewed as solely a fire department issue, we present a case here indicating that coordination should take place to ensure that this aspect is addressed prior to construction. The first part of this proposal is to have the simple reference to the International Fire Code Section 3310 (Access for Fire Fighting). It is the intent to use this proposal as a reference to what will be expected during construction and/or demolition of a project in accordance with the International Fire Code.

The second part of the proposal is to add planning requirements for buildings constructed of Type V combustible framing. Recent fires have demonstrated a need to recommend an additional enhancement to the provisions of the IBC. In these cases the size and volume of the buildings in those reported fires demonstrated a need to improve fire and life safeguards during construction. The four (4) story value was determined based on two sources; one – a review of other sections within IBC and IFC Chapter 33 where a height value was referenced (Sections 3310 and 3311); and two – analyzing fires of Type V construction and finding that buildings 4 stories or greater appeared to pose the greater threat to the building project and neighboring properties. Type V combustible construction when under construction represents a large quantity of combustible framing that when exposed will contribute to the spread and intensity of a fire.

Without adequate access, fire fighters have little options in extinguishing the fire or to protect adjacent property and occupants. We are therefore proposing to add the requirement for a plan of access for fire apparatus and fire fighters in order to have the opportunity fight the fire and protect adjacent properties with greater efficiency. We further believe that this proposal will compliment the provisions of the International Fire Code Section 3310, and Appendix D.

Cost Impact: Will increase the cost of construction

Providing vehicle access to all sides of the building's perimeter is currently required under IBC Section 3302.3, which sends the user to IFC Section 3310 (Access for Fire Fighting). Therefore, for the first part of this proposal there is no cost impact. However, the second part of this proposal will add a minor increase as the plan must be further enhanced to cover vehicle access to all sides of the project. The additional vehicle access to the project by fire fighters should outweigh that additional cost to prepare an enhanced plan as a result of the benefit of the increase access by the fire fighters, thus potentially reducing the spread of fire and the amount of fire damaged area to rebuild. The additional safety measure may also contribute to reducing the cost for construction insurance.

G 229-15

3310.1, [F] 3311.1

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

2015 International Building Code

Revise as follows:

3310.1 Stairways required. Where a building has been constructed to a building height of 50 construction exceeds 40 feet (15 240 mm) or four stories, or where an existing building exceeding 50 feet (15 240 12 192 mm) in building height is altered height above the lowest level of fire department vehicle access, no fewer than one a temporary lighted or permanent stairway shall be provided unless. As construction progresses, such stairway shall be extended to within one or more floor of the permanent stairways are erected as the highest point of construction progresses having secured decking or flooring.

[F] 3311.1 Where required. In buildings required to have standpipes by Section 905.3.1, no fewer than one standpipe shall be provided for use during construction. Such standpipes shall be installed prior to construction exceeding 40 feet (12 192 mm) in height above the lowest level of fire department vehicle access. Such standpipes shall be provided with fire department hose connections at accessible locations adjacent to ~~usable~~ stairways complying with Section 3310.1. Such ~~As construction progresses, such~~ standpipes shall be extended ~~as construction progresses~~ to within one floor of the highest point of construction having secured decking or flooring.

Reason: This proposal provides consistency of temporary stairway requirements with existing provisions for stair access to temporary standpipes and clarifies the timing of when access stairs shall be provided in a building under construction.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). 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 BCAC has held 13 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes and the public comments. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

The ICC Fire Code Action Committee (FCAC) also supports this proposal.

Cost Impact: Will increase the cost of construction

May increase or decrease the cost of construction depending on topography of construction site.

G 229-15 : 3310.1-KULIK4629

G 230-15

Section 3312.1 (New)

Proponent: Stephen Skalko, representing Masonry Alliance for Codes and Standards (svskalko@cox.net)

2015 International Building Code

Add new text as follows:

Section 3312.1 Completion during construction. Where an *automatic sprinkler system* is required by this code in buildings four or more stories in height of Types III, IV or V construction, the portion of the building or structure that is more than 40 feet in height above fire department vehicle access shall not begin construction until the *automatic sprinkler system* is operational for all stories below and has been tested and *approved*. Such *automatic sprinkler system* shall be extended as construction progresses to within one floor of the highest point of construction having secured decking or flooring.

Reason: Automatic sprinkler protection systems continue to be depended on to permit buildings to be built to larger heights and areas as allowed in Tables 504.3, 504.4 and 506.2 of the code. With these increases there has been a notable increase in fires, especially for Group R2 Residential Occupancies constructed of combustible framing, while the building is under construction. This has resulted significant loss of property for the building under construction and nearby properties exposed to the fire in part because important fire safety features such as passive fire protection for the combustible framing is not complete and automatic sprinkler system upon which these larger and taller buildings depend have not been made operational.

Besides the damage to the building under construction and to nearby properties some of these fires have required major street closures including interstates, and tied up firefighting resources to the extent that other areas of the communities were left under-protected for extended periods. A recent example is a major fire in Los Angeles with five stories of wood framing over a two story concrete podium on December 8, 2014 that not only resulted in millions of dollars in damage to the building under construction, but also damaged adjacent buildings. The apartment building known as the DaVinci was a complete loss after the fire that was fueled by the five stories of wood frame construction. More than 250 firefighters were dispatched to the scene. The burning of the structure's wooden frame forced the closure of northbound Harbor (110) Freeway and affected local streets causing major traffic disruptions for commuters and to the nearby business and residences. Buildings nearby were damaged by exposure to fire from the radiant heat as well as damage inside because the fire activated sprinklers in these adjacent buildings. It has been reported that the heat also melted or damaged computers and partition cubicles in neighboring building as well. The glazing in hundreds of windows of a nearby building was also damaged.

Besides this DaVinci fire other recent large combustible framed building fires that illustrate the risk of exposed combustible framing without operational sprinkler systems include:

1. Monroe Apartments, Portland, OR August 8, 2013
2. Student Apartments, Kingston, Ontario, CAN December 17, 2013
3. 550 East and 500 South, Salt Lake City, UT February 9, 2014
4. Commercial Building, Roxbury, MA March 3, 2014
5. Mission Bay Project, San Francisco, CA March 11, 2014
6. Axis Apartments, Houston, TX, March 25, 2014
7. Beacon Street, Boston, MA March 27, 2014
8. Gables Upper Rock, Rockville, MD April 1, 2014
9. SE Tech Center Drive, Vancouver, WA, June 19, 2014
10. Victoria Commons, Kitchener, Ontario, CAN, July 22, 2014
11. Apollo Way, Madison, WI August 8, 2014

Section 3311.1 of the code requires operational standpipes be in place when portions of buildings requiring standpipes are 40 feet or more above the lowest level of fire department vehicle access. This proposal takes a similar approach to the standpipe requirement for fire safety by requiring the sprinkler systems that are necessary to build these taller and larger buildings of combustible construction be operational when the construction reaches the 40 foot height above the fire department vehicle access. Too, like the standpipe requirements, the sprinkler system must be extended as each floor is provided with decking or flooring.

Cost Impact: Will increase the cost of construction

This proposal is expected to increase the cost of construction due to the sprinkler protection system having to be completed on lower floors before construction can begin higher up in the building. This increased cost however is necessary to reduce the risk of damage to adjacent properties due to fire exposure which results in economic hardship for repairs and disruption to businesses and residences, to minimize the impact to the public from traffic disruptions due to the size of the conflagrations, and to reduce the demand for fire service response due to these larger taller combustible framed buildings while under construction.

G 230-15 : 3312.1 (New)-SKALKO5518

G 231-15

3314 (New), 3314.1 (New)

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

2015 International Building Code

Add new text as follows:

SECTION 3314 **SAFETY OF INSPECTION PERSONNEL**

3314.1 General Inspection personnel shall be provided safe access, as approved by the inspector, to conduct inspections in accordance with Section 110.

Reason: Inspectors are frequently placed in the difficult position of feeling pressured to conduct inspection in conditions that they do not deem to be safe. Ladders, floor openings, lifts, scaffolding and other unprotected hazards maybe present and go uncorrected by a contractor since the inspector does not have authority order workplace safety corrections. However, an inspector should never feel pressured to be placed in an unsafe condition in order to complete an inspection. Just as there is an obligation to the public to provide a safe construction site, there is an obligation to ensure our staff is not placed in an inappropriate unsafe environment. This proposal would provide a code section for the inspection staff and building code official to reference when it is unsafe to conduct an inspection.

Cost Impact: Will increase the cost of construction

May increase the cost of construction in some limited circumstances where a inspection request is rejected due to an unsafe environment.

G 231-15 : 3314 (New)-
APFELBECK4105

G 232-15

3314 (New), 3314.1 (New)

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

2015 International Building Code

Add new text as follows:

SECTION 3314 FIRE WATCH

3314.1 Fire watch. Where required by the building official or fire code official, fire watch shall be provided during non-working hours for building construction that is combustible construction exceeding 40 feet in height above the lowest adjacent grade. Qualified personnel shall be provided to serve as an on-site fire watch and shall be provided with not less than one approved means for notification of the fire department. The sole duty of personnel providing fire watch shall be to perform constant patrols and watch for the occurrence of fire.

Reason: Add Section 3314 to require fire watch for construction sites with unprotected combustible construction exceeding 40 ft in height. This code change is necessary to protect adjacent properties in the event of fire when a construction site includes no construction activity. Recent fires have demonstrated the need for early notification that can only be provided by fire watch personnel since fire alarm and detection devices are normally not installed a working during framing operations. Early notification will limit the size of the fire and its impacts on surrounding buildings. Recent fires have demonstrated the tremendous heat release from unprotected combustible framing that impacted buildings more than 80 ft away from the construction site involved. While Section 3304 of the International Fire Code addresses precautions against fire it is mainly focused on construction activities causing a fire. The proposed code change addresses fire safety not caused by construction activities. Table 504.3 permits most Type VB construction with no sprinkler protection to be 40 ft above grade plane. Height above lowest adjacent grade has been selected to facilitate identification by inspection personnel without the need for a survey of the construction site.

Cost Impact: Will increase the cost of construction
This code change is necessary due to public safety concerns for adjoining properties.

G 232-15 : 3314 (New)-FATTAH5008

G 233-15

I103.1

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:

I103.1 Enclosure walls. Enclosure walls shall be permitted to be of any configuration, provided the open or glazed area of the longer wall and one additional wall is equal to at least 65 percent of the area below a minimum of 6 feet 8 inches (2032 mm) of each wall, measured from the floor. Openings shall be permitted to be enclosed with insect screening, ~~approved translucent or transparent plastic not more than 0.125 inch (3.2 mm) in thickness conforming to the provisions of Sections 2606 through 2611,~~ glass conforming to the provisions of Chapter 24, or any combination of the foregoing.

