

E21-21

IBC: TABLE 1006.3.3, TABLE 1006.3.4(1), TABLE 1006.3.4(2) [IFC:[BE] TABLE 1006.3.3, TABLE 1006.3.4(1), TABLE 1006.3.4(2)]

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

1006.3.3 Egress based on occupant load. Each *story* and occupied roof shall have the minimum number of separate and distinct *exits*, or access to *exits*, as specified in Table 1006.3.3. A single *exit* or access to a single *exit* shall be permitted in accordance with Section 1006.3.4. The required number of *exits*, or *exit access stairways* or *ramps* providing access to *exits*, from any *story* or occupied roof shall be maintained until arrival at the *exit discharge* or a *public way*.

Revise as follows:

TABLE 1006.3.3
MINIMUM NUMBER OF EXITS OR ACCESS TO EXITS PER STORY OR OCCUPIED ROOF

OCCUPANT LOAD PER STORY OR <u>OCCUPIED ROOF</u>	MINIMUM NUMBER OF EXITS OR ACCESS TO EXITS FROM <u>PER STORY OR OCCUPIED ROOF</u>
1-500	2
501-1,000	3
More than 1,000	4

1006.3.4 Single exits. A single *exit* or access to a single *exit* shall be permitted from any *story* or occupied roof where one of the following conditions exists:

1. The *occupant load*, number of *dwelling units* and exit access travel distance do not exceed the values in Table 1006.3.4(1) or 1006.3.4(2).
2. Rooms, areas and spaces complying with Section 1006.2.1 with *exits* that discharge directly to the exterior at the *level of exit discharge*, are permitted to have one *exit* or access to a single *exit*.
3. Parking garages where vehicles are mechanically parked shall be permitted to have one *exit* or access to a single *exit*.
4. Group R-3 and R-4 occupancies shall be permitted to have one *exit* or access to a single *exit*.
5. Individual single-story or multistory *dwelling units* shall be permitted to have a single *exit* or access to a single *exit* from the *dwelling unit* provided that both of the following criteria are met:
 - 5.1. The *dwelling unit* complies with Section 1006.2.1 as a space with one *means of egress*.
 - 5.2. Either the exit from the *dwelling unit* discharges directly to the exterior at the *level of exit discharge*, or the *exit access* outside the *dwelling unit's* entrance door provides access to not less than two *approved* independent *exits*.

Revise as follows:

TABLE 1006.3.4(1)
STORIES AND OCCUPIED ROOFS WITH ONE EXIT OR ACCESS TO ONE EXIT FOR R-2 OCCUPANCIES

STORY OR OCCUPIED ROOF	OCCUPANCY	MAXIMUM NUMBER OF DWELLING UNITS	MAXIMUM EXIT ACCESS TRAVEL DISTANCE
Basement, first, second or third story above grade plane <u>and occupied roofs over the first or second story above grade plane</u>	R-2 ^{a, b, c}	4 dwelling units	125 feet
Fourth 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 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1031.
- b. This table is used for R-2 occupancies consisting of dwelling units. For R-2 occupancies consisting of sleeping units, use Table 1006.3.4(2).
- c. This table is for occupied roofs accessed through and serving individual dwelling units in Group R-2 occupancies. For Group R-2 occupancies with occupied roofs that are not access through and serving individual units, use Table 1006.3.4(2).

TABLE 1006.3.4(2)
STORIES AND OCCUPIED ROOFS WITH ONE EXIT OR ACCESS TO ONE EXIT FOR OTHER OCCUPANCIES

STORY AND OCCUPIED ROOF	OCCUPANCY	MAXIMUM OCCUPANT LOAD PER STORY AND OCCUPIED ROOF	MAXIMUM EXIT ACCESS TRAVEL DISTANCE (feet)
First story above or below grade plane <u>and occupied roofs over the first story above grade plane</u>	A, B ^b , E, F ^b , M, U	49	75
	H-2, H-3	3	25
	H-4, H-5, I, R-1, R-2 ^{a, c}	10	75
	S ^{b, d}	29	75
Second story above grade plane	B, F, M, S ^d	29	75
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 or 903.3.1.2 and provided with *emergency escape and rescue openings* in accordance with Section 1031.
- b. Group B, F and S occupancies in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or on the roof of such buildings shall have a maximum *exit access* travel distance of 100 feet.
- c. This table is used for R-2 occupancies consisting of *sleeping units*. For R-2 occupancies consisting of *dwelling units*, use Table 1006.3.4(1).
- d. The length of *exit access* travel distance in a Group S-2 *open parking garage* shall be not more than 100 feet.

Reason Statement: The change to the title and heading in Table 1006.3.3 is for consistency with the text.

The proposed modifications to Section 1006 includes adding 'occupied roofs' to Table 1006.3.4(1) to clarify the conditions in which one exit or access to one exit is allowed for rooftop decks or balconies for individual units in Group R-2 occupancies. Footnote c sends you to other occupancies for shared roof decks because you are now a mixed use occupancy. While the occupied roof is not a story for height and area, the allowance for a single exit is set at the 3rd story. Similarly this proposal adds 'occupied roofs' to Table 1006.3.4(2) to clarify the conditions in which one exit or access to one exit is allowed for the other occupancies, including a shared occupied roof on an apartment building. While Group A, E, H, I, R-1, R-2 and S are limited to a first story with a single exit, allowing for one exit from the roof of these buildings is comparable, and probably safer, to being able to travel up from the basements (which is currently permitted). A proposed modification to footnote b or the table clarifies that the allowable increase in exit access travel distance from 75 feet to 100 feet for properly sprinklered Group B, F and S occupancies also includes the roof area for these uses.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

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

This proposal provides clarification to a subject that was not previously addressed. The changes to the single occupant tables could allow for one exit stairway from an occupied roof instead of two.

E22-21

IBC: 1006.3.4, 3006.4 (IFC:[BE] 1006.3.4)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Revise as follows:

1006.3.4 Single exits. A single *exit* or access to a single *exit* shall be permitted from any *story* or occupied roof where one of the following conditions exists:

1. The *occupant load*, number of *dwelling units* and exit access travel distance do not exceed the values in Table 1006.3.4(1) or 1006.3.4(2).
2. Rooms, areas and spaces complying with Section 1006.2.1 with *exits* that discharge directly to the exterior at the *level of exit discharge*, are permitted to have one *exit* or access to a single *exit*.
3. Elevator lobbies shall be permitted to have one exit in accordance with Section 3006.4.
- 3.4. Parking garages where vehicles are mechanically parked shall be permitted to have one *exit* or access to a single *exit*.
- 4.5. Group R-3 and R-4 occupancies shall be permitted to have one *exit* or access to a single *exit*.
- 5.6. Individual single-story or multistory *dwelling units* shall be permitted to have a single *exit* or access to a single *exit* from the *dwelling unit* provided that both of the following criteria are met:
 - 5.1.6.1. The *dwelling unit* complies with Section 1006.2.1 as a space with one *means of egress*.
 - 5.2.6.2. Either the exit from the *dwelling unit* discharges directly to the exterior at the *level of exit discharge*, or the *exit access* outside the *dwelling unit's* entrance door provides access to not less than two *approved* independent *exits*.

3006.4 Means of egress. Elevator lobbies shall ~~be provided with not less than one means of egress complying with Chapter 10 and other provisions in this code~~ have direct access from the elevator lobby to an enclosure for an interior exit stairway or ramp. Egress through an enclosed elevator lobby shall be permitted in accordance with Item 1 of Section 1016.2.

Exception: Access to an interior exit stairway or ramp shall be permitted to be through a protected path of travel enclosed with a smoke barrier having a fire-resistance rating of not less than 1 hour.

Reason Statement: This proposal is intended to be a clarification of current exit requirements for secure elevator lobbies. The allowance for one exit from an elevator lobby is buried in Chapter 30 so it is often missed. The current language in Section 3006.4 can appear to be a conflict with Section 1006.3.

The original intent of the allowance for one exit from an elevator lobby is to address secure lobby situations where the 2nd stairway is through a tenant space. The language in the exception is using the language for fire service access elevators in Section 3007 so that access to the stairway can be from the lobby to the exit stairway via a protected corridor.

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Cost Impact: The code change proposal will not increase or decrease the cost of construction. This is a clarification of requirements, not a change.

E23-21

IBC: TABLE 1006.3.4(1), TABLE 1006.3.4(2), 1031.2 (IFC:[BE] TABLE 1006.3.4(1), TABLE 1006.3.4(2), 1031.2)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

1006.3.4 Single exits. A single *exit* or access to a single *exit* shall be permitted from any *story* or occupied roof where one of the following conditions exists:

1. The *occupant load*, number of *dwelling units* and exit access travel distance do not exceed the values in Table 1006.3.4(1) or 1006.3.4(2).
2. Rooms, areas and spaces complying with Section 1006.2.1 with *exits* that discharge directly to the exterior at the *level of exit discharge*, are permitted to have one *exit* or access to a single *exit*.
3. Parking garages where vehicles are mechanically parked shall be permitted to have one *exit* or access to a single *exit*.
4. Group R-3 and R-4 occupancies shall be permitted to have one *exit* or access to a single *exit*.
5. Individual single-story or multistory *dwelling units* shall be permitted to have a single *exit* or access to a single *exit* from the *dwelling unit* provided that both of the following criteria are met:
 - 5.1. The *dwelling unit* complies with Section 1006.2.1 as a space with one *means of egress*.
 - 5.2. Either the exit from the *dwelling unit* discharges directly to the exterior at the *level of exit discharge*, or the *exit access* outside the *dwelling unit's* entrance door provides access to not less than two *approved* independent *exits*.

Revise as follows:

TABLE 1006.3.4(1)
STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT FOR R-2 OCCUPANCIES^a

STORY	OCCUPANCY	MAXIMUM NUMBER OF DWELLING UNITS	MAXIMUM EXIT ACCESS TRAVEL DISTANCE
Basement, first, second or third story above grade plane	<u>R-2^{a,b} consisting of dwelling units</u>	4 dwelling units	125 feet
	<u>R-2 consisting of sleeping units</u>	<u>20 occupants per story</u>	<u>125 feet</u>
Fourth 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 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1031.

b. ~~This table is used for R-2 occupancies consisting of dwelling units. For R-2 occupancies consisting of sleeping units, use Table 1006.3.4(2).~~

**TABLE 1006.3.4(2)
STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT FOR OTHER OCCUPANCIES**

STORY	OCCUPANCY	MAXIMUM OCCUPANT LOAD PER STORY	MAXIMUM EXIT ACCESS TRAVEL DISTANCE (feet)
First story above or below grade plane	A, B ^{ab} , E, F ^{ab} , M, U	49	75
	H-2, H-3	3	25
	H-4, H-5, I, R-1, R- 2 3	10	75
	S ^{a,b,d}	29	75
Second story above grade plane	B, F, M, S ^{b,d}	29	75
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 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1031.~~
- b.a. Group B, F and S occupancies in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 shall have a maximum *exit access* travel distance of 100 feet.
- c. ~~This table is used for R-2 occupancies consisting of sleeping units. For R-2 occupancies consisting of dwelling units, use Table 1006.3.4(1).~~
- d.b. The length of *exit access* travel distance in a Group S-2 *open parking garage* shall be not more than 100 feet.

1031.2 Where required. In addition to the *means of egress* required by this chapter, *emergency escape and rescue openings* shall be provided in the following occupancies:

1. Group R-2 occupancies located in stories with only one *exit* or *access* to only one *exit* as permitted by ~~Tables Table~~ 1006.3.4(1) ~~and 1006.3.4(2).~~
2. Group R-3 and R-4 occupancies.

Basements and sleeping rooms below the fourth *story above grade plane* shall have not fewer than one *emergency escape and rescue opening* in accordance with this section. Where *basements* contain one or more sleeping rooms, an *emergency escape and rescue opening* shall be required in each sleeping room, but shall not be required in adjoining areas of the *basement*. Such openings shall open directly into a *public way* or to a *yard* or *court* that opens to a *public way*.

Exceptions:

1. *Basements* with a ceiling height of less than 80 inches (2032 mm) shall not be required to have *emergency escape and rescue openings*.
2. *Emergency escape and rescue openings* are not required from *basements* or sleeping rooms that have an *exit door* or *exit access door* that opens directly into a *public way* or to a *yard*, court or exterior egress balcony that opens to a *public way*.
3. *Basements* without *habitable spaces* and having not more than 200 square feet (18.6 m²) in floor area shall not be required to have *emergency escape and rescue openings*.
4. Storm shelters are not required to comply with this section where the shelter is constructed in accordance with ICC 500.
5. Within individual *dwelling* and *sleeping units* in Groups R-2 and R-3, where the building is equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3, *sleeping rooms* in *basements* shall not be required to have *emergency escape and rescue openings* provided that the basement has one of the following:
 - 5.1. One *means of egress* and one *emergency escape and rescue opening*.
 - 5.2. Two *means of egress*.

Reason Statement: The purpose of this code change is to coordinate and consolidate requirements for R-2 units in Tables 1006.2.1 (single exit

space), 1006.3.4(1) and 1006.3.4(2) (single exit buildings).

Proposal E17-15 increased the maximum occupant load for R-2 Occupancies from 10 to 20 occupants for single exit spaces stating that it's appropriate since Group R-2 occupancies require sprinkler protection per Section 903.3.1.1 or 903.3.1.2. and that the exit access travel distance is 125' in both Table 1006.2.1 and 1006.3.4(1).

There is no logic for a unit on the 1st floor of single exit building to have a lower occupant load or a shorter travel distance. In addition, if 4 single exit dwelling units are permitted on the 2nd and 3rd floor of a Group R-2 building, why is a single exit dwelling not permitted at the 2nd floor of a mixed-use building? Please note that emergency escape and rescue openings would be required in the single exit building. The change to 1031.2 is editorial to recognize that R-2 is only in one table.

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

This will only affect dwelling units on the basement, 1st or 2nd floor of a mixed-use building. This will most likely be no change in units less than 2,000 sq.ft. This will allow for a single exit in some apartments between 2,000 and 4,000 sq.ft., provided they can meet the exit access travel distance.

E24-21

IBC: 1008.1, 1008.3, 1008.3.1 (IFC:[BE] 1008.1, 1008.3, 1008.3.1)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

SECTION 1008 MEANS OF EGRESS ILLUMINATION.

Revise as follows:

1008.1 Means of egress illumination. Illumination shall be provided in the *means of egress* in accordance with Section 1008.2. ~~Under emergency power.~~ In the event of power supply failure, *means of egress* illumination shall comply with Section 1008.3.

1008.2 Illumination required. The *means of egress* serving a room or space shall be illuminated at all times that the room or space is occupied.

Exceptions:

1. Occupancies in Group U.
2. *Aisle accessways* in Group A.
3. *Dwelling units* and *sleeping units* in Groups R-1, R-2 and R-3.
4. *Sleeping units* of Group I occupancies.

1008.2.1 Illumination level under normal power. The *means of egress* illumination level shall be not less than 1 footcandle (11 lux) at the walking surface. Along *exit access stairways*, *exit stairways* and at their required landings, the illumination level shall not be less than 10 footcandles (108 lux) at the walking surface when the *stairway* is in use.

Exception: For auditoriums, theaters, concert or opera halls and similar assembly occupancies, the illumination at the walking surface is permitted to be reduced during performances by one of the following methods provided that the required illumination is automatically restored upon activation of a premises' *fire alarm system*:

1. Externally illuminated walking surfaces shall be permitted to be illuminated to not less than 0.2 footcandle (2.15 lux).
2. Steps, landings and the sides of *ramps* shall be permitted to be marked with *self-luminous* materials in accordance with Sections 1025.2.1, 1025.2.2 and 1025.2.4 by systems *listed* in accordance with UL 1994.

1008.2.2 Group I-2. In Group I-2 occupancies where two or more *exits* are required, on the exterior landings required by Section 1010.1.5, means of egress illumination levels for the exit discharge shall be provided such that failure of a single lamp in a luminaire shall not reduce the illumination level on that landing to less than 1 footcandle (11 lux).

1008.2.3 Exit discharge. Illumination shall be provided along the path of travel for the exit discharge from each exit to the *public way*.

Exception: Illumination shall not be required where the path of the exit discharge meets both of the following requirements:

1. The path of exit discharge is illuminated from the exit to a safe dispersal area complying with Section 1028.5.
2. A dispersal area shall be illuminated to a level not less than 1 footcandle (11 lux) at the walking surface.

Revise as follows:

~~1008.3~~ **1008.2.3 Emergency power** ~~Power~~ **for illumination.** The power supply for *means of egress* illumination shall normally be provided by the premises' electrical supply.

~~1008.3.1~~ **1008.3 General** ~~Illumination required with the emergency electrical system.~~ In the event of power supply failure in rooms and spaces that require two or more *exits* or access to exits, an emergency electrical system shall automatically illuminate all of the following areas:

1. *Aisles*.
2. *Corridors*.
3. *Exit access stairways* and *ramps*.

~~1008.3.2~~ **1008.3.1 Buildings.** In the event of power supply failure in buildings that require two or more *exits* or access to exits, an emergency electrical system shall automatically illuminate all of the following areas:

1. *Interior exit access stairways and ramps.*
2. *Interior and exterior exit stairways and ramps.*
3. *Exit passageways.*
4. Vestibules and areas on the level of discharge used for *exit discharge* in accordance with Section 1028.2.
5. Exterior landings as required by Section 1010.1.5 for *exit doorways* that lead directly to the *exit discharge*.

~~1008.3.3~~ **1008.3.2 Rooms and spaces.** In the event of power supply failure, an emergency electrical system shall automatically illuminate all of the following areas:

1. Electrical equipment rooms.
2. Fire command centers.
3. Fire pump rooms.
4. Generator rooms.
5. Public restrooms with an area greater than 300 square feet (27.87 m²).

~~1008.3.4~~ **1008.3.3 Duration.** The emergency power system shall provide power for a duration of not less than 90 minutes and shall consist of storage batteries, unit equipment or an on-site generator. The installation of the emergency power system shall be in accordance with Section 2702.

~~1008.3.5~~ **1008.3.4 Illumination level under emergency power.** Emergency lighting facilities shall be arranged to provide initial illumination that is not less than an average of 1 footcandle (11 lux) and a minimum at any point of 0.1 footcandle (1 lux) measured along the path of egress at floor level. Illumination levels shall be permitted to decline to 0.6 footcandle (6 lux) average and a minimum at any point of 0.06 footcandle (0.6 lux) at the end of the emergency lighting time duration. A maximum-to-minimum illumination uniformity ratio of 40 to 1 shall not be exceeded. In Group I-2 occupancies, failure of a single lamp in a luminaire shall not reduce the illumination level to less than 0.2 footcandle (2.2 lux).

Reason Statement: The intent of this proposal is to split this section into requirements for general means of egress illumination (1008.2) and emergency lighting (1008.3). To truly accomplish this, the sections should be re-arranged as indicated. Section 1008.3 is currently titled '*Emergency power for illumination.*' However, that section really deals with general MOE lighting requirements, not emergency lighting requirements. Emergency lighting power requirements are addressed Sections 1008.3.3 and 1008.3.4. So we relocated it from 1008.3 to 1008.2.3 to group the lighting requirements appropriately.

The text change in Section 1008.1 will match the scoping phrase used in 1008.3, 1008.3.1 and 1008.3.2. Title changes in Section 1008.2.3 and 1008.3 will reinforce the idea of two different requirements – one for regular lighting and one for emergency lighting.