Reason: The Patio Cover Appendix contains language dating back to the UBC, and an arbitrary thickness limitation on the plastic panels. The history of this limit is related to the use of removable panels; that restriction is no longer applicable or appropriate. Furthermore, the chapter does not provide a clear path to ensuring the requirements in Chapter 26 apply. The proposal removes the maximum thickness and adds in a pointer to the appropriate requirements in Chapter 26.

Cost Impact: Will not increase the cost of construction

The proposal allows more product options and clarifies existing requirements; it does not add in any new restrictions.

G 233-15 : I103.1-FISCHER3639

G 234-15

APPENDIX N (New)

Proponent: Barry Greive, representing Target Corporation (barry.greive@target.com)

2015 International Building Code

Add new text as follows:

APPENDIX N

GUIDELINES FOR REPLICABLE BUILDINGS

SECTION N101 ADMINISTRATION.

N101.1 Purpose The purpose of this appendix is to provide a format and direction regarding the implementation of a replicable building program.

N101.2 Objectives. Replicable building programs allow a jurisdiction to recover from a natural disaster faster and allow for consistent application of the codes for replicable building projects. Replicable building programs result in faster turnaround for the end user, and a quicker turnaround through the plan review process.

SECTION N102 DEFINITIONS

N102.1 General. The following words and terms shall, for the purposes of this appendix, have the meanings shown herein. Refer to Chapter 2 of this code for general definitions.

REPLICABLE BUILDINGS. New and existing structures whose construction plans have been reviewed and deemed code compliant by a designated expert and accepted by the governing authority as substantially code compliant. Plans and associated documents are reviewed by the local authority for compliance with local amendments and conditions only.

SECTION N103 ESTABLISHMENT OF REPLICABLE BUILDING GUIDELINE PROGRAM

N103.1 Referenced guidelines. The replicable building program shall be implemented in accordance with the ICC G1.

SECTION N104 REFERENCED STANDARDS

GUIDELINES FOR REPLICABLE BUILDINGS

N104.1—~~ICC G1-2010 Guidelines for Replicable Buildings....103.1.~~

Add new standard(s) as follows: ICC G1-2010 Guidelines for Replicable Buildings

Reason: In August 2010 the International Code Council published a document titled the "IGG G1-2010 Guideline for Replicable Buildings". The intent of this guideline is to give jurisdictions a tool that they could adopt to help streamline their document review process to ensure code compliance. This code change proposal adds the "Guidelines" into an Appendix chapter so jurisdictions have an legal way of incorporating this concept into their building code adoption process. The intent is to streamline the plan review process at the local level by removing redundant reviews by allowing the plan reviewer to focus on any state and local amendments to the International Family of Codes.

Bibliography: ICC G1-2010 Guideline For Replicable Buildings, ICC, August 2010, p. 8

Cost Impact: Will not increase the cost of construction

This would be an increase in costs because the owner will need to have a third party plan review completed, but in jurisdictions that are using this concept the savings to an owner offset those expenses resulting in a savings.

Analysis: A review of the standard proposed for inclusion in the code, ICC G1-2010, 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.

G 234-15 : Appendix N (New)-
GREIVE4954

Proponent: Barry Greive, Target Corporation, representing Target Corporation (barry.greive@target.com)

2015 International Building Code

Add new text as follows:

APPEENDIX N
GUIDELINES FOR REPLICABLE BUILDINGS

SECTION N101
ADMINISTRATION

N101.1 Purpose. The purpose of this appendix is to provide a format and direction regarding the implementation of a Replicable Building Program.

N101.2 Objectives. Such programs allow a jurisdiction to recover from a natural disaster faster, allow for consistent application of the codes for replicable building projects. It will result in faster turnaround for the end user, and a quicker turnaround through the plan review process.

SECTION N102
DEFINITIONS

N102.1 Definitions. The following words and terms shall, for the purposes of this appendix, have the meanings shown herein.

REPLICABLE BUILDING. A building or structure utilizing a replicable design.

REPLICABLE DESIGN. A prototypical design developed for application in multiple locations with minimal variation or modification.

SECTION N103
REPLICABLE DESIGN REQUIREMENTS

N103.1 Prototypical construction documents. A replicable design shall establish prototypical construction documents for application at multiple locations. The construction documents shall include details appropriate to each wind region, seismic design category, and climate zone for locations in which the replicable design is intended for application. Application of replicable design shall not vary with regard to the following, except for allowable variations in accordance with Section N106.

1. Use and occupancy classification.
2. Building heights and area limitations.
3. Type of construction classification.
4. Fire resistance ratings.
5. Interior finishes.
6. Fire protection system.
7. Means of egress.
8. Accessibility.
9. Structural design criteria.
10. Energy efficiency.
11. Type of mechanical and electrical systems.
12. Type of plumbing system and number of fixtures.

SECTION N104
REPLICABLE DESIGN SUBMITTAL REQUIREMENTS

N104.1 General. A summary description of the replicable design and related construction documents shall be submitted to an approved agency. Where approval is requested for elements of the replicable design not within the scope of the *International Building Code*, the construction documents shall specifically designate the codes for which review is sought. Construction documents shall be signed, sealed and dated by a registered design professional.

N104.1.1 Architectural plans and specifications. Where approval of the architectural requirements of the replicable design is sought, the submittal documents shall include architectural plans and specifications as follows:

1. Description of uses and the proposed occupancy groups for all portions of the building.
2. Proposed type of construction of the building.
3. Fully dimensioned drawings to determine building areas and height.
4. Adequate details and dimensions to evaluate means of egress, including occupant loads for each floor, exit arrangement and sizes, corridors, doors, and stairs.
5. Exit signs and means of egress lighting, including power supply.
6. Accessibility scoping provisions.
7. Description and details of proposed special occupancies such as a covered mall, high-rise, mezzanine, atrium, and public garage.
8. Adequate details to evaluate fire resistive construction requirements, including data substantiating required ratings.
9. Details for plastics, insulation and safety glazing installation.
10. Details of required fire protection systems.
11. Material specifications demonstrating fire resistance criteria.

N104.1.2 Structural plans, specifications, and engineering details. Where approval of the structural requirements of the replicable design is sought, the submittal documents shall include details for each wind region, seismic design category and climate zone for which approval is sought; and shall include the following:

1. Signed and sealed structural design calculations which support the member sizes on the drawings.
2. Design load criteria, including: frost depth, live loads; snow loads; wind loads; earthquake design date; and other special loads
3. Details of foundations and superstructure.
4. Provisions for special inspections.

N104.1.3 Energy conservation details. Where approval of the energy conservation requirements of the replicable design is sought, the submittal documents shall include details for each climate zone for which approval is sought; and shall include the following:

1. Climate zones for which approval is sought.
2. Building envelope details.
3. Building mechanical system details.
4. Details of electrical power and lighting systems.
5. Provisions for system commissioning.

SECTION N105

REVIEW AND APPROVAL OF REPLICABLE DESIGN.

N105.1 General. Proposed replicable designs shall be reviewed by an approved agency. The review shall be applicable only to the replicable design features submitted in accordance with Section N104. The review shall determine compliance with this code and additional codes specified in Section N104.1.

N105.2 Documentation. The results of the review shall be documented indicating compliance with the code requirements.

N105.3 Deficiencies. Where the review of the submitted construction documents identifies elements where the design is deficient and will not comply with the applicable code requirements, the approved agency shall notify the proponent of the replicable design, in writing, of the specific areas of non-compliance and request correction.

N105.4 Approval. Where the review of the submitted construction documents determines that the design is in compliance with the codes designated in Section N104.4, and where deficiencies identified in Section N105.3 have been corrected the approved agency shall issue a summary report of Approved Replicable Design. The summary report shall include any limitations on the approved replicable design including, but not limited to climate zones, wind regions and seismic design categories.

SECTION N106

SITE SPECIFIC APPLICATION OF APPROVED REPLICABLE DESIGN

N106.1 General. Where site specific application of a replicable design that has been approved under the provisions of Section N105 is sought, the construction documents submitted to the building official shall comply with this section.

N106.2 Submittal documents. A summary description of the replicable design and related construction document shall be submitted. Construction documents shall be signed, sealed, and dated by the registered design professional. A statement, signed sealed and dated by the registered design professional, that the replicable design submitted for local review is the same as the replicable design reviewed by the approved agency shall be submitted.

N106.2.1 Architectural plans and specifications. Architectural plans and specifications shall include the following:

1. Construction documents for variations from the replicable design.
2. Construction for portions that are not part of the replicable design.
3. Documents for local requirements as identified by the building official.
4. Construction documents detailing the foundation system.

SECTION N107

SITE SPECIFIC REVIEW AND APPROVAL OF REPLICABLE DESIGN

N107.1 General. Proposed site specific application of replicable design shall be submitted to the building official in accordance with the provisions of Chapter 1 and Appendix N.

N107.2 Site specific review and approval of replicable design. The building official shall verify that the replicable design submitted for site specific application is the same as the approved replicable design reviewed by the approved agency. In addition, the building official shall review the following for code compliance.

1. Construction documents for variations from the replicable design.
2. Construction for portions of the building that are not part of the replicable design.
3. Documents for local requirements as identified by the building official.

Reason: In August 2010 the International Code Council published a document titled the "IGG G1-2010 Guideline for Replicable Buildings". The intent of this guideline is to give jurisdictions a tool that they could adopt to help streamline their document review process to ensure code compliance. This code change proposal adds the "Guidelines" into an Appendix chapter so jurisdictions have an legal way of incorporating this concept into their building code adoption process. The intent is to streamline the plan review process at the local level by removing redundant reviews by allowing the plan reviewer to focus on any state and local amendments to the International Family of Codes. There are currently many areas that have some form of expedited review process for replicable buildings. The basic approach is captured in the ICC G1-2010 Guidelines for Replicable Buildings.

Bibliography: ICC G-1-2010 Guidelines for Replicable Buildings

Cost Impact: Will not increase the cost of construction

This would be an increase in costs because the owner will need to have a third party plan review completed, but in jurisdictions that are using this concept the savings to an owner offset those expenses resulting in a savings.

G 236-15

N101 (New), N102 (New), N103 (New), N104 (New), N105 (New), N106 (New), N107 (New), N108 (New), N109 (New), N110 (New), N111 (New)

Proponent: William Hall (jhall@cement.org)

2015 International Building Code

Add new text as follows:

APPENDIX N

ENHANCED BUILDING RESILIENCE

SECTION N101

GENERAL

N101.1 Purpose. The purpose of this appendix is to promote enhanced public health, safety and general welfare and to reduce public and private property losses due to hazards and natural disasters associated with fires, flooding, high winds and earthquakes.

SECTION N102

BUILDING HEIGHTS AND AREA

N102.1 General. In order to limit the impact of fires on the building the building shall comply with Sections N102.1 through N102.3 and the requirements for Chapter 5.

N102.2 Building height, number of stories and allowable area. Building height, numbers of stories and allowable area shall be determined in accordance with N102.2.1 through N102.2.4.