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Cost Impact: The code change proposal will not increase or decrease the cost of construction. This is a reorganization of existing text.

E27-21

IBC: 1009.1 (IFC:[BE]1009.1)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Revise as follows:

1009.1 Accessible means of egress required. *Accessible* means of egress shall comply with this section. *Accessible* spaces shall be provided with not less than one accessible means of egress. Where more than one *means of egress* is required by Section 1006.2 or 1006.3 from any accessible space, each *accessible* portion of the space shall be served by not less than two accessible means of egress.

Exceptions:

1. One *accessible means of egress* is required from an *accessible mezzanine* level in accordance with Section 1009.3, 1009.4 or 1009.5.
2. In assembly areas with ramped *aisles* or stepped *aisles*, one *accessible means of egress* is permitted where the *common path of egress travel* is *accessible* and meets the requirements in Section 1030.8. The common path of travel shall be measured from the wheelchair spaces along an accessible route to that point where the occupants have a choice of two accessible routes to accessible means of egress.

1030.8 Common path of egress travel. The *common path of egress travel* shall not exceed 30 feet (9144 mm) from any seat to a point where an occupant has a choice of two paths of egress travel to two *exits*.

Exceptions:

1. For areas serving less than 50 occupants, the *common path of egress travel* shall not exceed 75 feet (22 860 mm).
2. For *smoke-protected* or *open-air assembly seating*, the *common path of egress travel* shall not exceed 50 feet (15 240 mm).

Reason Statement: The intent of this proposal is to emphasize an existing requirement for accessible ways out of assembly spaces. Assemble seating is required to have at least one accessible route into a space. Wheelchair spaces have to be provided, integrated and dispersed. In space with 50 or more occupants, at least two accessible means of egress are required. Section 1009.1 allows for persons with mobility devices to return back the way out the along the same route they used to get to their seats up so the length of the common path of travel. This provides for an equivalent level of safety for everyone in the assembly seating.

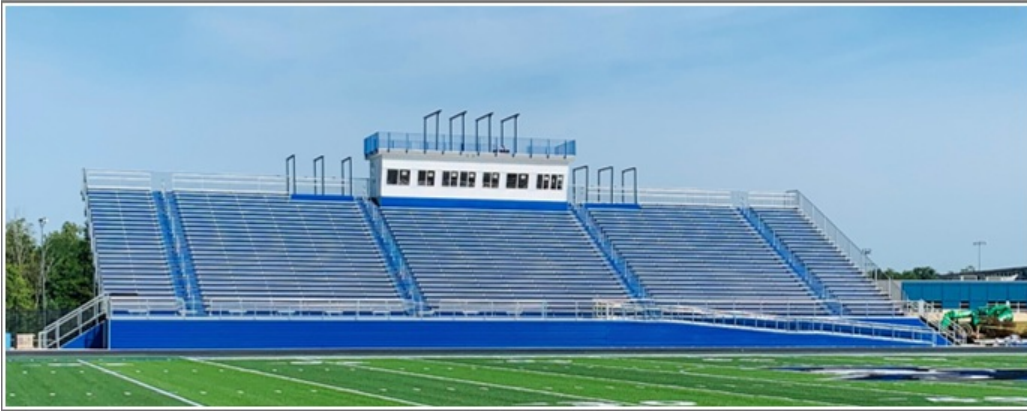
This can apply to spaces such as theaters, stadiums, bleachers, grandstands and folding and telescopic seating. Where this is currently being missed the most in is raised bleacher seating. The designers provide one ramp to get in, but commonly only have one steps on the other ends of the bleachers. Very often, this common path of travel could be met by one ramp the ends at the center of the bleachers.

ICC 300 Standard for Bleachers, Folding and Telescopic Seating, and Grandstands had similar criteria for common path of egress travel –

407.4.1 Path of egress travel. For rows of seating served by only one path of egress travel, the common path of egress travel shall not exceed 30 feet (9144 mm) from any seat to a point where a person has a choice of two paths of egress travel to two exits.

Exceptions:

1. In smoke-protected or open-air assembly seating, the common path of egress travel shall not exceed 50 feet (15 240 mm) from any seat to a point where a person has a choice of two paths of egress travel to two exits.
2. For areas serving less than 50 occupants, the common path of egress travel shall not exceed 75 feet (22 860 mm) from any seat to a point where a person has a choice of two paths of egress travel to two exits.
3. Where bench-type seating without backrests is utilized and the top of the bench is no more than 7 inches (178 mm) above the footrest immediately behind, the common path of egress travel shall not exceed 75 feet (22 860 mm) from any seat to a point where a person has a choice of two paths of egress travel to two exits.



Example of ramp access to center of raised bleachers.



Example with ramp only at one end of bleachers.

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

This is a clarification. It is not a change in the requirements for bleachers, grandstands or folding and telescopic seating.

E28-21

IBC: 1009.2.1 (IFC: [BE]1009.2.1)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Revise as follows:

1009.2.1 Elevators required. In buildings where a required accessible floor ~~or occupied roof~~ is four or more stories above or below a *level of exit discharge* ~~or where an accessible occupied roof is above a story that is three or more stories above the level of exit discharge~~, not less than one required *accessible means of egress* shall ~~be include~~ an elevator complying with Section 1009.4.

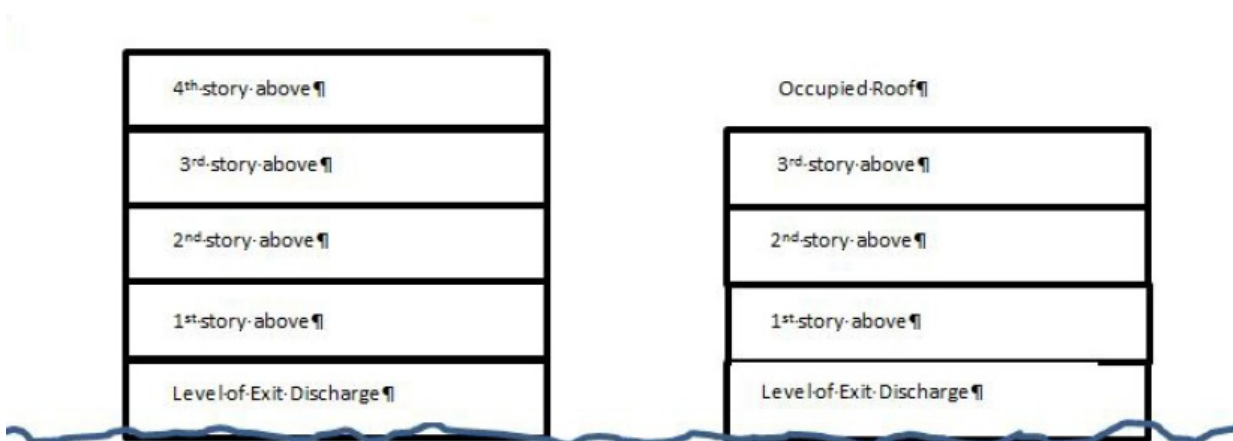
Exceptions:

1. In buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required as part of the accessible means of egress on floors provided with a *horizontal exit* and located at or above the *levels of exit discharge*.
2. In buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a *ramp* conforming to the provisions of Section 1012.

Reason Statement: The intent of this proposal is a clarification in terminology.

The new language added by E30-18 is confusing. An occupied roof is not a story. Therefore, to be clear, the requirement for an occupied roof should be dealt with separately from the number of stories in a building. It is not the intent of this proposal to change to result of what was voted approved by the MOE Code Development Committee.

It is important to point out that the original change said that there was no fiscal impact. Since the occupied roof is not considered a story for height and area limitations, with the 2018 text, it could have been interpreted that standby power was not required to an occupied roof on a 4 story building. Therefore, this does have a significant cost for a 4 story building that decides to have an occupied roof.



Height at which standby power would be required on the elevator for accessible MOE

The addition of "as part of the means of egress" added into the exceptions will clarify this limitation all the exception. The elevator is part of the accessible means of egress, not the only piece. When an elevator is required as part of an accessible means of egress, Section 1009.4 would require standby power.

This is one of a series of three independent proposals for this section. If all three are passed, the result will be this. The proposals each stand on their own.

1009.2.1 Elevators required.

In buildings where a required *accessible floor or occupied roof* is four or more *stories* above or below a *level of exit discharge* or where an *accessible occupied roof* is above a story that is three or more stories above the level of exit discharge, not less than one required *accessible means of egress* shall be an elevator complying with Section 1009.4.

Exceptions:

1. In buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required as part of an accessible means of egress on floors provided with a *horizontal exit* and located at or above the *levels of exit discharge*.
2. In buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required as part of an accessible means of egress on floors or occupied roofs provided with a *ramp* conforming to the provisions of Section 1012.
3. In buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required as part of an accessible means of egress for an occupied roof where the floors located at or above the level of exit discharge are provided with a horizontal exit.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This is a clarification of the text and has no technical changes to construction requirements.

E29-21

IBC: 1009.2.1 (IFC:[BE]1009.2.1)

Proponents: Kevin Scott, representing KH Scott & Associates LLC (khscottassoc@gmail.com)

2021 International Building Code

Revise as follows:

1009.2.1 Elevators required. In buildings where a required accessible floor or occupied roof is four or more stories above or below ~~a level of exit discharge grade plane~~, not less than one required *accessible means of egress* shall be an elevator complying with Section 1009.4.

Exceptions:

1. In buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a *horizontal exit* and located at or above the *levels of exit discharge*.
2. In buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a *ramp* conforming to the provisions of Section 1012.

Reason Statement: The 2021 IBC currently requires that elevators serving the 4th floor above grade are sized to accommodate an ambulance stretcher. So, the code has made that determination that there is a reasonable limit to carrying a person in a gurney down a stairway. However, Section 1009.2.1 does not require an elevator until the building has 4 stories above the level of exit discharge.

Section 3002.4 reads as follows:

3002.4 Elevator car to accommodate ambulance stretcher. Where elevators are provided in buildings four or more stories above, or four or more stories below, grade plane, not fewer than one elevator shall be provided for fire department emergency access to all floors. The elevator car shall be of such a size and arrangement to accommodate an ambulance stretcher 24 inches by 84 inches (610 mm by 2134 mm) with not less than 5-inch (127 mm) radius corners, in the horizontal, open position and shall be identified by the international symbol for emergency medical services (star of life). The symbol shall be not less than 3 inches (76 mm) in height and shall be placed inside on both sides of the hoistway door frame.

At one time, the two sections were nearly identical in their requirements. But then, the definition of "level of exit discharge" was revised from the "horizontal plane" where exit discharge begins to the "story" where exit discharge begins. Now these two sections are no longer in sync. The current code requirements are depicted in the figures below.

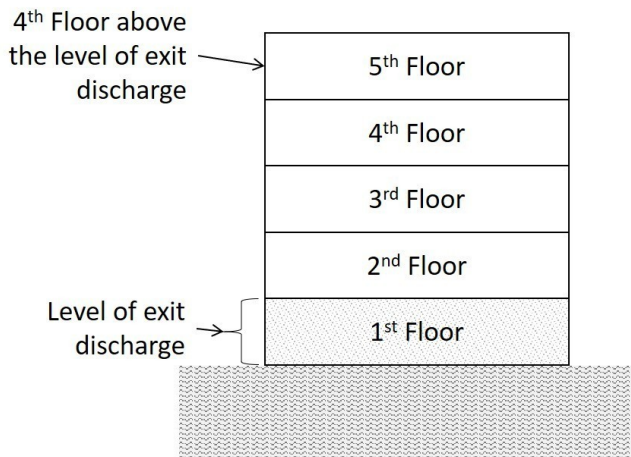


Figure 1

Section 1009.2.1 requires an elevator in this building

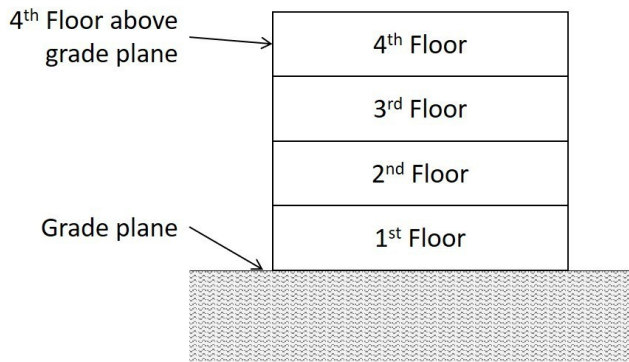


Figure 1

Section 3002.4 requires the elevator to accommodate a gurney in this building

The intent of this code change is to correlate the two requirements once again. Since previous editions contained wording for Section 1009.2.1 which required an elevator at the same floor level as Figure 2, it makes sense to revise the wording to revert back to this requirement.

Both sections will apply at the same threshold. When an elevator is required in a building, at least one of the elevator cars shall accommodate an ambulance stretcher.

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

This will increase the cost of construction since a standby generator will be required to power the elevator commencing at the 4th floor rather the 5th floor. This will only occur if a standby generator is not already provided for the building.

E30-21

IBC: 1009.2.1 (IFC:[BE] 1009.2.1)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Revise as follows:

1009.2.1 Elevators required. In buildings where a required accessible floor or occupied roof is four or more stories above or below a *level of exit discharge*, not less than one required *accessible means of egress* shall be an elevator complying with Section 1009.4.

Exceptions:

1. In buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a *horizontal exit* and located at or above the *levels of exit discharge*.
2. In buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required as part of an accessible means of egress on floors or occupied roofs provided with a *ramp* conforming to the provisions of Section 1012.

Staff Note: Proposals E30-21 and E31-21 combined and Proposal E32-21 addresses requirements in a different or contradicting manner. The committee is urged to make their intentions clear with their actions on these proposals.

Reason Statement: The intent of this proposal is to allow for ramps to serve as an accessible route off an occupied roof instead of requiring standby power on the elevator for that occupied roof. (This is **not** an exception for the accessible route requirements to these spaces in Chapter 11.) Ramps are already permitted to serve as the accessible means of egress for all floors below the roof. E30-18 added that occupied roofs to the main text, but did not add it to the exception. Ramps to all levels is commonly used in parking garages and large stadiums. The addition of "as part of the means of egress" added into the exceptions will clarify this limitation all the exception. The elevator is part of the accessible means of egress, not the only piece. When an elevator is required as part of an accessible means of egress, Section 1009.4 would require standby power.

This is one of a series of three independent proposals for this section. They work together, but could be approved separately.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

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

If on occupied roof is provided on a building with ramp access to the levels, such as a parking garage are large sports arena, this revision will clarify that standby power is not required to the elevator.

E31-21

IBC: 1009.2.1 (IFC:[BE] 1009.2.1)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Revise as follows:

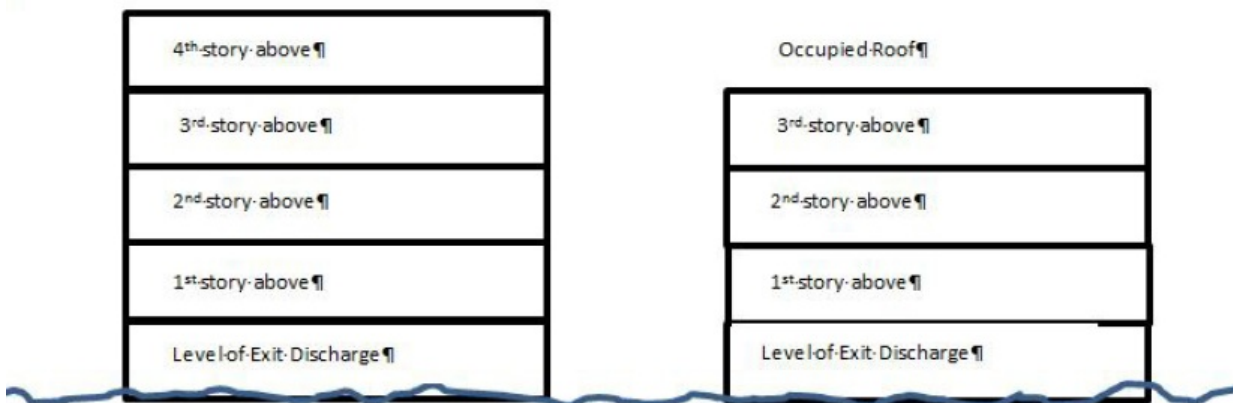
1009.2.1 Elevators required. In buildings where a required accessible floor or occupied roof is four or more stories above or below a *level of exit discharge*, not less than one required *accessible means of egress* shall be an elevator complying with Section 1009.4.

Exceptions:

1. In buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required as part of an accessible means of egress on floors provided with a *horizontal exit* and located at or above the *levels of exit discharge*.
2. In buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a *ramp* conforming to the provisions of Section 1012.
3. In buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required as part of an accessible means of egress for an occupied roof where the floors located at or above the level of exit discharge are provided with a horizontal exit.

Staff Note: Proposals E30-21 and E31-21 combined and Proposal E32-21 addresses requirements in a different or contradicting manner. The committee is urged to make their intentions clear with their actions on these proposals.

Reason Statement: The intent of this proposal is to provide an allowance for building that have a horizontal exit on all floors and an occupied roof. Code change E30-18 added standby power for a 4 story building that has an occupied roof.



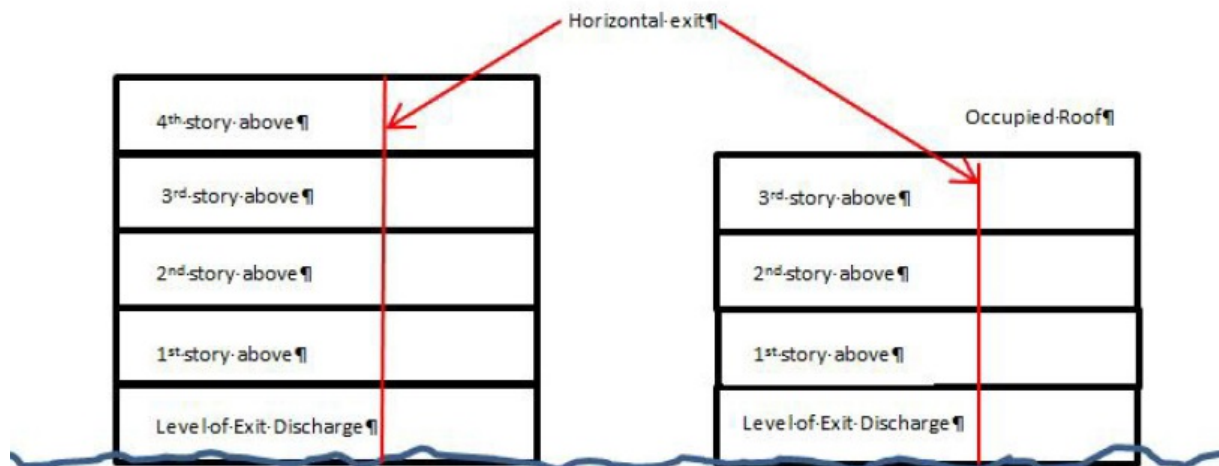
Height at which standby power would be required on the elevator for accessible-MOE

This allowances being asked for is a very minimal exception for standby power to elevators. (This is **not** an exception for the accessible route requirements to these spaces in Chapter 11.) Horizontal exits as an option for elevators to serve as part on an accessible means of egress is already permitted in Exception 1, however, Exception 1 this does not address buildings with occupied roofs.