N102.2.1 Height in feet. The maximum height, in feet, of a building shall not exceed the limits specified in Table N102 (1). Table N102 (1) shall be used in lieu of Table 504.3.

N102.2.1.1 Towers, spires, steeples and other roof structures. Towers, spires, steeples and other roof structures shall be permitted to meet the requirements in Section 504.3. Height in feet.

N102.2.2 Number of stories. The maximum number of stories of a building shall not exceed the limits specified in Table N102 (2). Table N102 (2) shall be used in lieu of Table 504.4.

N102.2.3 Allowable area factor, A_f . The allowable area factor, A_f , to be used in determining the allowable area of a building in accordance with Section 506.2.1, 506.2.3 or 506.2.4 shall be as specified in Table N102 (3). For application of Equations 5-1, 5-2 and 5-3, the value of NS shall be equal to the allowable area factor, A_f , from Table N102 (3). Table N102 (3) shall be used in lieu of Table 506.2.

TABLE N102 (1)^{a, b}

ALLOWABLE BUILDING HEIGHT IN FEET ABOVE GRADE PLANE

OCCUPANCY CLASSIFICATION	TYPE OF CONSTRUCTION					
	Type I		Type II	Type III	Type IV	Type V
	A	B	A	A	HT	A
A, B, E, F, M, S, U	UL	160	65	65	65	50
H-1, H2, H-3, H-5	UL	160	65	65	65	50
H-4	UL	160	65	65	65	50
I-1, Condition 1, I-3	UL	160	65	65	65	50
I-1, Condition 2, I-2	UL	160	65	65	65	50
I-4	UL	160	65	65	65	50
R	UL	160	65	65	65	50

For SI: 1 foot = 304.8 mm.

Note: UL = Unlimited

a. See Chapters 4 and 5 for specific exceptions to the allowable height in this chapter.

b. See Sections 903.2 and N106.2 for the minimum thresholds for protection by an automatic sprinkler system for specific occupancies.

TABLE N102 (2)^{a, b}

ALLOWABLE NUMBER OF STORIES ABOVE GRADE PLANE

OCCUPANCY CLASSIFICATION	TYPE OF CONSTRUCTION					
	Type I		Type II	Type III	Type IV	Type V
	A	B	A	A	HT	A
A-1	UL	5	3	3	3	2
A-2	UL	11	3	3	3	2
A-3	UL	11	3	3	3	2
A-4	UL	11	3	3	3	2
A-5	UL	UL	UL	UL	UL	UL

<u>B</u>	<u>UL</u>	<u>11</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>3</u>
<u>E</u>	<u>UL</u>	<u>5</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>1</u>
<u>F-1</u>	<u>UL</u>	<u>11</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>2</u>
<u>F-2</u>	<u>UL</u>	<u>11</u>	<u>5</u>	<u>4</u>	<u>5</u>	<u>3</u>
<u>H-1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>
<u>H-2</u>	<u>UL</u>	<u>3</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>1</u>
<u>H-3</u>	<u>UL</u>	<u>6</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>2</u>
<u>H-4</u>	<u>UL</u>	<u>7</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>3</u>
<u>H-5</u>	<u>4</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>
<u>I-1 Condition 1</u>	<u>UL</u>	<u>9</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>3</u>
<u>I-1 Condition 2</u>	<u>UL</u>	<u>9</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>3</u>
<u>I-2</u>	<u>UL</u>	<u>4</u>	<u>2</u>	<u>1</u>	<u>1</u>	<u>1</u>
<u>I-3</u>	<u>UL</u>	<u>4</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>
<u>I-4</u>	<u>UL</u>	<u>5</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>1</u>
<u>M</u>	<u>UL</u>	<u>11</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>3</u>
<u>R-1</u>	<u>UL</u>	<u>11</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>3</u>
<u>R-2</u>	<u>UL</u>	<u>11</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>3</u>
<u>R-3</u>	<u>UL</u>	<u>11</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>3</u>
<u>R-4</u>	<u>UL</u>	<u>11</u>	<u>4</u>	<u>4</u>	<u>4</u>	<u>3</u>
<u>S-1</u>	<u>UL</u>	<u>11</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>3</u>
<u>S-2</u>	<u>UL</u>	<u>11</u>	<u>5</u>	<u>4</u>	<u>5</u>	<u>4</u>
<u>U</u>	<u>UL</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>2</u>

For SI: 1 foot = 304.8 mm.

Note: UL = Unlimited

a. See Chapters 4 and 5 for specific exceptions to the allowable height in this chapter.

b. See Sections 903.2 and N106.2 for the minimum thresholds for protection by an automatic sprinkler system for specific occupancies.

TABLE N102 (3)^{a, b}

ALLOWABLE AREA FACTOR (A_t) IN SQUARE FEET

OCCUPANCY CLASSIFICATION	TYPE OF CONSTRUCTION					
	Type I		Type II	Type III	Type IV	Type V
	A	B	A	A	HT	A
<u>A-1</u>	<u>UL</u>	<u>UL</u>	<u>15,500</u>	<u>14,000</u>	<u>15,000</u>	<u>11,500</u>
<u>A-2</u>	<u>UL</u>	<u>UL</u>	<u>15,500</u>	<u>14,000</u>	<u>15,000</u>	<u>11,500</u>
<u>A-3</u>	<u>UL</u>	<u>UL</u>	<u>15,500</u>	<u>14,000</u>	<u>15,000</u>	<u>11,500</u>
<u>A-4</u>	<u>UL</u>	<u>UL</u>	<u>15,500</u>	<u>14,000</u>	<u>15,000</u>	<u>11,500</u>
<u>A-5</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>	<u>UL</u>
<u>B</u>	<u>UL</u>	<u>UL</u>	<u>37,500</u>	<u>28,500</u>	<u>36,000</u>	<u>18,000</u>
<u>E</u>	<u>UL</u>	<u>UL</u>	<u>26,500</u>	<u>23,500</u>	<u>25,500</u>	<u>18,500</u>
<u>F-1</u>	<u>UL</u>	<u>UL</u>	<u>25,000</u>	<u>19,000</u>	<u>33,500</u>	<u>14,000</u>
<u>F-2</u>	<u>UL</u>	<u>UL</u>	<u>37,500</u>	<u>28,500</u>	<u>50,500</u>	<u>21,000</u>
<u>H-1</u>	<u>21,000</u>	<u>16,500</u>	<u>11,000</u>	<u>9,500</u>	<u>10,500</u>	<u>7,500</u>
<u>H-2^d</u>	<u>21,000</u>	<u>16,500</u>	<u>11,000</u>	<u>9,500</u>	<u>10,500</u>	<u>7,500</u>
<u>H-3^d</u>	<u>UL</u>	<u>60,000</u>	<u>26,500</u>	<u>17,500</u>	<u>25,500</u>	<u>10,000</u>
<u>H-4</u>	<u>UL</u>	<u>UL</u>	<u>37,500</u>	<u>28,500</u>	<u>36,000</u>	<u>18,000</u>
<u>H-5</u>	<u>UL</u>	<u>UL</u>	<u>37,500</u>	<u>28,500</u>	<u>36,000</u>	<u>18,000</u>
<u>I-1</u>	<u>UL</u>	<u>55,000</u>	<u>19,000</u>	<u>16,500</u>	<u>18,000</u>	<u>10,500</u>
<u>I-2</u>	<u>UL</u>	<u>UL</u>	<u>15,000</u>	<u>12,000</u>	<u>12,000</u>	<u>9,500</u>
<u>I-3</u>	<u>UL</u>	<u>UL</u>	<u>15,000</u>	<u>10,500</u>	<u>12,000</u>	<u>7,500</u>
<u>I-4</u>	<u>UL</u>	<u>60,500</u>	<u>26,500</u>	<u>23,500</u>	<u>25,500</u>	<u>18,500</u>
<u>M</u>	<u>UL</u>	<u>UL</u>	<u>21,500</u>	<u>18,500</u>	<u>20,500</u>	<u>14,000</u>

R-1	UL	UL	24,000	24,000	20,500	12,000
R-2	UL	UL	24,000	24,000	20,500	12,000
R-3	UL	UL	UL	UL	UL	UL
R-4	UL	UL	24,000	24,000	20,500	12,000
S-1	UL	48,000	26,000	26,000	25,500	14,000
S-2 ^{b, c}	UL	79,000	39,000	39,000	38,500	21,000
U ^e	UL	35,500	19,000	14,000	18,000	9,000

Note: UL = Unlimited

For SI: 1 square foot = 0.0929 m²

a. See Chapters 4 and 5 for specific exceptions to the allowable height in this chapter.

b. See Sections 903.2 and N106.2 for the minimum thresholds for protection by an automatic sprinkler system for specific occupancies.

N102.3 Mixed occupancy and incidental use separations. All buildings containing mixed occupancies and incidental uses shall be provided with fire rated separations in accordance with Sections N102.3.1 and N102.3.2.

N102.3.1 Mixed occupancy separations. All occupancies except incidental uses in Table N102 (5) shall be separated from each other by fire barriers in accordance with Table N102 (4). Table N102 (4) shall be used in lieu of Table 508.4.

TABLE N102 (4)

REQUIRED SEPARATION OF OCCUPANCIES (HOURS)^d

Occupancy	A, E	B	I	R ^a	F-2, S-2 ^b , U	F-1, S-1, M	H-1	H-2	H-3, H-4, H-5
A, E.	2	2	2	2	1	2	NP	4	3
B	=	N	2	2	1	2	NP	3	2
I	=	=	2	2	2	2	NP	NP	NP
R ^a	=	=	=	2	2 ^c	2	NP	NP	NP
F-2, S-2 ^b , U	=	=	=	=	1	2	NP	4	3
F-1, S-1, M	=	=	=	=	=	2	NP	3	2
H-1	=	=	=	=	=	=	N	NP	NP
H-2	=	=	=	=	=	=	=	N	1
H-3, H-4, H-5	=	=	=	=	=	=	=	=	1

N = No fire rated separation requirement.

NP = Not permitted.

a. See Section 420.

b. The required separation from areas used only for private or pleasure vehicles shall be reduced by 1 hour but to not less than 1 hour.

c. See Section 406.3.4.

d. Except as required in Section N104.7.1, N104.7.2, N104.9.1 and N104.9.2, separation is not required between occupancies of the same classification.

N102.3.2 Separation of incidental uses. Incidental accessory occupancies shall be separated from the remainder of the building by fire barriers with a fire resistance rating in accordance with Table N102 (5). Table N102 (5) shall be used in lieu of Table 509.