The new Exception 3 is to allow for buildings that have horizontal exits on all floors below and occupied roof, to not have elevators are part of the accessible means of egress (and then have to add standby power to the elevator) just because there is an occupied roof area. Roofs technically cannot provide horizontal exits because then cannot be subdivided with fire barriers. The purpose of horizontal exits are to provide refuge areas on the floor for protection of occupants from smoke. By being open to the outside air, the occupant on the roof are also protected from smoke.

It is important to note that the purpose of the standby power to the roof is for fire department assisted rescue – not self evacuation. Since the building occupants may not know where the fire is in the building, using the elevator on their own could result in them delivering themselves to the fire location. The fire department could choose to use the elevators for assisted evacuation in any building under fire department recall, so this option is still open. And in a building with horizontal exits, the fire department also has the option to temporarily relocate occupants who cannot use stairways

on the occupied roof to a safe area on the floor below rather than needing to transport them all the way out of the building immediately. The following is a diagram for illustration of this exception.



Exception for occupied roof on a building with a horizontal exit.

This is one of a series of three independent proposals for this section. The proposals can work together and work separately.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

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

This would be a cost savings for building with horizontal exits by not also requiring standby power to the elevator for just the occupied roof.

E32-21

IBC: 1009.2.1 (IFC:[BE]1009.2.1)

Proponents: Eric Bressman, representing Ankrom Moisan Architects (ericb@ankrommoisan.com)

2021 International Building Code

Revise as follows:

1009.2.1 Elevators required. In buildings where a required accessible floor or occupied roof is four or more stories above or below a *level of exit discharge*, not less than one required *accessible means of egress* shall be an elevator complying with Section 1009.4.

Exceptions: An elevator complying with Section 1009.4 is not required in buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2 and where one of the following conditions exist:

1. In buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a *horizontal exit* and located at or above the *levels of exit discharge* without an occupied roof and where all floors at or above the *levels of exit discharge* are provided with a *horizontal exit*.
2. In buildings with an occupied roof and where all floors at or above the levels of exit discharge are provided with a horizontal exit and the occupied roofs are provided with exit stairways that either incorporate an area of refuge within an enlarged floor-level landing or shall be accessed from an area of refuge complying with Section 1009.6.
- 2.3. In buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on with floors or occupied roofs provided with a *ramp* conforming to the provisions of Section 1012.

Staff Note: Proposals E30-21 and E31-21 combined and Proposal E32-21 addresses requirements in a different or contradicting manner. The committee is urged to make their intentions clear with their actions on these proposals.

Reason Statement: Prior to the revisions made in the 2021 IBC, the exception to allow horizontal exits and ramps was very clear. However, the 2021 code change to add occupied roofs did not address how the exceptions could be applied since it was impossible to have a horizontal exit on an occupied roof. At the hearings, opponents to the change, and members of the committee, voiced concern about this oversight. The committee passed the proposal, but suggested that the author consider modifications during the Public Comment period. There were no comments or modifications put forth and the proposal was approved and added to the Code.

This proposal addresses multiple issues with the 'Exception' portion of the Section.

First, it moves repetitive language about sprinklers into the initial paragraph so it doesn't need to be repeated for each exception.

Second it adds occupied roofs to the exception that includes ramps. There is no reason why a ramp serving floors below the roof are sufficient to meet egress requirements and one serving a roof would not be.

Third, it adds an exception that would allow Areas of Refuge to be used for the occupied roofs. The existing exception allowing Horizontal Exits at each floor to be used in lieu of the elevator is rooted in the concept of providing a 'safe refuge' area for occupants who can't use the stairs to egress the building during a fire. The proposed new exception uses the same 'safe refuge' concept where it is impossible to construct a horizontal exit.

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

This proposal simply restores the ability to use the horizontal exit exception for those projects that include occupied roofs provided there is a safe refuge created for those occupants.

E33-21

IBC: 1009.2.1 (IFC:[BE]1009.2.1)

Proponents: Andrew Klein, representing Self Storage Association (andrew@asklein.com)

2021 International Building Code

Revise as follows:

1009.2.1 Elevators required. In buildings where a required accessible floor or occupied roof is four or more stories above or below a *level of exit discharge*, not less than one required *accessible means of egress* shall be an elevator complying with Section 1009.4.

Exceptions:

1. In buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a *horizontal exit* and located at or above the *levels of exit discharge*.
2. In buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a *ramp* conforming to the provisions of Section 1012.
3. In parking garages with no accessible parking space on levels other than the level of exit discharge, the elevator shall serve as a part of an accessible means of egress for stories or occupied roofs six or more stories above a level of exit discharge.
4. In self-service storage facilities with no accessible self-storage spaces on levels other than the level of exit discharge, the elevator shall serve as a part of an accessible means of egress for stories or occupied roofs six or more stories above a level of exit discharge.

Reason Statement: Parking garages and self-service storage facilities have extremely low occupancy loads. Increasing the 4-story limit to 6-stories for when standby power for elevators is required takes this practical difference in uses into account.

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

The significant cost of a standby generator can be avoided in 5- and 6- story parking garages and self-service storage facilities if this code change passes.

E34-21

IBC: 1009.2.2 (New) [IFC:[BE]1009.2.2 (New)]

Proponents: Gene H Boecker, Code Consultants, Inc., representing Code Consultants, Inc. (geneb@codeconsultants.com)

2021 International Building Code

Add new text as follows:

1009.2.2 Doors. Where doors are part of an accessible route to provide access to an exit, area of refuge or exterior area of assisted rescue the doors shall provide maneuvering clearances required by ICC A117.1 in the direction of egress.

Exception: Maneuvering clearances are not required at the exit stairways for levels above and below the level of exit discharge where the exit enclosure does not include an area of refuge.

Reason Statement: The purpose of this proposal is to clarify where maneuvering clearances at doorways along the route for accessible means of egress are required. This proposal is consistent with interpretations from ICC staff and the commentary. It has been unclear from the code language whether the doors into stairways that are a part of the accessible means of egress are required to comply with the door maneuvering clearance of the ICC A117.1 standard or not. Various jurisdictions interpret the requirement differently, leaving it applied inconsistently across the country.

This is not just a question at exit stairways, but rather a general concern for the accessible routes out of a building during an emergency evacuation. An exterior areas of rescue assistance or an areas of refuge is a location that a person with mobility impairments can access independently. It is at this location where the emergency responders can find them to offer assistance away from the building or down the stairway. A common question is if the doors leading to these areas are required to have maneuvering clearances on both sides of the doors. It is important that those doors be located so that they swing in the direction of travel (1010.1.2.1) and do not block other occupants leaving the building. Best practice would also have the door positioned to allow for a quick and direct entry into the wheelchair spaces required in Section 1009.6.3. A balance for general safety and accessibility must be considered, therefore, an accessible route back into the building for an egress only route should not be a minimum requirement.

If the accessible route at the level of exit discharge is through the stairway, maneuvering clearances need to be provided in the direction of egress travel so a person can self-evacuate.

The purpose of the exception is for situations where the person is waiting outside of the stairway for emergency assistance since there is not a required area of refuge in the stairway of sprinklered buildings (1009.3.3). There may be situations where it is desirable to ask people to move to the stairways for assistance in some situations. The activation of the sprinklers, automatic notification of the fire department, and the information from the fire alarm panel when the fire department arrives should make it so that someone would not have to move into the stairway enclosure. The fire department also has the option for using the elevator for assisted evacuation in any elevator building using fire department recall; with the additional improvements of standby power (1009.4.1) at five stories and the fire service access elevator protections (3006) at 120 feet.

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

The proposal is to insert language into the code to address the manner in which it is currently being interpreted. It will neither increase not decrease costs.

E35-21

IBC: 1009.8, UL Chapter 35 (New) [IFC:[BE]1009.8, UL Chapter 80 (New)]

Proponents: Joseph R Cervantes, Space Age Electronics, representing Space Age Electronics (joseph.cervantes@1sae.com)

2021 International Building Code

Revise as follows:

1009.8 Two-way communication. A two-way communication system complying with Sections 1009.8.1, 1009.8.2, UL 2525 and installed in accordance with NFPA 72 shall be provided at the landing serving each elevator or bank of elevators on each accessible floor that is one or more stories above or below the *level of exit discharge*.

Exceptions:

1. Two-way communication systems are not required at the landing serving each elevator or bank of elevators where the two-way communication system is provided within *areas of refuge* in accordance with Section 1009.6.5.
2. Two-way communication systems are not required on floors provided with *ramps* conforming to the provisions of Section 1012.
3. Two-way communication systems are not required at the landings serving only service elevators that are not designated as part of the *accessible means of egress* or serve as part of the required *accessible route* into a facility.
4. Two-way communication systems are not required at the landings serving only freight elevators.
5. Two-way communication systems are not required at the landing serving a private residence elevator.
6. Two-way communication systems are not required in Group I-2 or I-3 facilities.

Add new standard(s) as follows:

UL

UL LLC
333 Pfingsten Road
Northbrook IL 60062

UL 2525-2020: UL STANDARD FOR SAFETY Two-Way Emergency Communications Systems for Rescue Assistance

Staff Analysis: A review of the standard proposed for inclusion in the code, UL 2525-2020, 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 March 20, 2021.

Staff Note: E35-21, E36-21 and G59-21 addresses requirements in a different manner. The committee is urged to make their intentions clear with their actions on these proposals.

Reason Statement: This proposal is being generated to create a pointer from the IBC 1009.8.1 to the appropriate NFPA standard for 2 Way Wired Emergency Communications Systems in buildings referenced in the model standard. As a critical emergency communications system for ADA Accessibility, there must be language added to the model code so that the local authority having jurisdiction can point to the appropriate standard section for permit, installation, approval and service and routine maintenance of this life safety system. These systems are required to meet the minimum requirements of NFPA 72 CH 24.10 and UL 2525 UL STANDARD FOR SAFETY Two-Way Emergency Communications Systems for Rescue Assistance

Example: Email evidence from local jurisdiction: At the City of XXX XXXXX, we only enforce the code as it is written or as we have amended it. Neither in CBC chapter 4 or 10 does the code send the user to install per NFPA 72. Therefore, the 2-way communication for area of refuge and for stair unlocking is not required to comply with NFPA 72. In addition, the code does not use UL 2525 as a referenced standard so it is unenforceable. Perhaps, for upcoming building codes, this will be changed and, at that time, we would be glad to look into this issue. At this time, these systems are reviewed and inspected as any other low voltage system that is not fire alarm.

Bibliography: [International Building Code] [2015 Edition] [International Code Council] [2014] [259-260]
[<https://codes.iccsafe.org/public/document/toc/542/>]
[National Fire Alarm and Signaling Code] [NFPA 72, 2016 Edition] [National Fire Protection Association] [2015]
[<http://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=72>]

Cost Impact: The code change proposal will increase the cost of construction Enforcement of NFPA 72 and UL 2525 as the referenced standards for 2 Way Communications Systems will increase local agency revenues for permitting and approvals of these systems. Manufactures will need to update their hardware and software to meet all current requirements of UL2525 and NFPA 72 for survivability and proper operation time in an emergency. The creation of a digital system will also reduce the amount of conductors required to install these systems, so while hardware prices will increase, installation labor and materials to install shall decrease. This change will also begin the process of routine maintenance of these systems as required in NFPA 72 for Emergency systems under Chapter 14, so building owners will need to maintain these systems with their current service providers.

E36-21

IBC: 1009.8.1.1 (New), UL Chapter 35 (New) [IFC:[BE] 1009.8.1.1 (New), UL Chapter 80 (New)]

Proponents: Richard Roberts, Honeywell, representing Automatic Fire Alarm Association (AFAA) (richard.roberts@systemsensor.com)

2021 International Building Code

1009.8.1 System requirements. Two-way communication systems shall provide communication between each required location and the *fire command center* or a central control point location *approved* by the fire department. Where the central control point is not a *constantly attended location*, the two-way communication system shall have timed, automatic telephone dial-out capability that provides two-way communication with an approved supervising station or 9-1-1. The two-way communication system shall include both audible and visible signals.

Add new text as follows:

1009.8.1.1 Listing and Installation. Two-way communication systems shall be listed in accordance with UL 2525 and installed in accordance with NFPA 72.

Add new standard(s) as follows:

UL

UL LLC
333 Pfingsten Road
Northbrook IL 60062

UL 2525-2020: Two-Way Emergency Communications Systems for Rescue Assistance (1st Ed, June 12, 2020)

Staff Analysis: A review of the standard proposed for inclusion in the code, UL 2525-2020, 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 March 20, 2021.

Staff Note: E35-21, E36-21 and G59-21 addresses requirements in a different manner. The committee is urged to make their intentions clear with their actions on these proposals.

Reason Statement: Every code required emergency system has a standard for the product and a standard for the installation. These are the basics of the minimum level of Building Life Safety. These systems are installed to allow those occupants challenged with evacuating a building with areas of safety with two way communication systems from the safe area to the building command center or reliable source. These products are Life Safety Systems, they need to work right the first time when they are needed in an emergency condition. The building code needs have the basic requirements for quality products via the UL standard, and the installation requirements per NFPA 72. The edition of NFPA 72 has detailed requirements for installation of Two-Way Communication Systems. (Chapter 24).

UL 2525 Standard for Two-Way Emergency Communications Systems for Rescue Assistance.

This is a new Product Standard. The products covered by this standard are intended to be used in combination with other devices to form a rescue assistance two-way emergency communication system. These products provide all monitoring, control, and indicating functions of the system. An installation document(s) provided with the product describes the various products needed to form a rescue assistance two-way emergency communication system and their intended use and installation. This standard includes systems used for emergency communication in the following situations:

- a) Exit stairs, stairways, or stair landings (Stairway Communications Systems)
- b) Elevator lobbies and landings (Elevator Landing Communications Systems)
- c) Occupant evacuation elevator lobbies (Occupant Evacuation Elevator Lobby Communications Systems)
- d) Area(s) of Rescue Assistance or Area(s) for Assisted Rescue Communications Systems
- e) Area(s) of Refuge Communications Systems
- f) Other similar two-way emergency communications systems

NFPA 72 within Chapter 24 has the requirements for installation of these systems including main panels, remote panels, remote call stations, pathway integrity and back up power. These systems are not Fire Alarm Systems but do share many of the key Life Safety Performance aspects. As mentioned, these systems are generally **only** used in an Emergency Condition. This justifies the need for monitoring of integrity, pathway performance and alignment with the performance standards within UL 2525 outlined above. It should be noted, NFPA 72 does not require the

systems to be installed, it just outlines how to install these systems safely.

UL 2524 needs to be added to the list of published standards in Chapter 35.

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

The UL Listing of the products does have a cost compared to Non-listed equipment; in general terms it would be about 2-4% added cost of the "product".

NFPA 72 installation standard should be the minimum standard to quality installation, there is a connection within NFPA 72 and I-Codes that NFPA 70 always be followed. Therefore, the cost impact to install a system correctly is minimal. It could be stated that the impact of installing per NFPA 72 could impact the installation cost 3-5%.

Generally, of the total installed system cost, the equipment/products are 25% and installation is 75% of the total cost. Please understand we are not really adding additional items or cost to the level of the existing code requirements, these systems have been required for many years. The purpose of this important code change proposal is to provide a "standard" for products and installation that has been missing.

E37-21 Part I

PART I - IBC: 1009.11, 3002.3; IFC:([BE] 1009.11), 604.4

PART II - IFC: 1103.3.2

Proponents: Gene Boecker, representing Code Consultants, Inc. (geneb@codeconsultants.com)

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY THE MEANS OF EGRESS CODE COMMITTEE. PART II WILL BE HEARD BY THE FIRE CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Building Code

Revise as follows:

1009.11 Instructions. In areas of refuge, and exterior areas for assisted rescue, and locations required to provide two-way communications systems complying with Section 1009.8 instructions on the use of the area under emergency conditions shall be posted. Signage shall comply with the ICC A117.1 requirements for visual characters. The instructions shall include all of the following:

1. Persons able to use the *exit stairway* do so as soon as possible, unless they are assisting others.
2. Information on planned availability of assistance in the use of *stairs* or supervised operation of elevators and how to summon such assistance.
3. Directions for use of the two-way communication system where provided.

3002.3 Emergency signs. ~~A An approved~~ pictorial sign of a standardized design shall be posted adjacent to each elevator call station on all floors instructing occupants to use the exit stairways and not to use the elevators in case of fire. Where elevators are not a component of the accessible means of egress the The sign shall read: IN CASE OF FIRE, ELEVATORS ARE OUT OF SERVICE. USE EXIT STAIRS. Where the elevator is a component of the accessible means of egress a sign complying with Section 1009.11 shall be provided.

Exception Exceptions:

1. ~~The emergency sign shall not be required for elevators that are part of an accessible means of egress complying with Section 1009.4.~~
2. The emergency sign shall not be required for elevators that are used for occupant self-evacuation in accordance with Section 3008.

2021 International Fire Code

Revise as follows:

[BE] 604.4 Emergency signs. ~~A An approved~~ pictorial sign of a standardized design shall be posted adjacent to each elevator call station on all floors instructing occupants to use the exit *stairways* and not to use the elevators in case of fire. Where elevators are not a component of the accessible means of egress the The sign shall read: "IN CASE OF FIRE, ELEVATORS ARE OUT OF SERVICE. USE EXIT STAIRS." Where the elevator is a component of the accessible means of egress a sign complying with Section 1009.11 shall be provided.

Exceptions-Exception:

1. ~~The emergency sign shall not be required for elevators that are part of an accessible means of egress complying with Section 1009.4.~~
2. The emergency sign shall not be required for elevators that are used for occupant self-evacuation in accordance with Section 3008 of the International Building Code.

Staff note: IFC Section 604.4 has an errata for the elevator signage so that it matches current IBC Section 3002.3.

E37-21 Part II

PART II - IFC: 1103.3.2

Proponents: Gene Boecker, representing Code Consultants, Inc. (geneb@codeconsultants.com)

2021 International Fire Code

Revise as follows:

1103.3.2 Elevator emergency operation. Existing elevators with a travel distance of 25 feet (7620 mm) or more above or below the main floor or other level of a building and intended to serve the needs of emergency personnel for fire-fighting or rescue purposes shall be provided with emergency operation in accordance with ASME A17.3.

Exceptions:

1. Buildings without occupied floors located more than 55 feet (16 764 mm) above or 25 feet (7620 mm) below the lowest level of fire department vehicle access where protected at the elevator shaft openings with additional fire doors in accordance with Section 716 of the International Building Code and where all of the following conditions are met:
 - 1.1. The doors shall be provided with vision panels of *approved* fire-protection-rated glazing so located as to furnish clear vision of the approach to the elevator. Such glazing shall not exceed 100 square inches (0.065 m²) in area.
 - 1.2. The doors shall be held open but be automatic-closing by activation of a fire alarm initiating device installed in accordance with the requirements of NFPA 72 as for Phase I Emergency Recall Operation, and shall be located at each floor served by the elevator; in the associated elevator machine room, control space, or control room; and in the elevator hoistway, where sprinklers are located in those hoistways.
 - 1.3. The doors, when closed, shall have signs visible from the approach area stating: "WHEN THESE DOORS ARE CLOSED OR IN CASE OF FIRE EMERGENCY, DO NOT USE ELEVATOR-ELEVATORS ARE OUT OF SERVICE. USE EXIT STAIRWAYS."
2. Buildings without occupied floors located more than 55 feet (16 764 mm) above or 25 feet (7620 mm) below the lowest level of fire department vehicle access where provided with *automatic sprinkler systems* installed in accordance with Section 903.3.1.1 or 903.3.1.2.
3. Freight elevators in buildings provided with both *automatic sprinkler systems* installed in accordance with Section 903.3.1.1 or 903.3.1.2 and not less than one ASME 17.3-compliant elevator serving the same floors.