TABLE N102 (5)

INCIDENTAL USES

ROOM OR AREA	SEPARATION AND/OR PROTECTION
Furnace room where any piece of equipment is over 400,000 Btu per hour input	1 hour
Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower	1 hour
Refrigerant machinery rooms	1 hour
Hydrogen cut-off rooms, not classified as Group H	1-hour in Group B, F, M, S and U occupancies. 2-hours in Group A, E, I and R occupancies.
Incinerator rooms	2 hour and provide automatic sprinkler system
Paint shops, not classified as Group H, located in occupancies other than Group F	2 hours and provide automatic fire-extinguishing system
In Group E occupancies, laboratories and vocational shops not classified as Group H	1 hour
In Group I-2 occupancies, laboratories not classified as Group H	1 hour and provide automatic sprinkler system

In ambulatory care facilities, laboratories not classified as Group H	1 hour or provide <u>automatic sprinkler system</u>
In Group I-2 laundry rooms over 100 square feet	1 hour
Group I-3 cells and Group I-2 patient rooms equipped with padded surfaces	1 hour
In Group I-2, physical plant maintenance shops	1 hour
In ambulatory care facilities or Group I-2 occupancies waste and linen collection rooms with containers that have an aggregate volume of 10 cubic feet or greater	1 hour
In other than ambulatory care facilities and Group I-2 occupancies, waste and linen collection rooms over 100 square feet	1 hour
In ambulatory care facilities or Group I-2 occupancies, storage rooms greater than 100 square feet	1 hour
Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons for flooded lead-acid, nickel cadmium or VRLA , or more than 1000 pounds for lithium-ion and lithium metal polymer used for facility standby power, emergency power or uninterrupted power supplies	1-hour in Group B, F, M, S and U occupancies. 2-hours in Group A, E, I and R occupancies.

SECTION N103 TYPES OF CONSTRUCTION

N103.1 General. In order to limit the impact of fires on the building the building shall comply with Section N103.2 and the requirements in Chapter 6.
N103.2 Fire-resistance rating. Building elements shall have a fire resistance rating not less than that specified in Table N103 (1) and exterior walls shall have a fire resistance rating not less than that specified in Table 602 . Table N103 (1) shall be used in lieu of Table 601.

TABLE N103 (1)

FIRE-RESISTANCE RATING REQUIREMENT FOR BUILDING ELEMENTS (HOURS)^a

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A	B	A	B		A	B
Primary Structural Frame ^{g,h}	3 ^b	2 ^b	1	NP	1	NP	HT	1	NP
Bearing Walls	-	-	-	-	-	-	-	-	-
Exterior ^{f,g}	3	2	1	NP	2	NP	2	1	NP
Interior	3 ^b	2 ^b	1	NP	1	NP	1/HT	1	NP
Tenant Separation	- See Section N104.7.1 and N104.9.1 See Section N104.7.2 and N104.9.2 See Section 402.4.2.1								
Residential spaces									
Non-residential spaces									
Mall tenant spaces									
Non-bearing Walls and Partitions	-	-	-	-	-	-	See Section 602.4.6	-	-
Interior ^e	0	0	0	NP	0	NP		0	NP
Floor Construction and Secondary Members ^h	2	2	1	NP	1	NP	HT	1	NP
Roof Construction and Secondary Members ^h	1 1/2 ^b	1 ^{c,d}	1 ^{c,d}	NP	1 ^{c,d}	NP	HT	1 ^{c,d}	NP

For SI: 1 foot = 304.8 mm.

NP = Not Permitted.

^a The requirements in this table take precedence over Table 601, *Fire resistance rating for building elements*.

^b Roof supports: Fire-resistance rating of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.

^c Fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire retardant wood members shall be allowed to be used for such unprotected members.

^d In all occupancies, heavy timber shall be allowed where 1-hour or less fire-resistance rating is required.

^e Not less than the fire-resistance rating required by other Sections.

^f Not less than the fire-resistance rating based on fire separation distance (see Table 602).

^g Not less than the fire-resistance rating as referenced in Section 704.10.

^h See Section 202 . *Definitions*.

SECTION N104 FIRE PROTECTION FEATURES

N104.1 General. In order to limit the impact of fires on the building the building shall comply with Sections N104.1 through N104.12 and the requirements for Chapter 7.

N104.2 Buildings on the same lot. Exception 2 for the reduced fire resistance rated opening protective for R-2 buildings in Section 705.3. Buildings on the same lot shall not be permitted.

N104.3 Allowable area of openings. The maximum area of unprotected and protected openings permitted in an exterior wall in any story of the building shall not exceed the percentages specified in Table N104 (1). Table N104 (1) shall be used in lieu of Table 705.8.

N104.4 Protected openings. The exception for opening protectives in Section 705.8.2. Protected openings shall not be permitted.

N104.5 Vertical separation of openings. Exception 2 that eliminates vertical separation of openings where automatic sprinklers are present in Section 705.8.5. Vertical separation of openings shall not be permitted.

N104.6 Parapets. Exceptions 4 and 5 in Section 705.11, Parapet construction that eliminates exterior wall parapets shall not be permitted for Group R-2 occupancies.

N104.7 Fire walls. Fire walls shall meet the requirements of this section.

N104.7.1 Materials. Fire walls for all types of construction shall be of any approved noncombustible material permitted in NFPA 221.

N104.7.2 Fire-resistance rating. The fire-resistance ratings shall meet or exceed the ratings provided in Table N104 (2). Table N104 (2) shall be used in lieu of Table 706.4.

N104.7.3 Exceptions 2 and 4 in Section 706.6. Vertical continuity that allows termination of fire walls at the underside of roof sheathing or decks shall not be permitted.

N104.7.4 Exception 2 in Section 706.8. Openings that allows increased area of openings through fire walls where *automatic sprinkler systems* are present shall not be permitted.

N104.8 Fire barriers. Fire barriers shall comply with the provisions of this section.

N104.8.1 Separation of dwelling units and sleeping units. The separation between individual *dwelling units* and *sleeping units*, and between *dwelling units* and *sleeping units* and other spaces in the building shall be *fire barrier assemblies* or *horizontal assemblies* with a minimum *fire-resistance rating* of 2-hour.

N104.8.2 Separation of tenant spaces. Individual tenant spaces in a building shall be separated by *fire barrier assemblies* or *horizontal assemblies*, or both, with a minimum *fire-resistance rating* of 1-hour and the requirements of Section 508 Mixed Use and Occupancy.

N104.8.3 Exception 1 in Section 707.6. Openings that allows openings in a fire barrier to be larger than 156 square feet where *automatic sprinkler systems* are provided shall not be permitted.

N104.9 Fire partitions. Fire partitions shall comply with the provisions of this section.

N104.9.1 Fire partitions in Section 708.1 shall not be permitted for walls separating dwelling units in the same building.

N104.9.2 Fire partitions in Section 708.1 shall not be permitted for walls separating sleeping units in the same building.

N104.9.3 Fire partitions in Section 708.3, Fire-resistance rating shall not be permitted for corridor walls separating corridors from dwelling units or sleeping units in the same building.

N104.9.4 Exceptions 1 and 2 in Section 708.3, Fire-resistance rating that allows a reduction in the fire resistance rating of corridors and separations between dwelling units and sleeping units shall not be permitted.

N104.9.5 Exception 6 in Section 708.4, that allows elimination of fireblocking or draftstopping shall not be permitted.

N104.10 Horizontal assemblies. Horizontal assemblies shall comply with the requirements of this Section.

N104.10.1 Separation of dwelling units and sleeping units. The separation between individual *dwelling units* and *sleeping units*, and between *dwelling units* and *sleeping units* and other spaces in the building shall be *fire barrier assemblies* or *horizontal assemblies* with a minimum *fire-resistance rating* of 2-hour.

N104.10.2 Separation of tenant spaces. Individual tenant spaces in a building shall be separated by *fire barrier assemblies* or *horizontal assemblies*, or both, with a minimum *fire-resistance rating* of 1-hour and the requirements of Section 508, Mixed Use and Occupancy.

N104.10.3 The exception in Section 711.2.4.3 that allows a reduction of the fire-resistance rating of separations between dwelling unit and sleeping unit where *automatic sprinkler systems* are present shall not be permitted.

N104.11 Enclosed elevator lobby. Sprinkler protection or smoke partitions shall not be permitted to substitute for fire partitions in accordance with Section 708 for elevator lobby enclosures in Section 3007 Elevator lobbies where fire partitions are required.

N104.12 Opening protectives. The provisions of this section shall apply to opening protectives.

N104.12.1 The Exception in Section 716.5.5 that eliminate the maximum transmitted temperature requirements shall not be permitted.

N104.13 Concealed spaces. The provisions of this section shall apply to concealed spaces.

N104.13.1 Groups R-1, R-2, R-3 and R-4. Exceptions 1 and 2 in Section 718.3.2 that eliminate draftstopping where automatic sprinkler systems are present shall not be permitted for Groups R-1, R-2 or R-4 occupancies.

N104.13.2 Other groups. The exception in Section 718.3.3 that eliminates draftstopping where automatic sprinkler systems are present shall not be permitted.

TABLE N104 (1)

MAXIMUM AREA OF EXTERIOR WALL OPENING BASED ON FIRE SEPARATION DISTANCE AND DEGREE OF OPENING PROTECTION^a

Fire Separation Distance (feet)	Degree of Opening Protection	Allowable Areas ^b
0 to less than 3 ^{c,d}	Unprotected (UP)	Not Permitted
	Protected (P)	Not Permitted
-		
3 to less than 5 ^e	Unprotected (UP)	Not Permitted
	Protected (P)	15%
-		
5 to less than 10 ^a	Unprotected (UP)	10%
	Protected (P)	25%
-		
10 to less than 15 ^{f,g}	Unprotected (UP)	15%
Protected (P)	45%	
-		
15 to less than 20 ^{f,g}	Unprotected (UP)	25%

	Protected (P)	75%
-		
20 to less than 25 ^{f,g}	Unprotected (UP)	45%
	Protected (P)	No Limit
-		
25 to less than 30 ^{f,g}	Unprotected (UP)	70%
	Protected (P)	No Limit
-		
30 or greater	Unprotected (UP)	No Limit
	Protected (P)	Not Required

For SI: 1 foot = 304.8 mm

UP = Unprotected openings in buildings

P = Openings protected with an opening protective assembly in accordance with Section 705.8.2

^a The requirements in this table take precedence over Table 705.8.

^b Values indicated are the percentage of the area of the exterior wall per story.

^c For the requirements for fire walls of buildings with differing heights see Section 706.6.1.

^d For openings in a fire wall for buildings on the same lot, see Section 705.8.

^e The maximum percentage of unprotected and protected openings shall be 25 percent for Group R-3 occupancies.

^f The area of unprotected and protected openings shall not be limited for Group R-3 occupancies with a fire separation distance of 5 feet or greater.

^g Includes buildings accessory to Group R-3.

TABLE N104 (2)

FIRE WALL FIRE-RESISTANCE RATINGS

GROUP	FIRE-RESISTANCE RATING (hours)
A, B, E, H-4, I, R-1, R-2, U	3
F-1, H-3 ^a , H-5, M, S-1	3
H-1, H-2	4 ^a
F-2, S-2, R-3, R-4	2

a. For Group H-1, H-2 or H-3 buildings, also see Sections 415.4 and 415.5.