Elimination of previously installed Phase I emergency recall or Phase II emergency in-car systems shall not be permitted.

Reason Statement: The proposal seeks to fill a hole in the current code provision. It includes a requirement for instructions for use of the two-way communications system but does not require the sign to be provided at locations where there is a two-way communications system. This proposal is directed at making this provision clearer and better directed at people with mobility disabilities. The exception was added for that purpose, but it does not go far enough.

The word "approved" means nothing. All plans must be approved by the AHJ.

The stricken text at the end of the first sentence is because it is not necessary. The verbiage states the specific requirement. Also, where the sign from Section 1009.11 is provided, it could be considered a contradiction.

The word "STAIR" is stricken because that is not a part of the provisions of Section 2.27.9 in the ASME/A17.1 Elevator Code. This puts the text in accordance with the Elevator Code (see below).

The added text in both the second sentence and new third sentence is to differentiate when it is appropriate to use one sign or the other.

Exception number 1 is deleted, and the provision is added to the main body of the requirement. This is to avoid confusion and provide additional information for the person at the elevator call station. Where the elevator is a part of the accessible means of egress, the current text allows but does not require the omission of the sign stating "... ELEVATORS ARE OUT OF SERVICE. USE EXIT." This can lead to confusion where the sign is present, and the elevator is part of the accessible means of egress. This does not provide a person with a mobility device the necessary information they need. By requiring one sign for an elevator that is a part of the accessible means of egress and a different sign for an elevator which is not, the person using the elevator will better understand the capability of the elevator to provide their evacuation.

2.27.9 Elevator Corridor Call Station Pictograph

When the building code requires a sign be posted adjacent to hall call fixtures instructing occupants not to use the elevator in case of fire, the sign shown in Exhibit S2.5 shall be provided. The sign shall include only the wording and graphics shown in Exhibit S2.5. When the building code specifies a different design, 2.27.9 shall not apply.

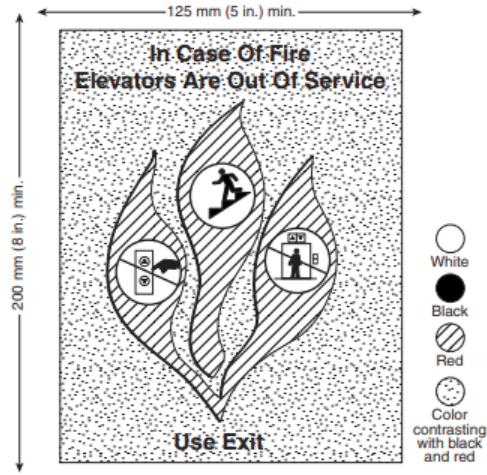


Exhibit S2.5 Elevator Corridor Call Station Pictograph.
(From ASME A17.1 Section 2.27, Fig. 2.27.9)

EXTRACTS FROM ASME A17.1 HANDBOOK, SECTION 2.27 EMERGENCY OPERATION AND SIGNALING DEVICES"

Bibliography: ASME A17.1 - Elevator Code

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

The proposal is a clarification. Currently there is a sign required at the elevator. A sign will still be required at the elevator. The difference is that the signage will be clearer in it's application.

E38-21

IBC: 1003.3.1, 1010.1.1, 1010.1.1.1 (IFC:[BE]1003.3.1, 1010.1.1, 1010.1.1.1)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Revise as follows:

1010.1.1 Size of doors. The required capacity of each door opening shall be sufficient for the *occupant load* thereof and shall provide a minimum clear opening width of 32 inches (813 mm). The clear opening width of doorways with swinging doors shall be measured between the face of the door and the frame stop, with the door open 90 degrees (1.57 rad). Where this section requires a minimum clear opening width of 32 inches (813 mm) and a door opening includes two door leaves without a mullion, one leaf shall provide a minimum clear opening width of 32 inches (813 mm). In Group I-2, doors serving as means of egress doors where used for the movement of beds shall provide a minimum clear opening width of 41½ inches (1054 mm). The minimum clear opening height of doors shall be not less than 80 inches (2032 mm).

Exceptions:

1. In Group R-2 and R-3 *dwelling and sleeping units* that are not required to be an *Accessible unit, Type A unit or Type B unit*, the minimum width shall not apply to door openings that are not part of the required *means of egress*.
2. In Group I-3, door openings to resident *sleeping units* that are not required to be an *Accessible unit* shall have a minimum clear opening width of 28 inches (711 mm).
3. Door openings to storage closets less than 10 square feet (0.93 m²) in area shall not be limited by the minimum clear opening width.
4. The maximum width of door leaves in revolving doors that comply with Section 1010.3.1 shall not be limited.
5. The maximum width of door leaves in *power-operated doors* that comply with Section 1010.3.2 shall not be limited.
6. Door openings within a *dwelling unit or sleeping unit* shall have a minimum clear opening height of 78 inches (1981 mm).
7. In *dwelling and sleeping units* that are not required to be *Accessible, Type A or Type B units*, exterior door openings other than the required *exit door* shall have a minimum clear opening height of 76 inches (1930 mm).
8. In Groups I-1, R-2, R-3 and R-4, in *dwelling and sleeping units* that are not required to be *Accessible, Type A or Type B units*, the minimum clear opening widths shall not apply to interior egress doors.
9. Door openings required to be *accessible* within *Type B units* intended for user passage shall have a minimum clear opening width of 31.75 inches (806 mm).
10. Doors to walk-in freezers and coolers less than 1,000 square feet (93 m²) in area shall have a maximum width of 60 inches (1524 mm) nominal.
11. Doors serving nonaccessible single-user shower or sauna compartments, toilet stalls or dressing, fitting or changing rooms shall have a minimum clear opening width of 20 inches (508 mm).

1010.1.1.1 Projections into clear opening. There shall not be projections into the required clear opening width lower than 34 inches (864 mm) above the floor or ground. Projections into the clear opening width between 34 inches (864 mm) and 80 inches (2032 mm) above the floor or ground shall not exceed 4 inches (102 mm).

Exception: Door closers, overhead door stops, frame stops, power door operators, and electromagnetic door locks shall be permitted to project into the door opening height not lower than 78 inches (1980 mm) minimum above the floor.

1003.3.1 Headroom. Protruding objects are permitted to extend below the minimum ceiling height required by Section 1003.2 where a minimum headroom of 80 inches (2032 mm) is provided over any circulation paths, including walks, *corridors, aisles* and passageways. Not more than 50 percent of the ceiling area of a *means of egress* shall be reduced in height by protruding objects.

Exception: ~~Door closers and stops shall not reduce headroom to less than 78 inches (1981 mm).~~ Door closers, overhead door stops, frame stops, power door operators, and electromagnetic door locks shall be permitted to project into the door opening height not lower than 78 inches (1980 mm) minimum above the floor.

A barrier shall be provided where the vertical clearance above a *circulation path* is less than 80 inches (2032 mm) high above the finished floor. The leading edge of such a barrier shall be located 27 inches (686 mm) maximum above the finished floor.

Reason Statement: The intent of this proposal is to remove some confusing text. The last sentence of main paragraph, was changed (E47-15 by BCAC) for consistent terminology. However, by changing the door height to “clear opening” instead of “opening”, now has code officials asking if the threshold and overhead stop need to be considered in the 80” height or not? (Door stops are excluded for the width of door openings in the 2nd sentence of Section 1010.1.1.) With the clarification in Section 1010.1.1.1 as part of E41-18, door stops at the top are permitted into the opening height.

The proposed revision in Section 1003.3.1 correlation with Section 1010.1.1.1.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is a clarification of requirement, not a change in door size or door opening size.

E39-21

IBC: 1010.1.1, 1010.4 (IFC:[BE]1010.1.1, 1010.4)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Revise as follows:

1010.1.1 Size of doors. The required capacity of each door opening shall be sufficient for the *occupant load* thereof and shall provide a minimum clear opening width of 32 inches (813 mm). The clear opening width of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees (1.57 rad). Where this section requires a minimum clear opening width of 32 inches (813 mm) and a door opening includes two door leaves without a mullion, one leaf shall provide a minimum clear opening width of 32 inches (813 mm). In Group I-2, doors serving as means of egress doors where used for the movement of beds shall provide a minimum clear opening width of 41½ inches (1054 mm). The minimum clear opening height of doors shall be not less than 80 inches (2032 mm).

Exceptions:

1. In Group R-2 and R-3 *dwelling and sleeping units* that are not required to be an *Accessible unit*, *Type A unit* or *Type B unit*, the minimum width shall not apply to door openings that are not part of the required *means of egress*.
2. In Group I-3, door openings to resident *sleeping units* that are not required to be an *Accessible unit* shall have a minimum clear opening width of 28 inches (711 mm).
3. Door openings to storage closets less than 10 square feet (0.93 m²) in area shall not be limited by the minimum clear opening width.
4. ~~The maximum width of door leaves in revolving doors that comply with Section 1010.3.1 shall not be limited.~~
5. ~~The maximum width of door leaves in power-operated doors that comply with Section 1010.3.2 shall not be limited.~~
- 4.6. Door openings within a *dwelling unit* or *sleeping unit* shall have a minimum clear opening height of 78 inches (1981 mm).
- 5.7. In *dwelling and sleeping units* that are not required to be *Accessible*, *Type A* or *Type B units*, exterior door openings other than the required *exit* door shall have a minimum clear opening height of 76 inches (1930 mm).
- 6.8. In Groups I-1, R-2, R-3 and R-4, in *dwelling and sleeping units* that are not required to be *Accessible*, *Type A* or *Type B units*, the minimum clear opening widths shall not apply to interior egress doors.
- 7.9. Door openings required to be *accessible* within *Type B units* intended for user passage shall have a minimum clear opening width of 31.75 inches (806 mm).
10. ~~Doors to walk-in freezers and coolers less than 1,000 square feet (93 m²) in area shall have a maximum width of 60 inches (1524 mm) nominal.~~
- 8.11. Doors serving nonaccessible single-user shower or sauna compartments, toilet stalls or dressing, fitting or changing rooms shall have a minimum clear opening width of 20 inches (508 mm).

1010.4 Gates. Gates serving the *means of egress* system shall comply with the requirements of this section. Gates used as a component in a *means of egress* shall conform to the applicable requirements for doors.

~~**Exception:** Horizontal sliding or swinging gates exceeding the 4-foot (1219 mm) maximum leaf width limitation are permitted in fences and walls surrounding a stadium.~~

Reason Statement: E39-18 deleted the maximum width requirements from the base provisions, therefore Exceptions 4 and 5 are no longer needed. There's no need to limit the size of doors for power-operated doors or power-operated revolving doors. The standards referenced for power-operated doors and power-operated revolving doors require safety features for all these doors.

The only exception remaining that deals with the maximum door size is Exception 10. With the maximum size deleted from the base paragraph, this exception is technically no longer an exception to the main text, so it should be deleted for both technical reasons and consistency. If the doors do not have a maximum width, the size limit for gates is not needed in the exception.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

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

There is no technical changes to requirements for power operated or revolving doors because this is regulated by the standard. This may allow

additional design options for walk-in coolers and freezers.

E40-21

IBC: 1010.1.1 (IFC:[BE] 1010.1.1)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Revise as follows:

1010.1.1 Size of doors. The required capacity of each door opening shall be sufficient for the *occupant load* thereof and shall provide a minimum clear opening width of 32 inches (813 mm). The clear opening width of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees (1.57 rad). Where this section requires a minimum clear opening width of 32 inches (813 mm) and a door opening includes two door leaves without a mullion, one leaf shall provide a minimum clear opening width of 32 inches (813 mm). In Group I-2, doors serving as means of egress doors where used for the movement of beds shall provide a minimum clear opening width of 41½ inches (1054 mm). The minimum clear opening height of doors shall be not less than 80 inches (2032 mm).

Exceptions:

1. In Group R-2 and R-3 *dwelling and sleeping units* that are not required to be an *Accessible unit, Type A unit or Type B unit*, the minimum width shall not apply to door openings that are not part of the required *means of egress*.
2. In Group I-3, door openings to resident *sleeping units* that are not required to be an *Accessible unit* shall have a minimum clear opening width of 28 inches (711 mm).
3. Door openings to storage closets less than 10 square feet (0.93 m²) in area shall not be limited by the minimum clear opening width.
4. The maximum width of door leaves in revolving doors that comply with Section 1010.3.1 shall not be limited.
5. The maximum width of door leaves in *power-operated doors* that comply with Section 1010.3.2 shall not be limited.
6. Door openings within a *dwelling unit or sleeping unit* shall have a minimum clear opening height of 78 inches (1981 mm).
7. In *dwelling and sleeping units* that are not required to be *Accessible, Type A or Type B units*, exterior door openings other than the required *exit* door shall have a minimum clear opening height of 76 inches (1930 mm).
8. In Groups I-1, R-2, R-3 and R-4, in *dwelling and sleeping units* that are not required to be *Accessible, Type A or Type B units*, the minimum clear opening widths shall not apply to interior egress doors.
9. Door openings required to be *accessible* within *Type B units* intended for user passage shall have a minimum clear opening width of 31.75 inches (806 mm).
10. Doors to walk-in freezers and coolers less than 1,000 square feet (93 m²) in area shall have a maximum width of 60 inches (1524 mm) nominal.
11. Doors serving ~~nonaccessible single-user shower or sauna compartments, toilet stalls, compartments or dressing, fitting or changing rooms - compartments~~ that are not required to be accessible shall have a minimum clear opening width of 20 inches (508 mm).
12. Door serving shower compartments in other than Accessible units or Type A units are not required to provide a minimum clear opening width.

Reason Statement: The intent of this proposal clarify which spaces the exception applies to, and remove a conflict for shower compartments with sliding shower compartment doors.

E40-18 was a proposal that added an exception for non-accessible dressing rooms or fitting rooms. This was Disapproved during the Committee Action Hearings because it could be applied to a large changing room that accommodates several individuals, such as a bridal fitting room where the 32" clear width door opening is necessary. The revision to Exception #11 would clarify that this applies to compartments, not rooms. The Proponent submitted a Public Comment revising and combining some of the exceptions into one exception for doors serving non-accessible single-user showers, toilet stalls, and dressing rooms, and allowed for a minimum clear opening width of 20". The Reason Statement stated that the 20" width came from research to address doors serving these types of individual uses, and that it would address the needs of non-accessible dressing rooms, single-use toilet rooms, and shower compartments — all for single-person use rooms.

Exception #11 currently requires a 20" minimum clear opening for doors serving non-accessible single shower compartments. But that minimum clear opening width would conflict with the width of a sliding door on a standard 36"x36" shower compartments.

Revising exception #11 would remove shower compartments from the list of spaces where a 20" clear width opening requirement would apply to the door opening and move that to exception #12. Shower compartments in Accessible and Type A units would comply with 2017 ICC A117.1 requirements in Section 608.7. Type B units do not have a requirement for an opening width of the shower compartment door (2017 ICC A117.1

Section 1104.5.2 and 1004.11.3.1.3.3). This change to the exceptions in this section would protect remodelers who do work on Type B or non-accessible bathrooms with limited space and without having to make adjustments such as moving the walls of a shower unit to accommodate a 20" clear width door opening or to change to enclosure to a swinging instead of a sliding door. This would be an unnecessary additional cost. This width has never been identified as a safety hazard.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

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

This will allow for standard sliding shower doors instead of requiring swinging doors on shower compartments. Swinging doors typically also need a larger room size.

E44-21

IBC: 1010.2.3 (IFC:[BE]1010.2.3)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Revise as follows:

1010.2.3 Hardware height. Door handles, pulls, latches, locks and other operating devices shall be installed 34 inches (864 mm) minimum and 48 inches (1219 mm) maximum above the finished floor. ~~Locks used only for security purposes and not used for normal operation are permitted at any height.~~

~~**Exceptions: Exception:** Access doors or gates in barrier walls and fences protecting pools, spas and hot tubs shall be permitted to have operable parts of the latch release on self-latching devices at 54 inches (1370 mm) maximum above the finished floor or ground, provided that the self-latching devices are not also self-locking devices operated by means of a key, electronic opener or integral combination lock.~~

1. Locks used only for security purposes and not used for normal operation are permitted at any height.
2. Where the International Swimming Pool and Spa Code requires restricting access to a pool, spa, or hot tub, on the ingress side of the door or gate providing access to a pool, spa, or hot tub, the operable parts of the latch release on self-latching devices shall be permitted to be at 54 inches (1370 mm) maximum above the finished floor or ground, provided that the self-latching device is not a self-locking devices operated by means of a key, electronic opener or integral combination lock.

Reason Statement: It should be noted this 2nd exception – current, and as revised – does not include self-locking hardware operated by a key or similar device on the ingress side of a door or gate providing access to a pool, spa, or hot tub, which are required to comply with the 34” to 48” AFF requirement. Why? Occupants that may be at risk because of the pool, spa, or hot tub (i.e. children) would not have access to the key, magnetic card, code, etc. needed to unlock the door or gate controlling access to a pool, spa, or hot tub. The last sentence of the charging language is actually an exception to the first sentence.

What was an exception is now the 2nd exception with revisions to communicate the context: the access side (ingress side) of doors or gates restricting access to a pool, spa, or hot tub. The context is a big part of the challenge of understanding this “shall be permitted” language allowing the operable devices of non-locking door hardware on doors or gates providing access to pools, spas, or hot tubs to be up to 54” above the floor. Our “code brains” are conditioned to look at door locking provisions from the egress side perspective. BUT, these “shall be permitted” provisions are on the ingress side of the door which provides access to the pool, spa, or hot tub.

The revised exception to 1010.2.3 retains the option of installing non-locking latching hardware on the access side (ingress side) of a door or gate providing access to a pool, spa, or hot tub up to 54” above the finished floor, which may be out of reach to smaller children.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This is a clarification, no technical change is intended.