SECTION N105
INTERIOR FINISHES

N105.1 General. In order to limit the impact of fires on the building the building shall comply with Sections N105.1 through N105.3 and the requirements for Chapter 8.

N105.2 Interior wall and ceiling finishes. Interior wall and ceiling finishes and conform to the requirements of this section.

N105.2.1 Finish by occupancy. Interior wall and ceiling finishes based on occupancy shall conform to the requirements in Table N105 (1). Table N105 (1) shall be used in lieu of Table 803.9.

TABLE N105 (1)

INTERIOR WALL AND CEILING FINISH REQUIREMENTS BY OCCUPANCY

GROUP	Interior exit stairways and ramps and exit passageways ^a	Corridors and enclosure for exit access stairways and ramps	Rooms and enclosed spaces ^b
A-1, A-2	A	A	B
A-3, A-4, A-5	A	A	C
B, E, M, R-1, R-4	A	B	C
F	B	C	C
H	A	A	B
I-1	A	B	B
R-2	B	B	C
R-3	A	C	C
S	B	B	C
U	No Restrictions		

For SI: 1 inch = 25.4 mm, 1 square inch = 0.0929m²

^a Class C interior finish materials shall be permitted for wainscoting or paneling of not more than 1,000 square feet of applied surface area in the grade lobby where applied directly to a noncombustible base or over furring strips applied to a noncombustible base and fire blocked as required by Section 803.11.1.

^b Requirements for rooms and enclosed spaces shall be based upon spaces enclosed by partitions. Where a fire-resistance rating is required for

structural elements, the enclosing partitions shall extend from the floor to the ceiling. Partitions that do not comply with this shall be considered enclosing spaces and rooms or spaces on both sides shall be considered as one. In determining the applicable requirements for rooms and enclosed spaces, the specific occupancy thereof shall be the governing factor regardless of the group classification of the building or structure.

N105.2.2 Set-out construction. Exception 1 in Section 803.11.2 shall not be permitted.

N105.3 Interior floor finishes. The Exception in Section 804.4.2 which eliminates the requirement for minimum critical radiant flux for floor finishes and floor coverings in exit enclosures, exit passageways, and corridors where *automatic sprinkler systems* are provided shall not be permitted.

SECTION N106 FIRE PROTECTION SYSTEMS

N106.1 General. In order to limit the impact of fires on the *building* the *building* shall comply with Sections N106.2 through N106.5 and the requirements for Chapter 9.

N106.2 Automatic sprinkler protection. An *approved automatic sprinkler system* shall be provided throughout all new buildings in accordance with Section 903.2 and Sections N106.2.1 through N106.2.7.

N106.2.1 Group A. An *automatic sprinkler system* shall be provided throughout buildings and portions thereof used as Group A occupancies as provided in this section.

N106.2.1.1 Group A-1. An *automatic sprinkler system* shall be provided for Group A-1 occupancies where one of the following conditions exists:

1. The fire area exceeds 6,000 square feet (557.5 m²);
2. The fire area has an occupant load of 150 or more;
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies; or
4. The fire area contains a multitheater complex.

N106.2.1.2 Group A-2. An *automatic sprinkler system* shall be provided for Group A-2 occupancies where one of the following conditions exists:

1. The fire area exceeds 2,500 square feet (232.2 m²);
2. The fire area has an occupant load of 50 or more; or
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.

N106.2.1.3 Group A-3. An *automatic sprinkler system* shall be provided for Group A-3 occupancies where one of the following conditions exists:

1. The fire area exceeds 6,000 square feet (557.5 m²);
2. The fire area has an occupant load of 150 or more; or
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.

N106.2.1.4 Group A-4. An *automatic sprinkler system* shall be provided for Group A-4 occupancies where one of the following conditions exists:

1. The fire area exceeds 6,000 square feet (557.5 m²);
2. The fire area has an occupant load of 150 or more; or
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.

N106.2.2 Group E. An *automatic sprinkler system* shall be provided for Group E occupancies as provided in this section:

1. Throughout all Group E fire areas greater than 6,000 square feet (557.5 m²) in area.
2. Throughout every portion of educational buildings below the lowest level of exit discharge serving that portion of the building.

Exception: An *automatic sprinkler system* is not required in any area below the lowest level of exit discharge serving that area where every classroom throughout the building has at least one exterior exit door at ground level.

N106.2.3 Group F-1. An *automatic sprinkler system* shall be provided throughout all buildings containing a Group F-1 occupancy where one of the following conditions exists:

1. A Group F-1 fire area exceeds 6,000 square feet (557.5 m²);
2. A Group F-1 fire area is located more than three stories above grade plane.
3. The combined area of all Group F-1 fire areas on all floors, including any mezzanines, exceeds 12,000 square feet (1105 m²).
4. A Group F-1 occupancy used for the manufacture of upholstered furniture or mattresses exceeds 2,500 square feet (232 m²).

N106.2.3.1 Woodworking operations. An *automatic sprinkler system* shall be provided throughout all Group F-1 occupancy fire areas that contain woodworking operations in excess of 2,500 square feet (232 m²) in area which generate finely divided combustible waste or use finely divided combustible materials.

N106.2.4 Group M. An *automatic sprinkler system* shall be provided throughout buildings containing a Group M occupancy where one of the following conditions exists:

1. A Group M fire area exceeds 6,000 square feet (557.5 m²);
2. A Group M fire area is located more than three stories above grade plane.
3. The combined area of all Group M fire areas on all floors, including any mezzanines, exceeds 12,000 square feet (1105 m²).
4. A Group M occupancy used for the display and sale of upholstered furniture or mattresses exceeds 2,500 square feet (232 m²).

N106.2.5 Group S-1. An *automatic sprinkler system* shall be provided throughout all buildings containing a Group S-1 occupancy where one of the following conditions exists:

1. A Group S-1 fire area exceeds 6,000 square feet (557.5 m²);
2. A Group S-1 fire area is located more than three stories above grade plane.
3. The combined area of all Group S-1 fire areas on all floors, including any mezzanines, exceeds 12,000 square feet (1105 m²).
4. A Group S-1 fire area used for the storage of commercial trucks or buses where the fire area exceeds 2,500 square feet (232 m²).

5. A Group S-1 occupancy used for the display and sale of upholstered furniture or mattresses exceeds 2,500 square feet (2326 m²).

N106.2.5.1 Repair garages. An *automatic sprinkler system* shall be provided throughout all buildings used as repair garages in accordance with Section 406, as shown:

1. Buildings having two or more stories above grade plane, including basements, with a *fire area* containing a repair garage exceeding 5000 square feet (464 m²).
2. Buildings no more than one story above grade plane, with a *fire area* containing a repair garage exceeding 6,000 square feet (557.5 m²).
3. Buildings with repair garages servicing vehicles parked in basements.
4. A Group S-1 fire area used for the repair of commercial trucks or buses where the *fire area* exceeds 2,500 square feet (232 m²).

N106.2.5.2 Bulk storage of tires. Buildings and structures where the area for the storage of tires exceeds 10,000 cubic feet (283 m³) shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

N106.2.6 Group S-2 enclosed parking garages. An *automatic sprinkler system* shall be provided throughout buildings classified as enclosed parking garages in accordance with Section 406.4 as follows:

1. Where the *fire area* of the enclosed parking garage exceeds 6,000 square feet (557.5 m²); or
2. Where the enclosed parking garage is located beneath other groups.

Exception: Enclosed parking garages located beneath Group R-3 occupancies.

N106.2.6.1 Commercial parking garages. An *automatic sprinkler system* shall be provided throughout buildings used for storage of commercial trucks or buses where the *fire area* exceeds 2,500 square feet (232 m²).

N106.2.7 Group B. An *automatic sprinkler system* shall be provided throughout buildings containing a Group B occupancy where one of the following conditions exists:

1. A Group B *fire area* exceeds 6,000 square feet (556 m²).
2. A Group B *fire area* is located more than three stories above grade plane.
3. The combined area of all Group B *fire areas* on all floors, including any mezzanines, exceeds 12,000 square feet (1,115 m²).

N106.3 Automatic Sprinkler Systems. Sprinkler systems shall be designed and installed in accordance with Section 903.3.1.1 NFPA 13 sprinkler systems. Sprinkler systems designed and installed in accordance with Section 903.3.1.2 NFPA 13R sprinkler systems shall not be permitted.

N106.4 Standpipes. Standpipes shall comply with the requirements of this Section.

N106.4.1 The exception to Section 905.4.1, Protection that allows elimination of the fire-resistance rated enclosure for laterals where *automatic sprinkler systems* are provided shall not be permitted.

N106.5 Fire Alarm and Detection Systems. Fire alarms and detection systems shall comply with the provisions of this Section.

N106.5.1 Manual pull station. The number of manual pull stations required in Section 907 Fire alarm and detection systems for fire alarm systems shall not be permitted to be reduced or eliminated where *automatic sprinkler systems* are provided.

SECTION N107

MEANS OF EGRESS

N107. 1 General. In order to limit the impact of fires on the *building* the *building* shall comply with Sections N107.1 through N107.7 and the requirements for Chapter 10.

N107.2. Means of egress capacity factor. The means of egress capacity factor used for calculating the egress capacity for stairways in Section 1005.3.1 shall be 0.3 inch (7.6 mm) per occupant with no reduction for automatic sprinkler protection in the building. The means of egress capacity factor used for calculating the egress capacity for other egress components in Section 1005.3.2 shall be 0.2 inch (5.1 mm) per occupant with no reduction for automatic sprinkler protection in the building.

N107.2. Accessible means of egress. Accessible means of egress shall comply with the requirements of this Section.

N107.2.1 Exception 2 of Section 1009.3. Stairways that reduces in the clear width between handrails shall not be permitted.

N107.2.2 Exception 5 of Section 1009.3. Stairways that eliminates of areas of refuge shall not be permitted.

N107.2.3 Exception 2 of Section 1009.4. Elevators that eliminates requirements for elevator access from areas of refuge or horizontal exit shall not be permitted.

N107.3 Stairways. The exception for Section 1009.7.4 Stairways that reduces in the clear width between handrails shall not be permitted.

N107.4 Exits and exit access. The exit and exit access shall comply with the requirements in Tables N107 (1) and N107 (2). Table N107 (1) shall be used in lieu of Table 1006.3.2 (1). Table N107 (2) shall be used in lieu of Table 1006.3.2 (2).

TABLE N107 (1)
STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT FOR R-2 OCCUPANCIES

STORY	OCCUPANCY	MAXIMUM NUMBERS OF DWELLING UNITS	MAXIMUM EXIT ACCESS TRAVEL DISTANCE
Basement, first, or second story above grade plane	R-2 ^{a, b}	4 dwelling units	125 feet
Third story above grade plane and higher	NP	NA	NA

For SI: 1 foot = 304.8 mm.