E46-21

IBC: 1010.2.4 (IFC:[BE]1010.2.4)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Revise as follows:

1010.2.4 Locks and latches. Locks and latches shall be permitted to prevent operation of doors where any of the following exist:

1. Places of detention or restraint.
2. In Group I-1, Condition 2 and Group I-2 occupancies where the clinical needs of persons receiving care require containment or where persons receiving care pose a security threat, provided that all clinical staff can readily unlock doors at all times, and all such locks are keyed to keys carried by all clinical staff at all times or all clinical staff have the codes or other means necessary to operate the locks at all times.
3. In buildings in occupancy Group A having an *occupant load* of 300 or less, Groups B, F, M and S, and in *places of religious worship*, the main door or doors are permitted to be equipped with key-operated locking devices from the egress side provided:
 - 3.1. The locking device is readily distinguishable as locked.
 - 3.2. A readily visible durable sign is posted on the egress side on or adjacent to the door stating: THIS DOOR TO REMAIN UNLOCKED WHEN THIS SPACE IS OCCUPIED. The sign shall be in letters 1 inch (25 mm) high on a contrasting background.
 - 3.3. The use of the key-operated locking device is revocable by the *building official* for due cause.
4. Where egress doors are used in pairs, *approved* automatic flush bolts shall be permitted to be used, provided that the door leaf having the automatic flush bolts does not have a doorknob or surface-mounted hardware.
5. Doors from individual *dwelling* or *sleeping units* of Group R occupancies ~~having an occupant load of 10 or less~~ permitted to have a single exit in accordance with Section 1006.2.1 or 1006.3.4 are permitted to be equipped with a night latch, dead bolt or security chain, that require a second releasing motion, provided such devices are openable from the inside without the use of a key or tool.
6. *Fire doors* after the minimum elevated temperature has disabled the unlatching mechanism in accordance with *listed fire door* test procedures.
7. Doors serving roofs not intended to be occupied shall be permitted to be locked preventing entry to the building from the roof.
8. Other than egress *courts*, where occupants must egress from an exterior space through the building for *means of egress*, exit access doors shall be permitted to be equipped with an approved locking device where installed and operated in accordance with all of the following:
 - 8.1. The maximum *occupant load* shall be posted where required by Section 1004.9. Such signage shall be permanently affixed inside the building and shall be posted in a conspicuous space near all the exit access doorways.
 - 8.2. A weatherproof telephone or two-way communication system installed in accordance with Sections 1009.8.1 and 1009.8.2 shall be located adjacent to not less than one required exit access door on the exterior side.
 - 8.3. The egress door locking device is readily distinguishable as locked and shall be a key-operated locking device.
 - 8.4. A clear window or glazed door opening, not less than 5 square feet (0.46 m²) in area, shall be provided at each exit access door to determine if there are occupants using the outdoor area.
 - 8.5. A readily visible, durable sign shall be posted on the interior side on or adjacent to each locked required exit access door serving the exterior area stating, "THIS DOOR TO REMAIN UNLOCKED WHEN THE OUTDOOR AREA IS OCCUPIED." The letters on the sign shall be not less than 1 inch (25.4 mm) high on a contrasting background.
 - 8.6. The *occupant load* of the occupied exterior area shall not exceed 300 occupants in accordance with Section 1004.
9. Locking devices are permitted on doors to balconies, decks or other exterior spaces serving individual dwelling or sleeping units.
10. Locking devices are permitted on doors to balconies, decks or other exterior spaces of 250 square feet (23.23 m²) or less serving a private office space.

Reason Statement: The intent of this provision is to coordinate with the change in Table 1006.2 for single exit dwelling units in E17-15 which changed R-2, R-3 and R-4 requirements for single exit dwelling units from 10 to 20 occupants. This was essentially moving an existing exception for sprinklered dwelling units into the table since all Group R are sprinklered. It is appropriate to coordinate Section 1010.2.4 with this allowance to allow deadbolts to be installed for security on these doors. In order to not have a conflict in the future if this changes again, rather than change the number of occupant for individual dwelling units it is more appropriate to reference the section. The reference to Section 1006.3.4 is to allow for the individual dwelling units addressed in Exceptions 4 and 5.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is a coordination of current requirement.

E55-21

IBC: SECTION 202 (New), 1010.2.15 (New) [IFC:[BE] SECTION 202 (New), 1010.2.15 (New)]

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Add new definition as follows:

CONTROL VESTIBULE. A space with doors in series such that when one door is open the other door is interlocked and cannot be opened.

Add new text as follows:

1010.2.15 Control vestibule. Control vestibules shall be permitted for security, clinical needs or environmental control in Groups F, H-5, and S and in Groups B, I-1, I-2, and M where the occupant load of the room or space served by the control vestibule is less than 50. Where doors in the means of egress are configured as a control vestibule, the control vestibule door locking system shall provide for egress. The control vestibule shall comply with all of the following:

1. On the egress side of each door of the control vestibule, an approved override shall be provided which deactivates the interlock of the door when that door is interlocked. Signage shall be provided with instructions on the use of the override.
2. Where an automatic sprinkler system or automatic fire detection system is provided, upon activation of such system the interlock function of the door locking system of the control vestibule shall deactivate.
3. Upon loss of power to the interlock function of the doors, the interlock function of the door locking system of the control vestibule shall deactivate.
4. The egress path from any point shall not pass through more than one control vestibule.
5. The control vestibule door interlocking system units shall be listed in accordance with UL 294.

Reason Statement: This proposal includes a definition for “control vestibule” and offers detailed requirements for control vestibules. This vestibule system controls egress temporarily. One door must be closed for the other to open.

Control vestibules – which have doors in series which are interlocked – are being incorporated in the means of egress in a variety of occupancies. The IBC is currently silent regarding requirements and guidance for control vestibules. This proposal offers requirements (guidance) for control vestibules in the means of egress.

The significant difference between typical doors in series in the means of egress (i.e. one after the other) and doors in the means of egress configured as a control vestibule is the doors of a control vestibule are interlocked such that when one door of a control vestibule is open, the other door in series in the control vestibule is temporarily locked; and conversely, in the means of egress when all doors of a control vestibule are closed, any door may be opened.

Control vestibules are most commonly configured as a space with two doors in series. But, some control vestibules are configured with more than one inner door and / or more than one outer door. For example, where a control vestibule is required to help keep clean rooms clean, there may be inner doors from three different clean rooms opening into the control vestibule, and one outer door for leaving the control vestibule in the direction of egress.

It should be noted that control vestibules on the access (ingress) side of doors controlling access into a building or into a space within a building are more common than control vestibules on the egress side of doors controlling egress from a space or from a building. Requirements for access-side control vestibules is outside the scope of the IBC. Thus access-side control vestibules are not regulated or prohibited by the IBC provided all requirements for egress are complied with. This proposal addresses control vestibules in the means of egress addressing egress-side requirements.

Also, it should be noted that control vestibules may be “stacked” or combined with any of the other “shall be permitted” electrical locking arrangements of the IBC (2021 IBC sections 1010.2.11 through 1010.2.14). For example, assume both doors in the (air lock) control vestibule from an electronics manufacturing clean room are equipped with sensor release of electrically locked egress doors (IBC Section 1010.2.12) to allow no-touch exiting from the clean room through the (air-lock) control vestibule. The electrical locks on the two doors of the (air lock) control vestibule would be interlocked such that only one door is able to be open at a time. In the event of fire in the clean room, Item 2 requires the interlock function of the control vestibule to be deactivated, facilitating egress through the control vestibule with both doors open at the same time.

The proposed requirements for control vestibules are for these reasons:

Control vestibules are recommended to be permitted in the listed occupancy groups: Group B for banks and laboratories. Group F for factories. Group H for operations where contamination or atmospheric control is vital. Groups I-1 and I-2 to facilitate patient care and patient security. Group

M for sales rooms for jewelry, gems, drugs, and similar highly valuable items. Group S for storage of valuables.

This proposal has no limits on occupant loads for a factory – access to factories is limited to employees, or visitors escorted by employees. Similar situation for H-5. And for storage, especially large storage areas, the calculated occupant load may be significant although the actual quantity of occupants is typically limited (i.e. employees). The other Groups – the proposed less than 50 occupant load is to be consistent with requirements for panic hardware on doors in the means of egress (occupant loads of 50 or more require panic hardware).

Control vestibules must provide for egress – which is a requirement in the charging language.

The last sentence in the charging language provides needed flexibility. For example, where casinos count money, accepted industry practices may not incorporate all of the requirements of Items 1 through 5 but may incorporate significant other security and safety provisions.

Item 1: A requirement to address the potential situation where one of the doors on the control vestibule is held open (example: a person holds the outer doorway open and other occupants need to be able to egress through the control vestibule in an emergency situation). This item requires, on the egress side of each door of the control vestibule, installation of an approved override which deactivates the interlock on that door. It is common the activation of an override would set off an alarm, and / or the activation of an override without a valid reason results in disciplinary action (i.e. employee gets fired). This item also requires signage with instruction on how to use the override.

Items 2 and 3: Requires the interlock function to be disabled in the event of fire, actuation of the fire detection system, or power loss to the interlock system renders the control vestibule equivalent to two doors in the means of egress allowing unobstructed egress.

Item 4: Requires that egressing through the control vestibule involves no more than two doors. While not common, there are situations where more than one control vestibule may be needed in the means of egress.

Item 5: Requires the units of the control vestibule locking system to be listed in accordance with UL 294, the same standard required for units for other electrical locking system units.

Together, the definition and proposed requirements provide for egress and emergency egress where control vestibules are installed.

Note: a control vestibule is different than a sallyport, which is defined in the IBC and permitted in Group I-3 occupancies. Group I-3 includes correction centers, detention centers, jails, prisons, and similar uses. A sallyport is a security vestibule which prevents unobstructed passage. A control vestibule is intended to allow unobstructed passage, but prevents more than one door of doors in series to be open at the same time.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

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

Control vestibules are currently not addressed in the code. Where control vestibules are constructed, these requirements may include some locking requirements and interconnectedness currently not incorporated into some control vestibules.

E56-21

IBC: 1010.2.15 (New), 1016.2, 3006.4; (IFC:[BE]1010.2.15 (New), 1016.2)

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

2021 International Building Code

Add new text as follows:

1010.2.15 Elevator lobby exit access doors. Electrically locked exit access doors providing egress from elevator lobbies shall be permitted where all the following conditions are met:

1. For all occupants of the floor, the path of exit access travel to not less than two exits is not required to pass through the elevator lobby.
2. The building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, and an approved automatic smoke detection system in accordance with Section 907.
3. Activation of either the automatic sprinkler system or automatic smoke detection system shall automatically unlock the electric lock providing exit access from the elevator lobby, and the electric lock shall remain unlocked until the systems are reset.
4. The electric locks shall unlock on loss of power to the electric lock or electrical locking system.
5. The electric locks shall have the capability of being unlocked by a switch located at the fire command center, security station, or other approved location.
6. A two-way communication system connected to an approved constantly attended station installed in accordance with Sections 1009.8.1 and 1009.8.2, shall be located in the elevator lobby adjacent to the electrically locked exit access door. This constantly attended station shall have the capability of unlocking the electric locks of the elevator lobby exit access doors.
7. Emergency lighting shall be provided in the elevator lobby on both sides of the electrically locked door.
8. The door locking system units shall be listed in accordance with UL 294.

Revise as follows:

1016.2 Egress through intervening spaces. Egress through intervening spaces shall comply with this section.

- Exit access* through an enclosed elevator lobby is permitted. Where access to two or more exits or exit access doorways is required in Section 1006.2.1, access to not less than one of the required *exits* shall be provided without travel through the enclosed elevator lobbies required by Section 3006. Where the path of *exit access* travel passes through an enclosed elevator lobby, the level of protection required for the enclosed elevator lobby is not required to be extended to the *exit* unless direct access to an *exit* is required by other sections of this code.
- Egress from a room or space shall not pass through adjoining or intervening rooms or areas, except where such adjoining rooms or areas and the area served are accessory to one or the other, are not a Group H occupancy and provide a discernible path of egress travel to an exit.

Exception: *Means of egress* are not prohibited through adjoining or intervening rooms or spaces in a Group H, S or F occupancy where the adjoining or intervening rooms or spaces are the same or a lesser hazard occupancy group.

- An *exit access* shall not pass through a room that can be locked to prevent egress.

Exception: An electrically locked exit access door providing egress from an elevator lobby shall be permitted in accordance with Section 1010.2.15.

- Means of egress* from *dwelling units* or sleeping areas shall not lead through other sleeping areas, toilet rooms or bathrooms.

5. Egress shall not pass through kitchens, storage rooms, closets or spaces used for similar purposes.

Exceptions:

1. *Means of egress* are not prohibited through a kitchen area serving adjoining rooms constituting part of the same *dwelling unit* or *sleeping unit*.
2. *Means of egress* are not prohibited through stockrooms in Group M occupancies where all of the following are met:
 - 2.1. The stock is of the same hazard classification as that found in the main retail area.
 - 2.2. Not more than 50 percent of the *exit access* is through the stockroom.
 - 2.3. The stockroom is not subject to locking from the egress side.
 - 2.4. There is a demarcated, minimum 44-inch-wide (1118 mm) *aisle* defined by full- or partial-height fixed walls or similar construction that will maintain the required width and lead directly from the retail area to the exit without obstructions.

3006.4 Means of egress. Elevator lobbies shall be provided with not less than 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. Electrically locked exit access doors providing egress from elevator lobbies shall be permitted in accordance with Section 1010.2.15.

Reason Statement: A number of jurisdictions across the country are including modifications in their building code to permit locking of exit access doors in elevator lobbies. These jurisdictions include California, Massachusetts, Houston, and Seattle. We're bringing this proposal forward in an effort to see if a consensus can be developed permitting electrical locking of exit access doors in elevator lobbies. The provisions proposed were developed through reviewing currently adopted provisions of other codes.

This proposal presents an alternative to the long-standing requirement that each elevator lobby has access to at least one exit complying with Chapter 10.

Proposed new Section 1010.2.15 includes specific requirements for where electrically locked exit access doors providing egress from elevator lobbies could be permitted.

The new exception in Section 1016.2, Item 3, is intended to address a potential internal conflict in the IBC.

The revision in Section 3006.4 provides the proposed alternative to requiring one means of egress from elevator lobbies. It should be noted that providing egress from an elevator lobby through tenant space(s) would typically provide access to two exits - because most tenant spaces would be required to have access to two exits.

The options presented by this proposal may be applicable to new buildings, and to build-out of floors in existing buildings, and may be most desirable where exit stairways are remote from the elevator lobby.

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

This may increase the cost of construction. There would be an increase in cost of construction to comply with these requirements for exit access doors in elevator lobbies. On the other hand, adding this provision to the IBC may result in a decrease in the cost of construction by allowing alternative layouts of the floor.

E58-21

IBC: 1011.2 (IFC:[BE] 1011.2)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Revise as follows:

1011.2 Width and capacity. The required capacity of *stairways* shall be determined as specified in Section 1005.1, but the minimum width shall be not less than 44 inches (1118 mm). ~~See Section 1009.3 for accessible means of egress stairways.~~ The minimum width for stairways that serve as part of the accessible means of egress shall comply with Section 1009.3.

Exceptions:

1. *Stairways* serving an *occupant load* of less than 50 shall have a width of not less than 36 inches (914 mm).
2. *Spiral stairways* as provided for in Section 1011.10.
3. Where an incline platform lift or *stairway* chairlift is installed on *stairways* serving occupancies in Group R-3, or within *dwelling units* in occupancies in Group R-2, a clear passage width not less than 20 inches (508 mm) shall be provided. Where the seat and platform can be folded when not in use, the distance shall be measured from the folded position.

Reason Statement: The revised language would make the terminology consistent between this reference and the referenced Section 1009.3. Stairways are never considered to be part of an accessible route. They can serve as part of an accessible means of egress with assistance by emergency responders. As it is currently written the language could be interpreted to be read as if the stairway is expected to be accessible. Adding “minimum width” would clarify why you need to go to Section 1009.3 – which could require 48” between handrails.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

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

E107-21 Part I

PART I - IBC: 1030.1.1, 1030.1.1.1 (New), 1030.1.1.2 (IFC[BE] 1030.1.1, 1030.1.1.1 (New), 1030.1.1.2)

PART II - IBC: 3103.1, 3103.5 (New), 3103.5.1 (New)

PART II - IFC: 3103.1, 3103.11, 3103.11.1 (New)

Proponents: Marcelo Hirschler, GBH International, representing self (mmh@gbhint.com)

THIS IS A 3 PART CODE CHANGE. PART I WILL BE HEARD BY THE MEANS OF EGRESS CODE COMMITTEE. PART II WILL BE HEARD BY THE GENERAL CODE COMMITTEE. PART III WILL BE HEARD BY THE FIRE CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Building Code

Revise as follows:

1030.1.1 Bleachers. *Bleachers, grandstands and folding and telescopic seating*, that are not building elements, shall comply with ICC 300, and shall be constructed of materials complying with Section 1030.1.1.1.

Add new text as follows:

1030.1.1.1 Materials of construction of bleachers, grandstands and folding and telescopic seating. *Bleachers, grandstands and folding and telescopic seating shall be constructed of materials that comply with either one of the following requirements:*

1. Materials shall be noncombustible materials in accordance with Section 703.3.1.
2. Materials shall exhibit a Class C flame spread index and smoke developed index when tested in accordance with ASTM E84 or UL 723, with the test specimen remaining in place during the test, or shall comply with the requirements of Section 803.1.1.

Revise as follows:

~~1030.1.1.1~~ **1030.1.1.2 Spaces under grandstands and bleachers.** Spaces under *grandstands* or *bleachers* shall be separated by *fire barriers* complying with Section 707 and *horizontal assemblies* complying with Section 711 with not less than 1-hour *fire-resistance-rated* construction.

Exceptions:

1. Ticket booths less than 100 square feet (9.29 m²) in area.
2. Toilet rooms.
3. Other accessory use areas 1,000 square feet (92.9 m²) or less in area and equipped with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

E107-21 Part II

PART II - IBC: 3103.1, 3103.5 (New), 3103.5.1 (New)

Proponents: Marcelo Hirschler, GBH International, representing self (mmh@gbhint.com)

2021 International Building Code

Revise as follows:

3103.1 General. The provisions of Sections 3103.1 through ~~3103.5~~ ~~3103.4~~ shall apply to structures erected for a period of less than 180 days. *Special event structures*, tents, umbrella structures and other membrane structures erected for a period of less than 180 days shall also comply with 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 Bleachers, grandstands and folding and telescopic seating. Bleachers, grandstands and folding and telescopic seating, that are not building elements, shall comply with ICC 300, and shall be constructed of materials complying with Section 3103.5.1.

3103.5.1 Materials of construction of bleachers, grandstands and folding and telescopic seating. Bleachers, grandstands and folding and telescopic seating shall be constructed of materials that comply with either one of the following requirements:

1. Materials shall be noncombustible materials in accordance with Section 703.3.1.
2. Materials shall exhibit a Class C flame spread index and smoke developed index when tested in accordance with ASTM E84 or UL 723, with the test specimen remaining in place during the test, or shall comply with the requirements of Section 803.1.1.

E107-21 Part III

PART III - IFC: 3103.1, 3103.11, 3103.11.1(New)

Proponents: Marcelo Hirschler, GBH International, representing self (mmh@gbhint.com)

2021 International Fire Code

Revise as follows:

3103.1 General. *Tents and membrane structures* used for temporary periods shall comply with this section and Section 3106. Seating in tents and membrane structures shall comply with Section 3103.11. Other temporary structures erected for a period of 180 days or less shall comply with the *International Building Code*.

3103.11 Seating arrangements. Seating in *tents or membrane structures* shall be in accordance with Chapter 10 and comply with the requirements of Section 3103.11.1.

Add new text as follows:

3103.11.1 Bleachers, grandstands and folding and telescopic seating. Bleachers, grandstands and folding and telescopic seating, that are not building elements, shall comply with ICC 300. The materials of construction shall comply with either one of the following:

1. Materials shall be noncombustible in accordance with Section 703.3.1 of the International Building Code.
2. Materials shall exhibit a Class C flame spread index and smoke developed index when tested in accordance with ASTM E84 or UL 723, with the test specimen remaining in place during the test, or shall comply with the requirements of Section 803.1.1.

Reason Statement: This proposal is in three parts. All parts require that bleachers meet all the requirements from ICC 300, a standard already referenced in the IBC, in Chapter 10 and in Chapter 16.

ICC 300 is the Standard for Bleachers, Folding and Telescopic Seating, and Grandstands. However, the section on materials in ICC 300 is not very useful, as it states: *302.1 Combustibility and flame spread. Bleachers, folding and telescopic seating, and grandstands shall be permitted to be constructed of combustible or noncombustible materials. Such installations within a building shall not be considered interior finish relative to the application of the building code.*

The requirement that bleachers be constructed of "combustible or noncombustible materials" does not exclude anything, since there is no other option for a material. There is a need to ensure the bleachers are not made of a material that is highly combustible.