NP – Not Permitted

NA – Not Applicable

a. Buildings classified as Group R-2 equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 and provided with *emergency escape and rescue openings* in accordance with Section 1030.

b. This table is used for R-2 occupancies consisting of *dwelling units*. For R-2 occupancies consisting of *sleeping units*, use Table N107 (2).

TABLE N107 (2)

STORIES WITH ONE EXIT OF ACCESS TO ONE EXIT FOR OTHER OCCUPANCIES

<u>STORY</u>	<u>OCCUPANCY</u>	<u>MAXIMUM OCCUPANT LOAD PER STORY</u>	<u>MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE (feet)</u>
<u>First story above or below grade plane</u>	<u>A, B, E, F, M, U</u>	<u>49</u>	<u>75</u>
	<u>H-2, H-3</u>	<u>3</u>	<u>25</u>
	<u>H-4, H-5, I, R-1, R-2^a, b, R-4</u>	<u>10</u>	<u>75</u>
	<u>S^c</u>	<u>29</u>	<u>75</u>
<u>Second story above grade plane</u>	<u>B, F, M, S^c</u>	<u>29</u>	<u>75</u>
<u>Third story above grade plane and higher</u>	<u>NP</u>	<u>NA</u>	<u>NA</u>

For SI: 1 foot = 304.8 mm.

NP – Not Permitted

NA – Not Applicable

a. Buildings classified as Group R-2 equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 and provided with *emergency escape and rescue openings* in accordance with Section 1030.

b. This table is used for R-2 occupancies consisting of *sleeping units*. For R-2 occupancies consisting of *dwelling units*, use Table 1006.3.2(1).

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

N107.5 Exits and exit access doorways. Exits and exit access doorways shall comply with the requirements of this Section.

N107.5.1 Exception 1 in Section 1006.2.1. Egress based on occupant load and common path of egress travel, that reduces the number of means of egress shall not be permitted.

N107.5.2 Exception 2 of Section 1007.1.1. Two exits or exit access doorways, that reduces the separation distance between exit doors and between exit access doors shall not be permitted.

N107.6 Exit access travel distance. Exit access travel distance shall comply with the requirements in Table N107 (2) and this Section. Table N107 (3) shall be used in lieu of Table 1017.2.

TABLE N107 (3)
EXIT ACCESS TRAVEL DISTANCE^a

<u>OCCUPANCY</u>	<u>DISTANCE (feet)</u>
<u>A, E, F-1, M, R, S-1</u>	<u>200</u>
<u>I-1, I-2</u>	<u>200</u>
<u>B</u>	<u>200</u>
<u>F-2, S-2, U</u>	<u>300</u>
<u>H-1</u>	<u>75</u>
<u>H-2</u>	<u>100</u>
<u>H-3</u>	<u>150</u>
<u>H-4</u>	<u>175</u>
<u>H-5</u>	<u>200</u>
<u>I-3, I-4</u>	<u>150</u>

For SI: 1 foot = 304.8 mm.

a. See the following sections for modifications to *exit access* travel distance requirements:

Section 402.8: For the distance limitation in *malls*.

Section 404.9: For the distance limitation through an *atrium space*.

Section 407.4: For the distance limitation in Group I-2.

Sections 408.6.1 and 408.8.1: For the distance limitations in Group I-3.

Section 411.4: For the distance limitation in special amusement buildings.

Section 412.7: For the distance limitation in aircraft manufacturing facilities.

Section 1006.2.2.2: For the distance limitation in refrigeration machinery rooms.

Section 1006.2.2.3: For the distance limitation in refrigerated rooms and spaces.

Section 1006.3.2: For buildings with one *exit*.

Section 1017.2.2: For increased distance limitation in Groups F-1 and S-1.

Section 1029.7: For increased limitation in assembly seating.

Section 1028.7: For increased limitation for assembly open-air seating.

Section 3103.4: For temporary structures.

Section 3104.9: For pedestrian walkways.

N107.6.1 Distance limitations through atrium spaces shall conform to Section 404.

N107.6.2 Exit access in buildings with one exit shall conform to Section 1006.3.2.

N107.7 Corridors. Corridors shall comply with the requirements of this section.

N107.7.1 The fire-resistance rating of corridor walls shall be at least 1-hour.

N107.7.2 Exception 2 in Section 1020.4. Dead ends that increases the length of dead-end corridors shall not be permitted.

SECTION N108

EXTERIOR WALLS

N108.1 General. Exterior wall coverings shall comply with Sections N108.2 through N108.4 and the requirements for exterior walls in Chapter 14 and plastics in Chapter 26.

N108.2 Exterior wall covering limitations for reduced damage from fire. Exterior wall coverings shall comply with N108.2.1 and N108.2.2 to reduce damage from fire exposure. Exception. These criteria shall not apply where Sections 1406.2.1 through 1406.2.3 are satisfied.

N108.2.1 Vinyl siding and Exterior insulation and finish systems (EIFS). Vinyl siding and Exterior insulation and finish systems (EIFS) shall only be permitted to be installed on exterior walls of buildings with a minimum fire separation distance of 30 feet.

N108.2.2 Fire Separation 5 Feet or Less. Combustible exterior wall coverings are not permitted on exterior walls having a fire separation distance of 5 feet (1524 mm) or less.

N108.3 Exterior wall covering limitations for reduced damage from hail. Vinyl siding and Exterior insulation and finish systems (EIFS) shall comply with sections N108.3.1 and N108.3.2.

N108.3.1 Hail Exposure regions. Hail exposure regions in Figure N108 (1) shall be as follows:

1. **Moderate** – Three but less than six hail reports per 100 square miles.
2. **Severe** - Six or more hail reports per 100 square miles.

N108.3.2 Exterior wall coverings subject to hail exposure. Wall coverings used in regions where hail exposure is Moderate or Severe, as determined in accordance with Section N108.3.1 and Figure N108 (1), shall be tested, classified, and labeled in accordance with UL 2218 or FM 4473.

N108.4 Exterior wall covering limitations for reduced damage from wind. Vinyl siding and Exterior insulation and finish systems (EIFS) shall only be permitted to be installed on exterior walls of buildings located as follows:

1. Regardless of the Risk Category, in areas where V_{ult} as determined in accordance with Figure 1609A does not exceed 115 miles per hour (45 m/s) and the *building height* is less than or equal to 40 feet (12 192 mm) in Exposure C.
2. Regardless of the Risk Category, in areas where V_{ult} as determined in accordance with Figure 1609A exceeds 115 miles per hour (45 m/s) or the *building height* is equal to 40 feet (12192 mm) or greater in Exposure C, vinyl siding or EIFS shall be permitted on exterior walls when tested in accordance with ASTM D5206 or E330 using wind speed not less than the wind speed applicable for the building location determined in accordance with N110.4.
3. Regardless of the Risk Category, in areas where the wind speed is less than 250 mph (98 m/s) according to Figure 304.2(1) of ICC/NSSA 500 or the *building height* is equal to 40 feet (12192 mm) or greater in Exposure C, vinyl siding or EIFS shall be permitted on exterior walls when tested in accordance with ASTM D5206 or E330 using wind speed not less than the wind speed applicable for the building location determined in accordance with N110.4.

FIGURE N108 (1)

AVERAGE FREQUENCY OF HAIL (1-INCH OR LARGER) REPORTS PER 100 SQUARE MILES

SECTION N109

ROOF ASSEMBLIES

N109.1 General. Roof coverings shall also comply with Sections N109.2 through N109.4 and the requirements for Chapter 15.

N109.2 Non-classified roofs. Non-classified roof coverings in accordance with Section 1505.5 Non-classified roofing shall not be permitted on buildings.

N109.3 Roofs in Warm and Dry Climates. Roofs in climate zones 1, 2, 3, 4, 5B (dry), and 6B (dry) of the *International Energy Conservation Code* shall have a Class A roof covering or Class A roof assembly according to ASTM E108 or UL 790. For roof coverings where the profile allows a space between the roof covering and roof decking, the space at the eave ends shall be firestopped to preclude entry of flames or embers.

N109.4 Roof coverings subject to hail exposure. Roof coverings used in regions where hail exposure is Moderate or Severe, as determined in accordance with Section N109.4.1 and Figure N108 (1), shall be tested, classified, and labeled in accordance with UL 2218 or FM 4473.

N109.4.1 Hail Exposure regions in Figure N108 (1) shall be as follows:

1. **Moderate** – Three but less than six hail reports per 100 square miles.
2. **Severe** - Six or more hail reports per 100 square miles.

N109.5 Roof drain protection. All roof drains on low-slope roofs located in severe exposure areas in Figure 1904.2 shall have heating strips (heat trace) installed around them to prevent blockage of the drains by ice or ice dams.

SECTION N110

STRUCTURAL

N110.1 General. In order to limit the impact of loads from snow, ice, wind, floods and earthquakes on the *building* the *building* shall comply with Sections N110.1 through N110.9 and the requirements for Chapters 4 and 16.

N110.2 Importance factors by risk category. The minimum design loads for buildings shall be based on the Importance Factors in Table N110 (1).

TABLE N110 (1)
IMPORTANCE FACTORS BY RISK CATEGORY

Risk Category From Table 1604.5 in the IBC	Snow Importance Factor, I_s	Ice Importance Factor, I_i	Wind Importance Factor, I_w	Seismic Importance Factor, I_e	
				0.2 spectral response	
					$\geq 0.40g$
I	0.95	0.95	1.20	1.00	1.20
II	1.20	1.20	1.20	1.00	1.20

<u>III</u>	<u>1.25</u>	<u>1.40</u>	<u>1.15</u>	<u>1.25</u>	<u>1.40</u>
<u>IV</u>	<u>1.30</u>	<u>1.40</u>	<u>1.15</u>	<u>1.50</u>	<u>1.65</u>

N110.3 Snowloads. In order to limit the impact of snow on the *building* the Snow Load Importance Factor, I_s , shall be determined from Table N110 (1).

N110.4 Wind loads. In order to limit the impact of wind on the *building* the Wind Load Importance Factor, I_w , shall be determined from Table N110 (1). Component and cladding loads shall be determined for the design wind speed determined in accordance with Section 1609.1.1 Determination of wind loads and defined assuming terrain Exposure C regardless of the actual local exposure and the Wind Load Importance Factor, I_w , determined from Table N110 (1).

N110.4.1 Special wind region requirements. The following items are required in Wind Zones 3 or 4 determined in accordance with Section 1609.1.2.2:

1. Structural roof sheathing panels shall be rated for maximum deflection between supports of L/160 when subjected to a uniform live load of 100 pounds per square foot.
2. Connections and fasteners of structural roof sheathing panels shall be designed to provide panel resistance uplift with a minimum factor of safety of 2.0 based on a design wind pressure using terrain Exposure C.

N110.5 Flood loads. Buildings designed and constructed in flood hazard areas defined in Section 1612.2 Definitions shall comply with the following.

N110.5.1 Floors above base flood elevation. Floors required by ASCE 24 to be built above base flood elevations shall have the floor and their lowest horizontal supporting member not less than the higher of the following:

- (a) Design flood elevation.
- (b) Base flood elevation plus 3 feet, or
- (c) advisory base flood elevation plus 3 feet, or
- (d) 500-year flood, if known

N110.5.2 Flood protective works. Buildings designed and constructed in accordance with ASCE 24 shall not consider levees or floodwalls for providing flood protection during the design flood.

N110.5.3 Protection of mechanical, plumbing and electrical systems. Mechanical, plumbing and electrical systems, including plumbing fixtures and utility connections, shall comply with the following:

1. All components shall be elevated above the design flood elevation.

Exception: Electrical systems, equipment and components, and heating, ventilating, air conditioning, and plumbing appliances, plumbing fixtures, duct systems and other service equipment shall be permitted to be located below the design flood elevation provided that all elements are designed and installed to prevent water from entering or accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy. Electrical wiring systems shall be permitted to be located below the design flood elevation provided they conform to the provisions of NFPA70.

2. Where break away wall systems are required, vertical runs extending below the lowest habitable floor shall be protected by columns or other structural elements that are not part of any break away wall system and shall not be connected to any break away elements.

N110.6 Earthquake loads. In order to limit the impact of seismic events on the *building* the Seismic Load Importance Factor, I_e , shall be determined from Table N110 (1). The building shall also comply with Sections N110.6.1 and N110.6.2.

N110.6.1 Near fault sites. Buildings are not permitted on sites where the ground surface has the known potential to rupture at the structure due to ground motion. Determination shall be based on fault zones (areas subject to severe ground dislocations) that have been established and mapped.

N110.6.2 Seismic Design Categories C, D, E and F. Where the *seismic design category* is determined to be C, D, E or F in accordance with Section 1613.3.5, the building shall be designed by a *registered design professional*.

N110.7 Atmospheric ice loads. In order to limit the impact of atmospheric ice load events on the *building* the ice importance factor, I_i , shall be determined from Table N110 (1).

N110.8 Storm Shelters. Buildings and structures shall be provided with storm shelters in accordance with Section 423 and where required by Section N110.8.1 and N110.8.2.

N110.8.1 Other occupancies. Storm shelters shall be provided for buildings of Group A-3 (community halls, schools and libraries), B (civic administration), Group E (day care facilities, accessory to places of religious worship, and occupancies less than 50), I-1, I-2, I-3, M, and R occupants located in:

1. Hurricane prone regions
2. Tornado areas where the shelter design wind speed for tornadoes of Figure 304.2(1) of ICC/NSSA 500 is 250 mph or greater.

Exceptions:

1.
 - 1.1. Buildings meeting the requirements for shelter design in ICC/NSSA 500.
 - 1.2. Where the occupants of the proposed building have an approved storm shelters within 1/4-mile of travel distance of the proposed building available for use and the storm shelter has adequate size to accommodate the added occupant load of the proposed building.
 - 1.3. Where the code official determines the building size, location or occupant load does not warrant a shelter.

N110.8.2 Combined hurricane and tornado shelters. Where combined hurricane and tornado shelters are provided, the shelter shall comply with the more stringent requirements of ICC/NSSA-500 for both types of shelters.

N110.9 Wildland. In order to limit the impact of wildland fires on the building the building shall comply with Sections N110.9.1 through N110.9.3

N110.9.1 Wildland Fires. The provisions of the *International Wildland-Urban Interface Code* shall apply to the construction, alteration, movement, repair, maintenance and use of any building, structure or premises within the wildland interface areas in this jurisdiction.

N110.9.2 Exterior walls. Exterior wall requirements shall be based on the Fire Hazard Severity specified in Table 502.1 in the *International Wildland-Urban Interface Code*.

N110.9.3 Smoke Detection. An automatic smoke detection system in accordance with Section 907 shall be installed throughout buildings located within areas designated by the jurisdiction as being a wild land urban interface area.

SECTION N111 **REFERENCED STANDARDS**

<u>ASCE/SEI</u>	<u>American Society of Civil Engineers</u>	
	<u>Structural Engineers Institute</u>	
	<u>1801 Alexander Bell Drive</u>	
	<u>Reston, VA 20191-4400</u>	
<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>24-13</u>	<u>Flood Resistant Design and Construction</u>	<u>N110.5.1</u> <u>N110.5.2</u>
<u>ASTM</u>	<u>ASTM International</u>	
	<u>100 Barr Harbor Drive</u>	
	<u>West Conshohocken, PA 19428-2959</u>	
<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>E108-11</u>	<u>Standard Test Methods for Fire Tests of Roof Coverings</u>	<u>N109.3</u>
<u>E330-14</u>	<u>Test Methods for Structural Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference</u>	<u>N108.4</u>
<u>D5206-13</u>	<u>Standard Test Method for Windload Resistance of Rigid Plastic Siding</u>	<u>N108.4</u>
<u>FM</u>	<u>Factory Mutual Global Research</u>	
	<u>Standards Laboratories Department</u>	
	<u>1301 Atwood Avenue, P.O. Box 7500</u>	
	<u>Johnston, RI 02919</u>	
<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>FM 4473-11</u>	<u>Specification Test Standard for Impact Resistance Testing of Rigid Roof Materials by Impacting With Freezer Ice Balls</u>	<u>N108.3.2</u> <u>N109.4</u>
<u>ICC</u>	<u>International Code Council, Inc.</u>	
	<u>500 New Jersey Ave. NW</u>	
	<u>6th Floor</u>	
	<u>Washington, DC 20001</u>	
<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>IECC—15</u>	<u>International Energy Conservation Code®</u>	<u>N109.3</u>
<u>IWUIC—15</u>	<u>International Wildland-Urban Interface Code®</u>	<u>N110.9.1</u> <u>N110.9.2</u>
<u>ICC 500-14</u>	<u>ICC/NSSA Standard on the Design and Construction of Storm Shelters</u>	<u>N110.8.1</u> <u>N110.8.1.2</u>
<u>NFPA</u>	<u>National Fire Protection Association</u>	
	<u>1 Batterymarch Park</u>	
	<u>Quincy, MA 02269</u>	
<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>NFPA 13-13</u>	<u>Standard for the Installation of Sprinkler Systems</u>	<u>N106.3</u>
<u>NFPA 13R-13</u>	<u>Standard for the Installation of Sprinkler Systems in Residential Occupancies Up to and Including Four Stories in Height</u>	<u>N106.3</u>
<u>UL</u>	<u>Underwriters Laboratories Inc.</u>	
	<u>333 Pfingsten Road</u>	
	<u>Northbrook, IL 60062</u>	
<u>Standard reference number</u>	<u>Title</u>	<u>Referenced in code section number</u>
<u>UL 790-04</u>	<u>Standard Test Methods for Fire Tests of Roof Coverings— with revisions through October 2008</u>	<u>N109.3</u>
<u>UL 2218-10</u>	<u>Impact Resistance of Prepared Roof Covering Materials</u>	<u>N108.3.2</u> <u>N109.4</u>

Reason: This reason statement has the following four segments to explain the reasons for this change: (A) Background on these criteria with regard to the ICC code development process; (B) Substantiation for sustainability through enhanced resilience; (C) Additional life safety benefits for occupants through enhanced resilience and (D)

General background information identifying the need for enhanced property protection and functional resilience to strengthen the built environment.

(A)

Similar criteria were submitted as proposed mandatory provisions of the 2012 edition of the International Green Construction Code. Committee members identified these types of criteria as having merit but recommended that they be proposed to the International Building Code. Proposals were submitted as mandatory requirements within the body of the code and also as an optional appendix. Both approaches were disapproved for the IBC as not being minimum requirements for general construction.

It is noteworthy that state and local jurisdictions are considering criteria for enhanced resilience in their general building code, superseding the criteria of the I-Codes. For example the State of Georgia, under a U.S. Department of Housing and Urban Development grant and adopted an optional appendix to their statewide code to permit jurisdictions to adopt and enforce criteria for enhanced resiliency. Many jurisdictions like Lake County Illinois have adopted flood criteria that is more stringent than the criteria in the I-Codes. As jurisdictions are adopting more stringent criteria for all buildings, criteria for enhanced resilience should be a prerequisite for all green or sustainable buildings to provide acceptable levels of longevity, durability, robustness, improved life safety, ease of adaptability for reuse as well as resistance to disasters. Such provisions will reduce time and resources for disaster response and recovery as well as helping to assure community continuity by better maintaining revenues and places for employment and to house employees.

The sustainability benefits of enhanced resiliency in building design and construction are not limited to the general continuity and welfare of communities but also have a significant role to minimize negative environmental impacts should disasters occur. The U.S. Army Corps of Engineers reported that 44 million cubic yard of building materials and contents were disposed of in land following Hurricane Katrina. Most of the materials were not salvageable because they were contaminated. This is the equivalent of laying 21 cubic foot refrigerators end to end twice around the equator. Provisions for enhanced resiliency such as elevating habitable spaces above a specific natural flood elevation can significantly minimize the amount of materials disposed because they are damaged and contaminated. Reports after the tornado strike in Moore, Oklahoma advised that is placed on a single debris pile the pile of debris would have been more than a mile high. More resilient construction would clearly minimize the amount of damage, may not from a direct path of the funnel of an EF5 tornado, but at least for the lower perimeter wind forces and flying debris.

(B)

The following are reports of dollar loss to property from wind, cold weather and fire disasters.

- The American Society of Civil Engineers reported in *Normalized Hurricane Damage in the United States, 1900 – 2005*, National Hazard Review, ASCE 2008, that property damage from hurricanes was 81 billion dollars in 2005.
- The National Weather Service reports that U.S. property damage due to winter storms and ice exceeded 1.5 billion dollars in 2009.
- *Fire Losses in the United States During 2009* by the National Fire Protection Association, August 2010 shows that property loss due to structure fires in buildings other than one and two family dwellings was approximately 4.5 billion dollars.

Increasing the stringency of the design criteria of buildings for hazards such as wind, snow or fire results in more robust buildings. Such requirements reduce the amount of energy and resources required for repair, removal, disposal and replacement of building components and systems damaged from these disasters. A further benefit is a reduction in the amount of damaged building materials and content entering landfills.

While there has not been a proportionate increase in either frequency of events (which have remained relatively constant) construction put in place (which has maintained an upward trend of trend of 10% per decade or 40% over last four decades) or demographics (population growth even in the fastest growing regions has 10% per decade or 40% over the same time period) property losses due to natural disasters, adjusted to 2010 dollars, have increased by over a staggering 3500%, see Figure 1. Losses from fire, adjusted to 2010 dollars, have increased by 85% per fire, see Figure 2.