This proposal contains a requirement that is pretty straightforward to meet, since traditional bleacher materials (including wood) would meet the requirements. This proposal says that they can be made of noncombustible materials (and sends to 703.3.1 of the IBC) or of materials that meet a Class C in accordance with ASTM E84.

This requirement ensures that they cannot simply be made of a highly combustible plastic or plastic composite material (note that wood materials meet a Class C without any treatment), which would introduce a high fuel load into these temporary structures.

The added requirement that "the test specimen remain in place during the test" is the same as is required for plastic composites in both the IBC (section 2612) and the IRC (section R507).

Part 1 addresses the requirements in chapter 10 of the IBC, part 2 addresses the same requirements in Chapter 31 of the IBC and part 3 addresses the same requirements in the IFC.

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

This proposal adds a material fire performance requirement for bleachers and, therefore, it is necessary to state that it "will" increase the cost of construction. However, most bleachers in use are likely to meet the "new" requirements.

E111-21

IBC: 1031.2 (IFC:[BE]1031.2)

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

2021 International Building Code

Revise as follows:

1031.2 Where required. In addition to the *means of egress* required by this chapter, *emergency escape and rescue openings* shall be provided in the following occupancies:

1. Group R-2 occupancies located in stories with only one *exit* or *access* to only one *exit* as permitted by Tables 1006.3.4(1) and 1006.3.4(2).
2. Group R-3 and R-4 occupancies.

Basements and sleeping rooms below the fourth *story above grade plane* shall have not fewer than one *emergency escape and rescue opening* in accordance with this section. Where *basements* contain one or more sleeping rooms, an *emergency escape and rescue opening* shall be required in each sleeping room, but shall not be required in adjoining areas of the *basement*. Such openings shall open directly into a *public way*, or to a *yard*, or *court* that opens to a *public way*, or to an egress balcony that leads to a public way.

Exceptions:

1. *Basements* with a ceiling height of less than 80 inches (2032 mm) shall not be required to have *emergency escape and rescue openings*.
2. *Emergency escape and rescue openings* are not required from *basements* or sleeping rooms that have an *exit* door or *exit access* door that opens directly into a *public way* or to a *yard*, court or exterior egress balcony that ~~opens that leads~~ to a *public way*.
3. *Basements* without *habitable spaces* and having not more than 200 square feet (18.6 m²) in floor area shall not be required to have *emergency escape and rescue openings*.
4. Storm shelters are not required to comply with this section where the shelter is constructed in accordance with ICC 500.
5. Within individual *dwelling* and *sleeping units* in Groups R-2 and R-3, where the building is equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3, *sleeping rooms* in *basements* shall not be required to have *emergency escape and rescue openings* provided that the basement has one of the following:
 - 5.1. One *means of egress* and one *emergency escape and rescue opening*.
 - 5.2. Two *means of egress*.

Reason Statement: The proposed code change has two parts, the first of which recognizes the benefits of an emergency escape and rescue opening (EERO) that provides access to the exterior of a dwelling unit through an egress balcony. The second part of the proposal is to address what the exception intends since language is not clear and can be interpreted in different ways.

There is no doubt that accessing the public way through an egress balcony has significant benefits that simplify rescue operations if necessary since ladder access is not necessary. Additionally, whether through an EERO or an exit door or exit access door, emergency escape into an egress balcony an element of the exit access, provides a reasonable level of safety when occupants leave the sleeping room in the unit of fire origin since they are leaving the hazard and entering progressively better protected elements of the means of egress.

Egress balconies will eventually terminate at an interior exit stairway or exterior exit stairway and in the vast majority of configurations the vertical component will be protected from the building.

The 2018 IBC Handbook page 500 has a superior way of describing the intent of exception 2 than the code itself, and the proposal uses the way that the author of the commentary chooses to explain the requirement. When exception 2 states "to a *public way*" it can mean adjacent to the public way, overlooking a public way. It can also be read that the exception requires the egress balcony to terminate into a public way which is not possible since the egress balcony is on an upper story and needs to access a stairway to get to the public way.

The IBC allows a door to provide for escape and rescue from a sleeping room but not an EERO other than a door so the charging language is updated to add this clarification since a window or door leading to an egress balcony for the most part are equivalent when considering that the EERO is a secondary path in the event the primary path, the unit entry doorway is impeded. It is not likely that exterior rescue will be necessary throughout the EERO or door since the fire department will access the dwelling unit through its entry door.

While most of the US exempts sprinkler protected buildings from EERO requirements California only does so in types of construction other than type V and IV.

We request that the Means of Egress Committee vote to approve this sensible code change.

1030.1 General. Because so many fire deaths occur as the result of occupants of residential buildings being asleep at the time of a fire, the IBC selectively requires that basements and all sleeping rooms below the fourth story have windows or doors that may be used for emergency escape or rescue. Applicable only to Groups R-3 and R-4 occupancies, as well as Group R-2 occupancies with a single means of egress as permitted by Tables 1006.3.3(1) and 1006.3.3(2), the requirement for emergency escape and egress openings help ensure these single means of egress spaces provide a potential alternate means to escape. The concern is that when residents are sleeping and unaware of their surroundings, a fire will usually have spread before the

occupants are aware of the problem, and the normal exit channels will most likely be blocked. The reason for the requirement in basements is that access to the exterior is limited and they are so often used as sleeping rooms. An exception eliminates the requirement for emergency escape and rescue openings for basements and sleeping rooms having direct access by means of an exit door or exit access door to a public way or a yard, court, or exterior exit balcony that leads to a public way. Emergency escape and rescue openings are also not required in basements with a limited ceiling height or a small floor area, provided no habitable space is provided. Basement sleeping rooms in sprinklered Group R-2 and R-3 dwelling and sleeping units are not required to be provided with an escape and rescue opening provided one of two conditions occurs in the basement, giving occupants a choice of two paths of travel or escape.

The scope of this section is of particular importance as it applies to Group R-2 occupancies. Where at least two exits, or access to at least two exits, are provided on each story of a Group R-2 building, then the provisions of Tables 1006.3.3(1) and 1006.3.3(2) are not applicable. Therefore, the provisions of Section 1030 addressing emergency escape and rescue openings also do not apply. However, where the allowances of Table 1006.3.3(1) or 1006.3.3(2) permitting a single means of egress are used, then the Group R-2 dwelling units must be provided with complying emergency escape and rescue openings. In those situations where, in multistory buildings, one or more stories may have access to two or more means of egress and there are other stories with access to only one exit, the requirements of this section would only be applied to those stories with access to just one exit.

The code intends that the openings required for emergency escape or rescue be located on the exterior of the building so that rescue can be affected from the exterior or, alternatively, so that the occupants may escape from that opening to the exterior of the building without having to travel through the building itself. Therefore, where openings are required, they shall open directly onto a public street, public alley, yard, or court. This provision ensures that continued egress can be accomplished after passing through the emergency escape and rescue opening.

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

This code change will allow the use of windows as EERO to access egress balconies and adds further clarification as to how to apply one of the exceptions

E112-21

IBC: 1031.2 (IFC:[BE]1031.2)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Revise as follows:

1031.2 Where required. In addition to the *means of egress* required by this chapter, *emergency escape and rescue openings* shall be provided in the following occupancies:

1. Group R-2 occupancies located in stories with only one *exit* or *access* to only one *exit* as permitted by Tables 1006.3.4(1) and 1006.3.4(2).
2. Group R-3 and R-4 occupancies.

Basements and sleeping rooms below the fourth *story above grade plane* shall have not fewer than one *emergency escape and rescue opening* in accordance with this section. Where *basements* contain one or more sleeping rooms, an *emergency escape and rescue opening* shall be required in each sleeping room, but shall not be required in adjoining areas of the *basement*. Such openings shall open directly into a *public way* or to a *yard* or *court* that opens into or has access to a *public way*.

Exceptions:

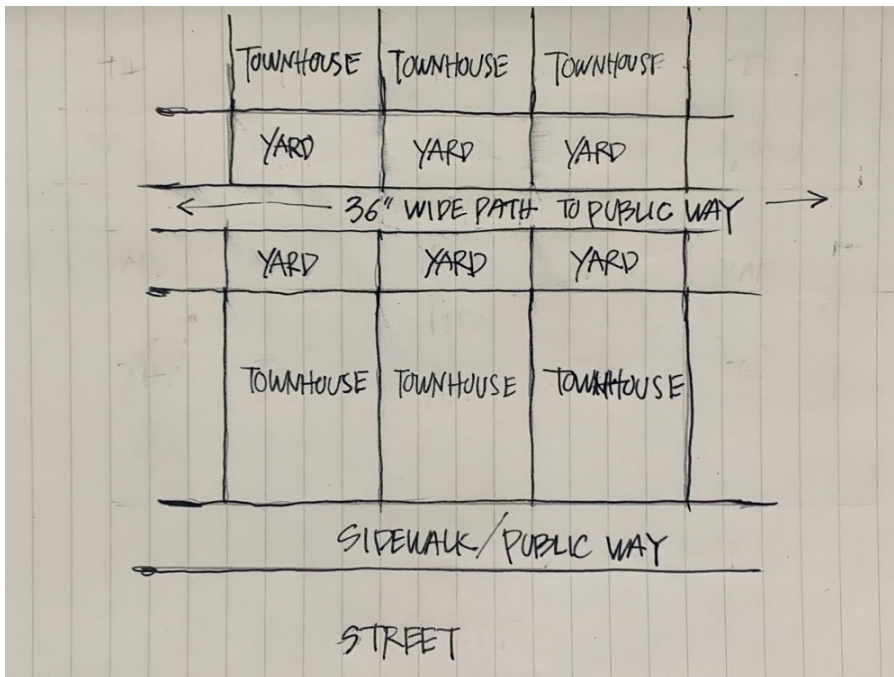
1. *Basements* with a ceiling height of less than 80 inches (2032 mm) shall not be required to have *emergency escape and rescue openings*.
2. *Emergency escape and rescue openings* are not required from *basements* or sleeping rooms that have an *exit* door or *exit access* door that opens directly into a *public way* or to a *yard*, court or exterior egress balcony that opens to a *public way*.
3. *Basements* without *habitable spaces* and having not more than 200 square feet (18.6 m²) in floor area shall not be required to have *emergency escape and rescue openings*.
4. Storm shelters are not required to comply with this section where the shelter is constructed in accordance with ICC 500.
5. Within individual *dwelling* and *sleeping units* in Groups R-2 and R-3, where the building is equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3, *sleeping rooms* in *basements* shall not be required to have *emergency escape and rescue openings* provided that the basement has one of the following:
 - 5.1. One *means of egress* and one *emergency escape and rescue opening*.
 - 5.2. Two *means of egress*.

Reason Statement: The purpose of this code change is to allow an EERO to discharge into a fenced yard that does not directly open onto a public way if a path can be provided from the fenced yard to the public way. In many cities, new townhouses are being constructed on infill lots with tight space limitations.

Locating an EERO while also wanting to provide fenced yards is becoming challenging. In some cases, a builder may want to construct two rows of townhouses that are tight up to the street but that have fenced backyards for each unit. Under the current code, the builder would either have to construct a window well in the sidewalk to access a basement EERO or in the backyard and forgo the private fenced yards as there will likely not be enough space to provide a 10 foot wide "public way".

The issue with placing an EERO in the front to allow a fenced yard in the back include coordinating the location with entry doors and front steps, coordinating the location with utilities, and providing a cover over the window well that prevents passers-by from dropping trash into the window well or getting high heels stuck in the openings of a grate. The problem with forgoing fenced yards is obviously the loss of privacy.

While a 10-foot wide path between back-to-back fenced yards is almost certainly not feasible, a narrower path will be in many cases. The new exception would allow such a path, that occupants could use to get out of their yard after escaping through an EERO, or that firefighters could use to access the fenced yard for firefighting and rescue operations without having to demolish or scale over a series of fences. The assumption is that the yard opens via a gate with access to the public way. Note that an emergency escape and rescue opening is a means of escape, not an 'exit,' so the provisions for 'egress courts' are not applicable. Yards and courts are both defined as spaces open to the sky.



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

The code change does not change the requirement to provide an EERO for sleeping rooms and for basements (including each sleeping room in a basement). Thus, there should be no increase in cost as a result of this proposal. There may be a modest savings from the added ability to locate a basement EERO in the rear of the home, where covers may not be required and coordination with utilities is easier.

E113-21

IBC: 1031.2.1, 1031.3, 1031.3.3, 1031.4, 1031.6 (IFC:[BE]1031.2.1, 1031.3, 1031.3.3, 1031.4, 1031.6)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Revise as follows:

1031.2.1 Operational constraints and opening control devices. *Emergency escape and rescue openings* shall be operational from inside the room without the use of keys or tools. Window-opening control devices and fall prevention devices complying with F2090—17 shall be permitted for use on windows serving as a required *emergency escape and rescue opening*.

1031.3 Emergency escape and rescue openings. *Emergency escape and rescue openings* shall ~~comply~~ have minimum dimensions in accordance with Sections 1031.3.1 through 1031.3.3.

1031.3.3 Maximum height from floor. Where a window is provided as the emergency ~~*Emergency escape and rescue openings*~~ , such window shall have the bottom of the clear opening not greater than 44 inches (1118 mm) measured from the floor.

1031.4 Emergency escape and rescue doors. Where a door is provided as the required *emergency escape and rescue opening*, it shall be a ~~swinging side hinged~~ door or a sliding door.

1031.6 Bars, grilles, covers and screens. Where bars, grilles, covers, screens or similar devices are placed over *emergency escape and rescue openings* or area wells that serve such openings, the minimum net clear opening size shall comply with Sections 1031.3 through 1031.3.2 and ~~4031.5~~ 1031.5.1. Such devices shall be releasable or removable from the inside without the use of a key, tool or force greater than that which is required for normal operation of the *emergency escape and rescue opening*.

Reason Statement: The intent of this code change is to complete the coordination for EERO in IBC and IRC where appropriate. There were multiple proposals during the last cycle and this was split between Group A and B, so some items remain to be coordinated. There will be proposals in Group B for IRC and IEBC.

1031.2.1 – It was pointed out during the IRC changes that ASTM F2090 was applicable to control devices and fall prevention devices. This revision would also coordinate with IRC Section R310.1.1.

1031.3 – This is a more specific description of the referenced sections. This will coordinate with R310.2.

1031.3.3 - EEROs can be doors or windows. The proposed revision in text would clarify that the bottom of the opening applies to windows. This change is also proposed to IRC R310.2.3.

1031.4 – During the IRC changes it was suggested that 'side-hinged' door was better code language and more consistent with other code text. This change would coordinate with IRC R310.31031.4 - The change in the references provides a more specific reference for the covers by just referencing the section on area well size. This will coordinate with IRC 310.4.3.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. There are not changes to construction requirements. These are clarifications only.

E114-21

IBC: 1103.2.11, 1108.6.3, 1108.6.3.1 (New), 1108.6.3.2 (New)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Revise as follows:

1103.2.11 Residential Group R-1 or R-3. Buildings of Group R-1 containing not more than five *sleeping units* for rent or hire that are also occupied as the residence of the proprietor are not required to comply with this chapter. Buildings of Group R-3 congregate living facilities (transient) or boarding houses (transient) containing not more than five sleeping units for rent or hire that are also occupied as the residence of the proprietor are not required to comply with this chapter.

1108.6.3 Group R-3. Accessible units and Type B units shall be provided in Group R-3 occupancies in accordance with Sections 1108.6.3.1 and 1108.6.3.2.

~~In Group R-3 occupancies where there are four or more dwelling units or sleeping units intended to be occupied as a residence in a single structure, every dwelling unit and sleeping unit intended to be occupied as a residence shall be a Type B unit.~~ Bedrooms within *congregate living facilities, dormitories, sororities, fraternities, and boarding houses* shall be counted as *sleeping units* for the purpose of determining the number of units.

~~**Exception:** The number of *Type B units* is permitted to be reduced in accordance with Section 1108.7.~~

Add new text as follows:

1108.6.3.1 Accessible units. In Group R-3 congregate living facilities (transient) or boarding houses (transient) Accessible sleeping units shall be provided in accordance with Table 1107.6.1.1.

Exceptions:

1. The residence of a proprietor is not required to be an Accessible unit or to be counted towards the total number of units.
2. Facilities as described in Section 1103.2.11 are not required to provide Accessible units.

1108.6.3.2 Type B units. In structures with four or more sleeping units intended to be occupied as a residence, every sleeping unit intended to be occupied as a residence shall be a Type B unit.

~~**Exception:** The number of Type B units is permitted to be reduced in accordance with Section 1108.7.~~

Reason Statement: Group R-3 includes transient facilities with 10 or fewer occupants. The exception for accessibility is facilities with a non-transient proprietor and 5 or fewer guestrooms. Since this is not based on occupant load, the exempted facility could be Group R-1 or R-3. If very small hotels without the residents of the proprietor would be required to include Accessible units. This would align the IBC with the 2010 ADA.

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Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is a clarification for the application of the accessibility requirements for small hotels, not a change in requirement.

E116-21

IBC: 1105.1.1

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Revise as follows:

1105.1.1 Automatic Power-operated doors at public entrances. In facilities with the occupancies and building *occupant loads greater than* indicated in Table 1105.1.1, ~~each public entrances that are~~ required to be *accessible* shall have a minimum of one door be ~~either a full-power-operated door or a low-energy power-operated door.~~ Where the accessible public entrance includes a vestibule, ~~at least a minimum of one door~~ into and one door out of the vestibule shall meet the requirements of this section.

Reason Statement: This proposal is intended to clarify which entrances and the number of doors at each entrance are affected by this requirement. The proposed revisions are intended to be editorial improvements of Section 1105.1.1, and are intended to be consistent with the intent of the E115-18. The table column heading says 'greater than', but that phrase is not in the charging text.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

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

E117-21

IBC: 1105.1.1

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Revise as follows:

1105.1.1 Automatic doors. In facilities with the occupancies and building *occupant loads* indicated in Table 1105.1.1, *public entrances* that are required to be *accessible* shall have one door be either a full *power-operated door* or a *low-energy power-operated door*. Where the *public entrance* includes a vestibule, at least one door into and one door out of the vestibule shall meet the requirements of this section.

Exception: Accessible public entrances to individual tenant spaces within a building are not required to be provided with a power-operated door or a low-energy power-operated door provided the occupant load of that tenant space does not exceed the occupant load in Table 1105.1.1.

**TABLE 1105.1.1
PUBLIC ENTRANCE WITH POWER-OPERATED DOOR^a**

OCCUPANCY	BUILDING OCCUPANT LOAD GREATER THAN
A-1, A-2, A-3, A-4	300
B, M, R-1	500

a. In mixed-use facilities where the total sum of the building occupant load is greater than those listed, the most restrictive building occupant load shall apply.

Staff note: E117-21 and E118-21 addresses requirements in a different or contradicting manner. The committee is urged to make their intentions clear with their actions on these proposals.

Reason Statement: For strip malls, mixed use buildings with multiple small restaurants and retail stores, and other buildings with multiple tenant spaces with public entrances on the exterior, the existing code can be interpreted as requiring each of those individual tenants to provide a full power-operated door or a low-energy power-operated door. This exception ensures individual tenants with less than the occupant load specified in table 1105.1.1 are not required to provide such doors, which have a significant cost.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

Cost Impact: The code change proposal will decrease the cost of construction
Small stores in a strip mall will not be require to provide automatic doors on each tenant space.

E118-21

IBC: 1105.1.1

Proponents: David Renn, PE, SE, City and County of Denver, representing Code Change Committee of ICC Colorado Chapter (david.renn@denvergov.org)

2021 International Building Code

Revise as follows:

1105.1.1 Automatic doors. In facilities with the occupancies and building *occupant loads* indicated in Table 1105.1.1, *public entrances* that are required to be *accessible* shall have one door be either a full *power-operated* door or a *low-energy power-operated door*. Where the *public entrance* includes a vestibule, at least one door into and one door out of the vestibule shall meet the requirements of this section.

Exception: For the purpose of determining *power-operated* door requirements, a tenant space with its own exterior *public entrance* shall be considered a separate facility and building.

**TABLE 1105.1.1
PUBLIC ENTRANCE WITH POWER-OPERATED DOOR^a**

OCCUPANCY	BUILDING OCCUPANT LOAD GREATER THAN
A-1, A-2, A-3, A-4	300
B, M, R-1	500

a. In mixed-use facilities where the total sum of the building occupant load is greater than those listed, the most restrictive building occupant load shall apply.

Staff note: E117-21 and E118-21 addresses requirements in a different or contradicting manner. The committee is urged to make their intentions clear with their actions on these proposals.

Reason Statement: This proposal is intended to clarify how the power-operated door requirement is applied to a tenant space that has its own exterior public entrance. When a tenant space has its own exterior public entrance it functions as a facility that is separate from the building as a whole and should be treated as such for power-operated door requirements. This proposal requires these tenant spaces to be considered a separate facility and building for power-operated door requirements (note that the terms facility and building are both used since this section and associated table use both terms). Following are three scenarios with requirements as this section is currently written and as proposed:

Scenario 1: Tenant space does not exceed occupant limits in Table 1105.1 and remainder of building does not exceed limits, but total building does exceed limits. As currently written, public entrances to the tenant space and the remainder of the building are required to have power-operated doors based on the total building occupant load. As proposed, no power-operated doors are required.

Scenario 2: Tenant space exceeds occupant limits in Table 1105.1 and remainder of building does not exceed limits. As currently written, public entrances to the tenant space and the remainder of the building are required to have power-operated doors based on the total building occupant load. As proposed, tenant space is required to have power-operated doors but remainder of building is not.

Scenario 3: Tenant space does not exceed occupant limits in Table 1105.1 and remainder of building does exceed limits. As currently written, public entrances to the tenant space and the remainder of the building are required to have power-operated doors based on the total building occupant load. As proposed, tenant space is not required to have power-operated doors, but remainder of building is.

Cost Impact: The code change proposal will decrease the cost of construction
This proposal will result in power-operated doors being required at fewer locations, so the cost of construction will decrease.

E119-21

IBC: 1105.1.1, TABLE 1105.1.1

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Revise as follows:

1105.1.1 Automatic doors. In facilities with the occupancies and building *occupant loads* indicated in Table 1105.1.1, *public entrances* that are required to be *accessible* shall have one door be either a full *power-operated door* or a *low-energy power-operated door*. Where the *public entrance* includes a vestibule, at least one door into and one door out of the vestibule shall meet the requirements of this section.

Exception: In mixed-use facilities, where the total building occupant load for the occupancies listed in the table is calculated as the sum of the ratios of the actual occupant load of each occupancy divided by the building occupant load threshold of each occupancy in Table 1105.1.1, and the sum of the ratios does not exceed 1, the requirements of Section 1105.1.1 do not apply. Where the sum of the ratios is equal to 1 or greater, the requirements of Section 1105.1.1 are applicable.

**TABLE 1105.1.1
PUBLIC ENTRANCE WITH POWER-OPERATED DOOR^a**

OCCUPANCY	BUILDING OCCUPANT LOAD GREATER THAN
A-1, A-2, A-3, A-4	300
B, M, R-1	500

a. ~~In mixed-use facilities where the total sum of the building occupant load is greater than those listed, the most restrictive building occupant load shall apply.~~

Staff Note: E119-21 and E120-21 addresses requirements in a different or contradicting manner. The committee is urged to make their intentions clear with their actions on these proposals.

Reason Statement: The intent of this proposal is to replace the footnote (a) to Table 1105.1.1 with an exception to 1105.1.1. Footnote “a” was added to Table 1105.1.1 by E115-18, Public Comment 2. The reason from the proponent for this public comment was that the table did not address mixed occupancies.

The effect of the existing footnote with “most restrictive occupant load shall apply” is that a hotel (Group R-1) that offers breakfast (Group A-2), an exercise room or a swimming pool (Group A-3) as an amenity would be required to provide automatic doors with an occupant load of 300 instead of 500. Another example would be a retail store (Group M) that includes a small coffee shop or fast food establishment (Group A-2).

In addition, the footnote could be read to apply to all mixed use buildings that include one of the occupancies listed and other occupancies not listed in the table. For example: an apartment building (Group R-2) with a one or two-person on-site rental office (Group B), could be required to provide automatic doors.

The proposed exception text is borrowed from 508.4.2 – allowable building area – and revised to be applicable to the application. This would allow for a balanced approach. This would balance the two occupant loads rather than using the most restrictive.

Example:

Hotel with small restaurant, pool or exercise room:

$$A-3 (75 / 300 \text{ occupants}) + R-1 (350 / 500 \text{ occupants}) = .025 + 0.7 = 0.95$$

IBC 508.4.2 Allowable building area. In each *story*, the *building area* shall be such that the sum of the ratios of the actual *building area* of each separated occupancy divided by the allowable *building area* of each separated occupancy shall not exceed 1.

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

There may be a reduction in the cost of construction. For mixed-use buildings, the requirement for automatic door openers at doors required to be accessible may be “triggered” at a slightly higher building occupant load depending on how the original footnote “a” is interpreted, applied, and enforced.

E120-21

IBC: 1105.1.1, TABLE 1105.1.1

Proponents: Marsha Mazz, Director Accessibility Codes and Standards, United Spinal Association, Accessibility Services, representing United Spinal Association (mmazz@accessibility-services.com); Gene H Boecker, Code Consultants, Inc., representing Code Consultants, Inc. (geneb@codeconsultants.com); Matt Lescher, Code Consultants, Inc., representing Code Consultants, Inc. (mattl@codeconsultants.com)

2021 International Building Code

Revise as follows:

1105.1.1 Automatic doors. ~~In facilities with the occupancies and building occupant loads indicated in Table 1105.1.1, public entrances that are required to be accessible shall have one door be either a full power-operated door or a low-energy power-operated door. Where the public entrance includes a vestibule, at least one door into and one door out of the vestibule shall meet the requirements of this section. At least one door at each public entrance required to be accessible shall have a full power-operated automatic door or low-energy power-operated automatic door where such entrances serve the occupancies and occupant loads specified in Table 1105.1.1. In mixed occupancy structures where the occupancies listed in Table 1105.1.1 have an aggregate occupant load greater than 300, all shared entrances serving those occupancies shall comply with this section. Where entrances required to provide automatic doors include two doors in series, both doors in the series shall be automatic doors.~~

**TABLE 1105.1.1
PUBLIC ENTRANCE WITH ~~POWER-OPERATED~~ AUTOMATIC DOOR^a**

OCCUPANCY	BUILDING OCCUPANT LOAD GREATER THAN
A-1, A-2, A-3, A-4	300
B, M, R-1	500

a. ~~In mixed-use facilities where the total sum of the building occupant load is greater than those listed, the most restrictive building occupant load shall apply.~~

Staff Note: E119-21 and E120-21 addresses requirements in a different or contradicting manner. The committee is urged to make their intentions clear with their actions on these proposals.

Reason Statement: This proposal is intended to clarify questions raised by the existing requirement. Except for the changes relative to mixed occupancy buildings, this proposal is not intended to change the number or location of currently required automatic doors.

- The title of this section is "automatic doors". The current provision allows two types of automatic doors - "power-operated" and "low energy power-operated". In order to make the terminology consistent, we have added the term "automatic" before the word "door" in two places. We have also retitled the table so it is consistent with the title of the section.
- We have deleted the footnote to the table, and replaced it with a requirement for "mixed occupancy buildings" instead of "mixed-use facilities" since the code generally refers to "occupancies" instead of "uses". Also, because we do not want to require every tenant in a strip mall (regardless of occupancy type or size) to have to provide an automatic door, we are covering only those entrances to mixed occupancy structures that are shared between the occupancies listed in the table that may not independently trigger the requirement because of a smaller occupant load, but when combined together will have at least 300 occupants. We specified 300 occupants because the current requirement refers to the "most restrictive building occupant load".
- We have revised the language regarding "vestibules" to refer to "two doors in series" because this term is used in ICC A117.1 and we believe it will be better understood.

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

This proposal does not increase or reduce the number of automatic doors required by the 2021 IBC. It merely clears-up some technical glitches.

E130-21

IBC: TABLE 1108.6.1.1

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

1108.6.1 Group R-1. *Accessible units* and *Type B units* shall be provided in Group R-1 occupancies in accordance with Sections 1108.6.1.1 and 1108.6.1.2.

1108.6.1.1 Accessible units. *Accessible dwelling units* and *sleeping units* shall be provided in accordance with Table 1108.6.1.1. On a multiple-building site, where structures contain more than 50 *dwelling units* or *sleeping units*, the number of *Accessible units* shall be determined per structure. On a multiple-building site, where structures contain 50 or fewer *dwelling units* or *sleeping units*, all *dwelling units* and *sleeping units* on a site shall be considered to determine the total number of *Accessible units*. *Accessible units* shall be dispersed among the various classes of units.

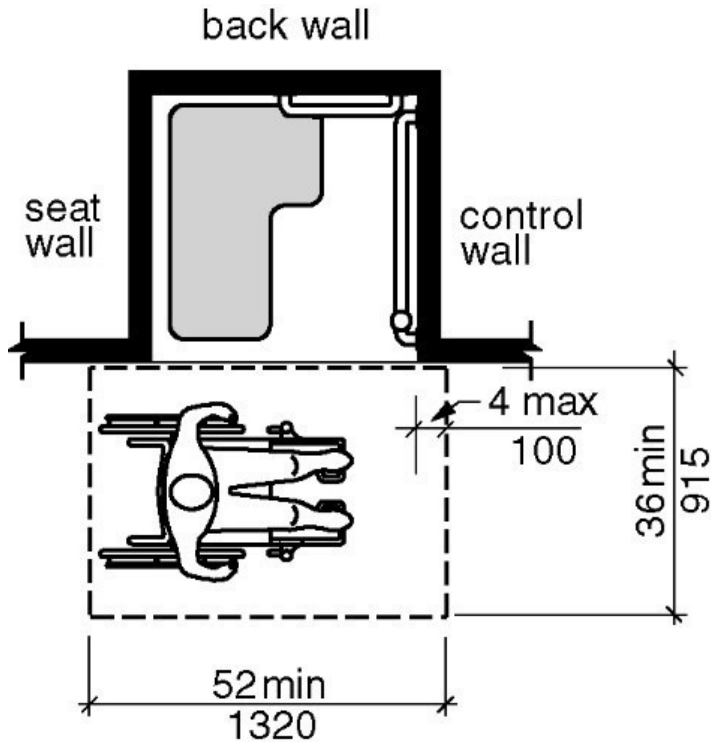
Revise as follows:

**TABLE 1108.6.1.1
ACCESSIBLE DWELLING UNITS AND SLEEPING UNITS**

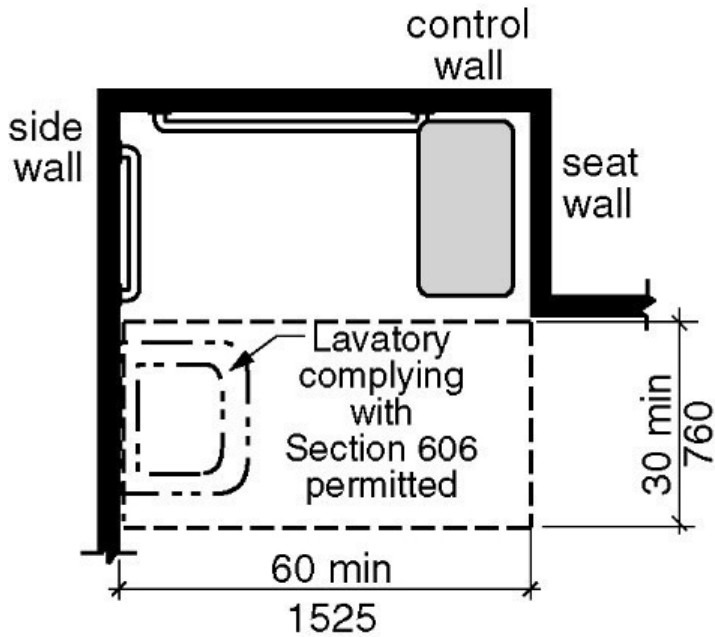
TOTAL NUMBER OF UNITS PROVIDED	MINIMUM REQUIRED NUMBER OF ACCESSIBLE UNITS WITHOUT ROLL-IN SHOWERS	MINIMUM REQUIRED NUMBER OF ACCESSIBLE UNITS WITH ROLL-IN SHOWERS	TOTAL NUMBER OF REQUIRED ACCESSIBLE UNITS
1 to 25	1	0	1
26 to 50	2	0	2
51 to 75	3	1	4
76 to 100	4	1	5
101 to 150	5	2	7
151 to 200	6	2	8
201 to 300	7	3	10
301 to 400	8	4	12
401 to 500	9	4	13
501 to 1,000	2% of total	1% of total	3% of total
Over 1,000	20, plus 1 for each 100, or fraction thereof, over 1,000	10 plus 1 for each 100, or fraction thereof, over 1,000	30 plus 2 for each 100, or fraction thereof, over 1,000

Staff Note: E130-21 and E131-21 addresses requirements in a different or contradicting manner. The committee is urged to make their intentions clear with their actions on these proposals.

Reason Statement: If a hotel has all showers, Table 1107.6.1.1 could be read to force bathtubs in Accessible rooms. What is the reasoning/justification for this? A roll-in shower with a seat is doing double duty as transfer and roll-in. The table was written originally with the intent to require at least some roll-in showers when hotels typically provided all bathtubs. Designs for bathrooms have changed. Providing showers instead of tubs has been shown to reduce accidental falls in the bathrooms; while continuing to provide accessible options.

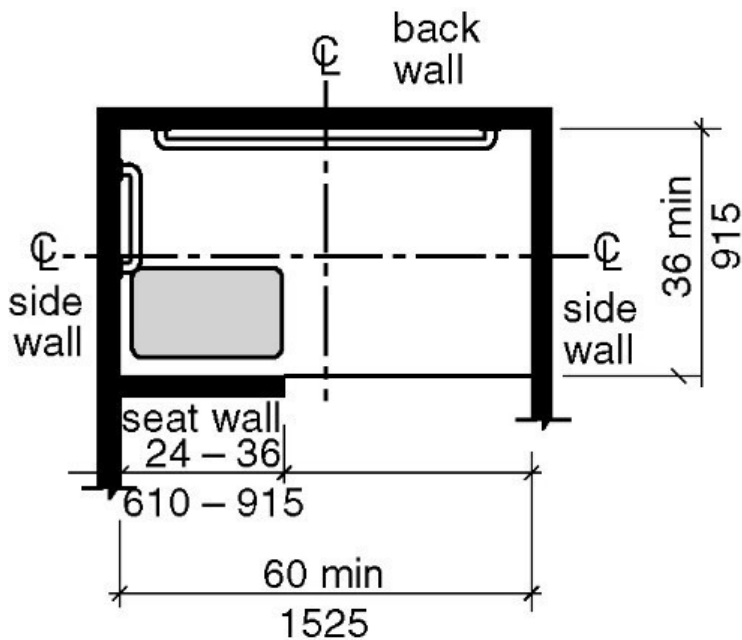


Transfer shower



Note: inside finished dimensions measured at the center points of opposing sides

Roll-in shower (also serves as transfer shower)



Note: inside finished dimensions measured at the center points of opposing sides

Alternate roll-in shower (also serves as transfer shower)

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Cost Impact: The code change proposal will not increase or decrease the cost of construction. This would increase design options for hotels.

E131-21

IBC: 1108.6.1.1

Proponents: Marsha Mazz, Director Accessibility Codes and Standards, United Spinal Association, Accessibility Services, representing United Spinal Association (mmazz@accessibility-services.com); Doug Anderson, representing American Hotel and Lodging Association (danderson@lcmarchitects.com); Gene Boecker, representing Code Consultants, Inc. (geneb@codeconsultants.com)

2021 International Building Code

Revise as follows:

1108.6.1.1 Accessible units. *Accessible dwelling units and sleeping units* shall be provided in accordance with Table 1108.6.1.1. On a multiple-building site, where structures contain more than 50 *dwelling units* or *sleeping units*, the number of *Accessible units* shall be determined per structure. On a multiple-building site, where structures contain 50 or fewer *dwelling units* or *sleeping units*, all *dwelling units* and *sleeping units* on a site shall be considered to determine the total number of *Accessible units*. *Accessible units* shall be dispersed among the various classes of units.

Exception. Where all dwelling units and sleeping units contain showers and none contain bath tubs, the total number of required Accessible units specified by Table 1108.6.1.1 shall be permitted to provide standard or alternate roll-in type showers with seats.

Staff Note: E130-21 and E131-21 addresses requirements in a different or contradicting manner. The committee is urged to make their intentions clear with their actions on these proposals.

Reason Statement: A trend in hotel design is to provide showers and not bathtubs. Although the 2010 ADA Standards require some of the dwelling or sleeping units to have either tubs or transfer showers, the requirement was written in 2004 when this practice was not evident and, in some locations, tubs were required in all units. For most people with disabilities, a roll-in shower with a seat is more accessible than an accessible bathtub or transfer shower. The justification for requiring accessible bathtubs was that some people prefer them and, since other guests have a tub option, people with disabilities should also have that option. However, where the option of a tub instead of a shower is not available to anyone, parity is not at issue and does not make sense.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. The exception provides a choice. Depending on the design, applying the exception could result in a decrease in cost because it will minimize the need to design and construct different types of accessible bathrooms.

E134-21

IBC: 1108.7, 1108.7.1

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Revise as follows:

1108.7 General exceptions. Where specifically permitted by Section 1108.5 or 1108.6, the required number of *Type A units* ~~and *Type B units*~~ is permitted to be reduced in accordance with ~~Sections 1108.7.1 through~~ Section 1108.7.5 ~~and the required number of *Type B units* is permitted to be reduced in accordance with Sections 1108.7.1 through 1108.7.5.~~

1108.7.1 Structures without elevator service. Where elevator service is not provided in a structure, only the *dwelling units* and *sleeping units* that are located on stories indicated in Sections 1108.7.1.1 and 1108.7.1.2 are required to be ~~*Type A units* and *Type B units*, respectively.~~ ~~The number of *Type A units* shall be determined in accordance with Section 1108.6.2.2.1.~~

Reason Statement: The intent of this proposal is a clarification on which exceptions are applicable to Type A units and which exceptions are applicable to Type B units. The current text could be misread to believe that all the exceptions apply to both Type A units and Type B units. Section 1108.7 –The current language does not clearly indicate that only the exception in 1108.7.5 is allowed to be used for the reduction of the number of required Type A units. The proposed language is more specific as to which exception is applicable by dividing the allowances for Type A units and Type B units.