Figure 1: Increase in Property Losses Due to Natural Disasters, excluding Flood¹

¹Flood losses not collected by private insurance companies

Figure 1: Increase in Fire Losses Per Structure Fire¹

These specific requirements help reduce commonly occurring property losses.

Source: U.S. Navy photo by Chief Petty Officer Johnny Bivera
Katrina Aftermath

Source: Federal Emergency Management Agency
Earthquake damage to personal property.

Source: Institute for Business and Home Safety

In many instances roof collapse due to snow loads not only results in damage to roof and building contents below but may also remove lateral support, allowing walls to collapse.

Source: Federal Emergency Management Agency, photograph taken by Lara Shane of FEMA

Homes and businesses that are not designed and constructed to provide an appropriate level of resilience are at greater risk in high wind exposures.

Source: Oklahoma Department of Emergency Management
Storm shelters and safe rooms really work.

Source: Northeast Fire Safety Construction Advisory Council

Fire containment achieved with compartmentation minimizes damage due to fire, smoke and water used for suppression.

Source: Brick Institute of America Region 9

Siding on a building nearly 100 feet away from a burning building needs to be replaced.

Source: Federal Emergency Management Agency

Topography, vegetative fuels and drought contribute to the potential for devastating wildfires.

Source: Portland Cement Association, photo by Steve Skalko

Damage to siding and sheathing as a result of high winds.

Wind Damage – System Failure:



Source: Institute for Business & Home Safety

Wind damage to lightweight exterior wall covering.

Hail Impact - Horizontal Surfaces:



Source: National Oceanic and Atmospheric Administration, National Weather Service

Roof shingles need to be removed, disposed and replaced due to hail damage.

Hail Impact - Vertical Surfaces:



Source: National Oceanic and Atmospheric Administration, National Weather Service

Siding needs to be removed, disposed and replaced due to hail damage.

Rodentproofing:



Source: Image provided with permission from Alternative Building Services, www.altbuildingservices.com

Building elements in need of repair due to rodent damage. Undetected damage can compromise the integrity of the building thermal envelope and moisture protection.

Further benefits are enhanced security and occupant comfort; potentially less demand on community resources required for emergency response; and allowing facilities to be more readily adapted for re-use if there is a change of occupancy in the future.

(C)

The 1987 landmark report "America Burning" (Report of the National Commission on Fire Prevention and Control) recommended the increased use of automatic sprinkler systems, and the sprinkler trade-off concept as a financial incentive to encourage the installation of sprinklers in buildings to enhance life safety to the benefit of the building occupants. Automatic fire sprinklers designed for the intended fire load that are installed correctly and maintained to operate with adequate water supply are undoubtedly have contributed significantly to reduced loss of life and reduced property damage. However, for the last two decades hundreds of sprinkler trade-offs have been incorporated into model building codes such as the International Building Code that drastically reduce built-in fire protection when sprinklers are present. The result is considerably less fire safety layers in a building and significant reliance only on the sprinkler system for occupant safety.

There is increasing concern about the reduction or complete elimination of fire rated assemblies based on reliance of automatic sprinklers. To address this concern this proposal removes many of the sprinkler trade-offs in order to encourage increase fire safety and resilience of buildings through a combination of fire resistant construction and sprinklers protection.

Too, natural disasters such earthquakes, hurricanes and floods disrupt water supplies and power to buildings adversely affecting the life safety systems such as sprinkler protection and fire alarm systems. These events also damage gas mains serving buildings resulting in gas leaks and increased fire incidents. Without the fire safety layers of sprinklers and fire alarms, the building will not be able to withstand as big of a fire and will fail sooner, putting occupants and especially firefighters at great risk. This proposal encourages enhanced resilience to these natural disasters to reduce fire safety risk to the occupants.

It has been widely accepted that when buildings are constructed with an appropriate combination of active and passive fire protection using the concept of fire safety layering, they are more resilient and better able to ensure continuity of operations, improved sustainability, increased durability, increased adaptability for reuse, increased resistance to disasters, and improved life safety for occupants and firefighters.

(D)

Minimum building requirements whether through energy codes, plumbing codes, mechanical codes, zoning codes, or basic building codes, do not encourage truly sustainable buildings. The proposal attempts to integrate the concepts of the Whole Building Design Guide (WBDG) into the International Building Code as a non-mandatory Appendix. This allows adopting jurisdictions the option of incorporating code requirements into the building code to improve the resilience of the built environment without the need to add another code to the community requirements.

The WBDG, developed in partnership between the National Institute of Building Sciences (NIBS) and the Sustainable Building Industries Council (SBIC), has as its key concepts: accessible, aesthetics, costeffective, functional/operational, historic preservation, productive, secure/safe, and sustainable.

There are numerous references about the economic, societal, and environmental benefits that result when enhanced functional resilience for resource minimization are integrated into building design and construction. Six examples demonstrating the importance and supporting the concepts are:

1. **Natural Hazard Mitigation Saves: An Independent Study to Assess the Future Savings from Mitigation Activities** - National Institute of Building Sciences Multi-Hazard Mitigation Council - 2005

One of the findings in this report is "The analysis of the statistically representative sample of FEMA grants awarded during the study period indicates that a dollar spent on disaster mitigation saves society an average of \$4." The programs studied often addressed issues and strategies other than enhanced disaster resistance of buildings and other structures. However, more disaster-resistant buildings enhance life safety; reduce costs and environmental impacts associated with repair, removal, disposal, and replacement; and reduce the time and resources required for community recovery.

2. **Five Years Later – Are we better prepared?** - Institute for Business and Home Safety - 2010

This IBHS report states: "When Hurricane Katrina made landfall on Aug. 29, 2005, it caused an estimated \$41.1 billion in insured losses across six states, and took an incalculable economic and social toll on many communities. Five years later, the recovery continues and some residents in the most severely affected states of Alabama, Louisiana and Mississippi are still struggling. There is no question that no one wants a repeat performance of this devastating event that left at least 1,300 people dead. Yet, the steps taken to improve the quality of the building stock, whether through rebuilding or new construction, call into question the commitment of some key stakeholders to ensuring that past mistakes are not repeated." This report indicates that there is a need to implement provisions to make buildings more disaster-resistant. Clearly this suggests that functional resilience should at least be integrated into the design and construction of sustainable buildings.

3. **National Weather Service Office of Climate, Water and Weather Services** - National Oceanic and Atmospheric Administration (NOAA) - 2010

Data provided on the NOAA website [\[www.weather.gov/os/hazstats.shtml\]](http://www.weather.gov/os/hazstats.shtml) indicates that the average annual direct property loss due to natural disasters in the United States exceeds of \$35,000,000,000. This does not include indirect costs associated with loss of residences, business closures, and resources expended for emergency response and management. These direct property losses also do not reflect the direct environmental impact due to reconstruction after the disasters. Functional resilience will help alleviate the environmental impact and minimize both direct and indirect losses from natural disasters.

4. **Global Climate Change Impacts in the United States** - U.S. Global Change Research Program (USGCRP) - 2009

The USGCRP includes the departments of Agriculture, Commerce, Defense, Energy, Health and Human Services, Interior, State and Transportation; National Aeronautic and Space Administration; Environmental Protection Agency, USA International Development, National Science Foundation and Smithsonian Institution

The report identifies that: "Climate changes are underway in the United States and are projected to grow. Climate-related changes are already observed in the United States and its coastal waters. These include increases in heavy downpours, rising temperature and sea level, rapidly retreating glaciers, thawing permafrost, lengthening growing seasons, lengthening ice-free seasons in the ocean and on lakes and rivers, earlier snowmelt, and alterations in river flows. These changes are projected to grow." The report further identifies that the: "Threats to human health will increase. Health impacts of climate change are related to heat stress, waterborne diseases, poor air quality, extreme weather events, and diseases transmitted by insects and rodents. Robust public health infrastructure can reduce the potential for negative impacts." Key messages in the report on societal impacts include:

- - "City residents and city infrastructure have unique vulnerabilities to climate change."

- o "Climate change affects communities through changes in climate-sensitive resources that occur both locally and at great distances."
- o "Insurance is one of the industries particularly vulnerable to increasing extreme weather events such as severe storms, but it can also help society manage the risks."

Sustainable building design and construction cannot be about protecting the natural environment without consideration of the projected growth in severe weather. Minimum codes primarily based on past natural events are not appropriate for truly sustainable buildings. Buildings expected to have long term positive impacts on the environment must be protected from these extreme changes in the natural environment. The provisions for improved property protections are necessary to reduce the amount of energy and resources associated with repair, removal, disposal, and replacement due to routine maintenance and damage from disasters. Further such provisions reduce the time and resources required for community disaster recovery.

5. ***Sustainable Stewardship - Historic preservation plays an essential role in fighting climate change*** - Traditional Building, National Trust for Historic Preservation - 2008

In the article Richard Moe summarizes the results of a study by the Brookings Institution which projects that by 2030 we will have demolished and replaced 82 billion square feet of our current building stock, or nearly 1/3 of our existing buildings, largely because the vast majority of them weren't designed and built to last any longer. Durability, as a component of functional resilience, can reduce these losses.

6. ***Opportunities for Integrating Disaster Mitigation and Energy Retrofit Programs*** - Senate Environment and Public Works Committee Room, Dirksen Senate Office Building, Washington, D.C. - 2010

During this panel discussion a representative of the National Conference of State Historic Preservation Officers noted that more robust buildings erected prior to 1950 tend to be more adaptable for reuse and renovation. Prior to the mid-1950s most local jurisdictions developed their own building code requirements that uniquely addressed the community's needs, issues and concerns. Pre-1950 building codes typically resulted in more durable and robust construction that lasts longer. The total environmental impact of insulation, high efficiency equipment, components, and appliances, lowflow plumbing fixtures, and other building materials and contents are relatively insignificant when rendered irreparable or contaminated and must be disposed of in landfills after disasters. The US Army Corps of Engineers estimated that after Hurricane Katrina nearly 1.2 billion cubic feet of building materials and contents ended up in landfills. This is analogous to stacking enough refrigerators a fifth of the way to the moon or placing them end to end around the equator of the Earth twice.

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

Analysis: A review of the standards proposed for inclusion in the code, ASTM D 5206-13, FM 4473-11 and UL 2218-10, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 2, 2014. All other standards proposed for inclusion into the code are already in Chapter 35 of the 2015 IBC.

G 236-15 : Appendix N (New)-Hall
5883

G 237-15

202

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

2015 International Building Code

Revise as follows:

SECTION 202 DEFINITIONS

ATTIC The space between the ceiling ~~beams~~ framing of the top *story* and the roof rafters.

Reason: Not all ceilings have beams, but all ceilings have "framing".

Cost Impact: Will not increase the cost of construction

The code change proposal will not increase the cost of construction.

G 237-15 : 202-ATTIC-CUEVAS4543