Section 1108.7.1 - The language regarding Type A units is not needed in this exception because this exception does not allow for a reduction in the number of Type A units. The last sentence is only a pointer that is not needed.

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Cost Impact: The code change proposal will not increase or decrease the cost of construction. This is a clarification. There are no changes in requirements.

E135-21

IBC: 1108.7.2, 1108.7.2.1 (New)

Proponents: Valarie Evans, representing SNICC, SNBO (evansv@cityofnorthlasvegas.com)

2021 International Building Code

Add new text as follows:

1108.7.2 Multi-story dwelling units or sleeping units. Multistory dwelling units or sleeping units shall be provided in accordance with Sections 1108.7.2.1 through 1108.7.2.2.

1108.7.2.1 Multistory dwelling or sleeping units without elevators. In a multi-story dwelling unit or sleeping unit that is not provided with elevator service, one floor shall be on an accessible route. That floor shall be the primary entry to the unit, comply with the requirements for either a Type A unit or Type B unit and, where provided within the unit, a living area, a kitchen and a toilet room shall be provided on that floor.

Revise as follows:

~~**1108.7.2 1108.7.2.2 Multistory units in buildings with elevator service.** A multistory dwelling unit or sleeping unit that is not provided with elevator service is not required to be a Type B unit. Where~~
In a multistory dwelling or sleeping unit that is provided with external elevator service to only one floor, the floor that is provided with elevator service shall be the primary entry to the unit, shall comply with the requirements for either a Type A or Type B unit and, where provided within the unit, a living area, a kitchen and a toilet facility shall be provided on that floor.

Reason Statement: The current language in this section is generally confusing for both the designer and plan reviewer. This is largely due to the fact that there are actually two (2) disparate sets of provisions within this section that apply to two (2) totally unique project types. This proposed code change reorganizes these provisions into two separate code sections and better clarifies the requirements as applicable to each project type. Additionally, the existing code section allows for Type B provisions to be omitted entirely from multi-story units within non-elevator buildings. This often results in larger developments having 2% of all units being designed as Type A units only, with the remainder (98%) of all other units having no provisions whatsoever. As such, the required Type A units are either designed as multi-story units with an internal elevator, or as 1-story units (to avoid having to provide an internal elevator). This proposed code change addresses 100% of all units on a site and requires only the primary entry floor to comply with either Type A or Type B provisions. While this allows the Type A multi-story units to omit the internal elevator requirement, it more than compensates for this reduction by requiring 100% of all units to be designed to comply with either Type A or Type B provisions on the primary entry floor of each unit.

Where multi-story units occur within buildings having external elevator service, the current language requires the application of Type B provisions on the primary entry floor only. However, it does not directly address Type A units. As such, the designer is meant to presume that multi-story Type A units must be provided with an internal elevator to all levels. However, because this is not expressly stated, it is sometimes overlooked. This proposed code change now addresses both Type A and Type B unit provisions. The design requirements with respect Type B units are essentially unchanged. However, Type A units are now permitted to comply on only the primary entry floor. Essentially, this means that internal elevators are no longer required to be provided within Type A units. This approach is consistent with the application of these provisions for multi-story units within non-elevator buildings.

In all cases, the requirement to provide a living area, kitchen and toilet room on the primary entry floor assures that each of these features are both available and designed for accessible accommodation.

None of the proposed changes conflict with the Fair Housing Act (FHA). That's because the FHA does not require Type A units ever. Additionally, the proposed changes continue to fully meet or exceed the Type B requirements found within the FHA.

Finally, the proposed changes address two (2) other related and significant issues that are worthy of consideration. These include usability and increased site density. From a usability standpoint, the majority of multistory units are being developed to increase site density, while allowing for larger overall unit floor areas within smaller footprints. This is clearly evident in the example of townhouse units (at grade). By eliminating the requirement to provide internal elevators in Type A units, the development costs of these projects are reduced, plus the net usable floor area (on all floors) is increased, while still providing a compliant level of Type A features on the main entry floor within that unit (which is still FHA compliant). Where single-story Type A units are provided instead (i.e. within townhouse developments), they decrease site density. This could easily result in fewer affordable housing units being provided within publicly subsidized projects having fixed overall budget allotments. Collectively across a state or the entire country, this could really have a negative impact on our ability to address the on-going challenges (some say crisis) associated with affordable housing. This is one way to partially address this issue.

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

These changes are likely to slightly increase the construction costs for very small (i.e. 4 to 19 units) Townhouse development projects since a greater number of units must now be provided with Type B provisions on their main entry level. However, in larger Townhouse developments (i.e.

20+ units), these same increased costs can potentially be offset by the elimination of individual elevator requirements, plus increased usable (i.e. revenue-producing) floor areas, within each Type A unit. Since most Townhouse developments consist of more than 20 units, the cost reduction is more likely to prevail. Overall, the costs are anticipated to be negligible for any of the project types noted above. In apartment buildings with external elevator service to one floor, there is likely to be a slight decrease in project costs due to the elimination of an internal elevator for Type A units. However, that only impacts 2% of the overall number of units provided in a building or site. Thus, the cost reductions are not deemed significant in these larger buildings.

E136-21

IBC: 1109.2, 1109.2.2

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Revise as follows:

1109.2 Assembly area seating. A building, room or space used for assembly purposes with spectator seating with fixed seating, bleachers, grandstands or folding and telescopic seating shall comply with Sections 1109.2.1 through 1109.2.5. Lawn seating shall comply with Section 1109.2.6. Assistive listening systems shall comply with Section 1109.2.7. Performance areas viewed from assembly seating areas shall comply with Section 1109.2.8. Dining areas shall comply with Section 1109.2.9.

1109.2.2 Wheelchair spaces. ~~In rooms and spaces used for assembly purposes with fixed seating, accessible~~ Accessible wheelchair spaces shall be provided in accordance with Sections 1109.2.2.1 through 1109.2.2.3.

Reason Statement: The intent of this proposal is to clarify that bleachers, grandstands, and folding and telescoping seating are required to provide accessible wheelchair spaces. The revision "with spectator seating" will match A117.1 terminology.

While fixed seating is defined as including seats with or without backs, the current text is not clear if portable or permanent bleacher systems or folding and telescopic seating have to provide wheelchair spaces. The International Building Code specifies the number of wheelchair spaces for assembly space with 'assembly spaces with fixed seating'. The A117.1 specifies how many groups of wheelchair spaces (wheelchair space locations) and how they are to be dispersed. The text in A117.1 is 'assembly spaces with spectator seating.' The A117.1 does provide some exceptions for the location of the wheelchair spaces in the bleachers (ICC A117.1 802.10.2 Exception 2). The revisions will match A117.1 terminology and clarify that the wheelchair spaces are required in bleachers, grandstands and folding telescopic seating.

ICC 300 Standard for Bleachers, Folding and Telescopic Seating, and Grandstands references the building code for accessibility.

SECTION 310

ACCESSIBILITY

310.1 Accessibility. Tiered seating shall be accessible as required by the building code.

ICC A117.1 Accessible and Usable Buildings and Facilities, includes special allowances for accessible bleacher seating.

SECTION 802

ASSEMBLY AREAS

802.1 General. Wheelchair spaces and wheelchair space locations in assembly areas with spectator seating shall comply with Section 802.

802.10.2 Dispersion for variety of distances from the event. Wheelchair space locations shall be dispersed at a variety of distances from the event to provide viewing options.

Exceptions:

1. In bleachers, wheelchair space locations provided only in rows at points of entry to bleacher seating shall be permitted.
2. Assembly areas utilized for viewing motion picture projections with 300 seats or less shall not be required to comply with Section 802.10.2.3. Assembly areas with 300 seats or less other than those utilized for viewing motion picture projections shall not be required to comply with Section 802.10.2 where all wheelchair space locations are within the front 50 percent of the total rows.

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Examples of bleacher with wheelchair spaces



Cost Impact: The code change proposal will not increase or decrease the cost of construction. This is a clarification. It is not a change in the requirements for bleachers, grandstands or folding and telescopic seating.

E147-21

IBC: E104.2.1

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

E104.2 Communication features. *Accessible* communication features shall be provided in accordance with Sections E104.2.1 through E104.2.4.

Revise as follows:

E104.2.1 Transient lodging. In *transient lodging* facilities, dwelling units or sleeping units with accessible communication features shall be provided in accordance with Table E104.2.1. ~~Units required to comply with Table E104.2.1 with accessible communication features shall be dispersed among the various classes of units.~~ At least one Accessible unit required by Section 1108.6.1.1 shall also provide accessible communication features. Not more than 10 percent of Accessible units required by Section 1108.6.1.1 shall be used to satisfy the minimum number of units required to provide accessible communication features.

**TABLE E104.2.1
DWELLING OR SLEEPING UNITS WITH ACCESSIBLE COMMUNICATION FEATURES**

TOTAL NUMBER OF DWELLING OR SLEEPING UNITS PROVIDED	MINIMUM REQUIRED NUMBER OF DWELLING OR SLEEPING UNITS WITH ACCESSIBLE COMMUNICATION FEATURES
1	1
2 to 25	2
26 to 50	4
51 to 75	7
76 to 100	9
101 to 150	12
151 to 200	14
201 to 300	17
301 to 400	20
401 to 500	22
501 to 1,000	5% of total
1,001 and over	50 plus 3 for each 100 over 1,000

Reason Statement: The first paragraph is revised to make the text match the table. The text only talks about sleeping units, but the table talks about dwelling and sleeping units. A hotel can have rooms with kitchen (dwelling units) or room without kitchens (sleeping units). The 2nd paragraph in this code change is intended to help coordinate the appendix requirements related to Accessible units (i.e. hotel rooms) with communications features to the requirements in the ADA for these types of units. This does not increase the number of units required. It just addresses dispersion of those units.

Coordinates with the ADA requirement (ADA 224.5) limiting the number of units with communications features (rooms for persons with hearing impairments) that may also be constructed as Accessible (rooms for persons who use wheelchairs or scooters) spaces. This ensures better dispersion so that people that only need communication features to accommodate their needs are not kept from having access to the rooms that serve their needs and so that not all communication feature rooms are also constructed to provide mobility access.

To make it easier to see how the proposed language meshes with the ADA, here is the text from the 2010 federal standard which we are trying to coordinate with:**224.5 Dispersion.** Guest rooms required to provide mobility features complying with 806.2 and guest rooms required to provide communication features complying with 806.3 shall be dispersed among the various classes of guest rooms, and shall provide choices of types of guest rooms, number of beds, and other amenities comparable to the choices provided to other guests. Where the minimum number of guest rooms required to comply with 806 is not sufficient to allow for complete dispersion, guest rooms shall be dispersed in the following priority: guest room type, number of beds, and amenities. At least one guest room required to provide mobility features complying with 806.2 shall also provide communication features complying with 806.3. Not more than 10 percent of guest rooms required to provide mobility features complying with 806.2 shall be used to satisfy the minimum number of guest rooms required to provide communication features complying with 806.3.

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Cost Impact: The code change proposal will not increase or decrease the cost of construction. This is already a requirement under the 2010 ADA.

F6-21

IFC: SECTION 202, 105.5.3, TABLE 903.2.11.6, 907.2.12; IBC: TABLE 903.2.11.6

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org); Michael O'Brian, representing FCAC (fcac@iccsafe.org)

2021 International Fire Code

Revise as follows:

~~**SPECIAL AMUSEMENTBUILDING AREA.** A building that is temporary, permanent or mobile that contains a device or system that conveys passengers or provides a walkway along, around or over a course in any direction as a form of amusement arranged so that the egress path is not readily apparent due to visual or audio distractions or an intentionally confounded egress path, or is not readily available because of the mode of conveyance through the building or structure.~~

A special amusement area is any temporary or permanent building or portion thereof that is occupied for amusement, entertainment or educational purposes and is arranged in a manner that:

1. Makes the means of egress path not readily apparent due to visual or audio distractions.
2. Intentionally confounds identification of the means of egress path.
3. Otherwise makes the means of egress path not readily available because of the nature of the attraction or mode of conveyance through the building or structure.

~~**105.5.3 Amusement buildings**~~ **Special amusement areas.** An operational permit is required to operate a special amusement ~~building area.~~

**TABLE 903.2.11.6
ADDITIONAL REQUIRED FIRE PROTECTION SYSTEMS**

SECTION	SUBJECT
903.2.10.2	Mechanical-access enclosed parking garages
914.2.1	Covered and open mall buildings
914.3.1	High-rise buildings
914.4.1	Atriums
914.5.1	Underground structures
914.6.1	Stages
914.7.1	Special amusement buildings areas
914.8.2	Airport traffic control towers
914.8.3, 914.8.6	Aircraft hangars
914.9	Flammable finishes
914.10	Drying rooms
914.11.1	Ambulatory care facilities
1030.6.2.3	Smoke-protected assembly seating
1103.5.1	Existing Group A occupancies
1103.5.2	Pyroxylin plastic storage in existing buildings
1103.5.3	Existing Group I-2 occupancies
1103.5.5	Existing Group I-2, Condition 2 occupancies
1103.5.5	Pyroxylin plastics
Table 1207.7, Table 1207.8, Table 1206.9, Table 1206.10	Stationary and mobile energy storage systems
2108.2	Dry cleaning plants
2108.3	Dry cleaning machines
2309.3.1.5.2	Hydrogen motor fuel-dispensing area canopies
2404.2	Spray finishing in Group A, E, I or R
2404.4	Spray booths and spray rooms
2405.2	Dip-tank rooms in Group A, I or R
2405.4.1	Dip tanks
2405.9.4	Hardening and tempering tanks
2703.10	HPM facilities
2703.10.1.1	HPM work station exhaust
2703.10.2	HPM gas cabinets and exhausted enclosures
2703.10.3	HPM exit access corridor
2703.10.4	HPM exhaust ducts
2703.10.4.1	HPM noncombustible ducts
2703.10.4.2	HPM combustible ducts
2807.3	Lumber production conveyor enclosures
2808.7	Recycling facility conveyor enclosures
3006.1	Class A and B ovens
3006.2	Class C and D ovens
Table 3206.2	Storage fire protection
3206.4	Storage
3210.1.1	Record storage over 12 feet
3704.5	Storage of more than 1,000 cubic feet of loose combustible fibers
5003.8.4.1	Gas rooms
5003.8.5.3	Exhausted enclosures

5004.5	Indoor storage of hazardous materials
5005.1.8	Indoor dispensing of hazardous materials
5104.4.1	Aerosol product warehouses
5106.3.2	Aerosol display and merchandising areas
5306.2.1	Exterior medical gas storage room
5306.2.2	Interior medical gas storage room
5306.2.3	Medical gas storage cabinet
5606.5.2.1	Storage of smokeless propellant
5606.5.2.3	Storage of small arms primers
5704.3.7.5.1	Flammable and combustible liquid storage rooms
5704.3.8.4	Flammable and combustible liquid storage warehouses
5705.3.7.3	Flammable and combustible liquid Group H-2 or H-3 areas
6004.1.2	Gas cabinets for highly toxic and toxic gas
6004.1.3	Exhausted enclosures for highly toxic and toxic gas
6004.2.2.6	Gas rooms for highly toxic and toxic gas
6004.3.3	Outdoor storage for highly toxic and toxic gas
6504.1.1	Pyroxylin plastic storage cabinets
6504.1.3	Pyroxylin plastic storage vaults
6504.2	Pyroxylin plastic storage and manufacturing

For SI: 1 cubic foot = 0.023 m³.

907.2.12 Special amusement ~~buildings areas~~. An automatic smoke detection system shall be provided in buildings with special amusement ~~buildings areas~~ in accordance with Sections 907.2.12.1 through 907.2.12.3.

2021 International Building Code

Revise as follows:

**TABLE 903.2.11.6
ADDITIONAL REQUIRED PROTECTION SYSTEMS**

SECTION	SUBJECT
402.5, 402.6.2	Covered and open mall buildings
403.3	High-rise buildings
404.3	Atriums
405.3	Underground structures
407.7	Group I-2
410.6	Stages
411.3	Special amusement buildings <u>areas</u>
412.2.4	Airport traffic control towers
412.3.6, 412.3.6.1, 412.5.6	Aircraft hangars
415.11.11	Group H-5 HPM exhaust ducts
416.5	Flammable finishes
417.4	Drying rooms
424.3	Play structures
428	Buildings containing laboratory suites
507	Unlimited area buildings
508.5.7	Live/work units
509.4	Incidental uses
1030.6.2.3	Smoke-protected assembly seating
IFC	Sprinkler system requirements as set forth in Section 903.2.11.6 of the <i>International Fire Code</i>

Reason Statement: The purpose of the change is primarily for coordination and correction. The IFC definition for the Special Amusement Area in this proposal matches the IBC definition approved in G48-18. The changes in the references in tables and footnotes is editorial to use the defined term. It is important to note the 'special amusement area' is already approved in the IBC definition of puzzle rooms, Section 411, Table 1017.2 footnote and IFC Section 914.7 and 3103.3.1.

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

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The FCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes with regard to fire and life safety in new and existing buildings and facilities as well as the protection of life and property in wildland urban interface areas. In 2020 and 2021 the Fire-CAC held multiple virtual meetings that were open to any interested party. In addition, there were numerous virtual specific working group meetings that were also open to any interested parties, to develop, discuss and debate the proposed changes. Related documentation and reports are posted on the FCAC website at: FCAC.

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

Many of these rooms may be classified currently as a B occupancy as they are not specifically called out in the code. As such, there are very little requirements for fire alarm or sprinkler systems. Depending on the size and configuration of the room(s), this provision would increase the cost of construction.

F15-21 Part I

PART I IFC: SECTION 202 (New), SECTION 317, 317.1, 317.2, 317.4.3, 905.3.8 (IBC [F] 905.3.8), 504.3

PART II IBC: SECTION 202 (New), SECTION 202, [BF] 1505.10, [BF] 1507.15.1

Proponents: Michael O'Brian, representing FCAC (fcac@iccsafe.org); Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

THIS IS A TWO PART CODE CHANGE. PART 1 WILL BE HEARD BY THE FIRE CODE COMMITTEE AND PART 2 WILL BE HEARD BY THE INTERNATIONAL BUILDING CODE FIRE SAFETY COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES

2021 International Fire Code

Add new definition as follows:

LANDSCAPED ROOF. An area on a roof incorporating planters, vegetation, hardscaping, or other similar decorative appurtenances that are not part of a roof assembly.

VEGETATIVE ROOF. A roof assembly of interacting components designed to waterproof a building's top surface that includes, by design, vegetation and related landscape elements.

Revise as follows:

SECTION 317 ~~VEGETATIVE LANDSCAPED ROOFS.~~

317.1 General. ~~Vegetative Landscaped roofs shall comply with be installed and maintained in accordance with Sections 317.2 through 317.5 and Sections 1505 and 1507.16 of the International Building Code and be installed and maintained in accordance with Sections 317.2 through 317.5.~~

317.2 Vegetative Landscaped roof size. ~~Vegetative Landscaped~~ roof areas shall not exceed 15,625 square feet (1450 m²) in size for any single area with a maximum dimension of 125 feet (39 m) in length or width. A minimum 6-foot-wide (1.8 m) clearance consisting of a *listed* Class A roof assembly tested in accordance with ASTM E108 or UL 790 shall be provided between adjacent ~~vegetative landscaped~~ roof areas.

317.4.3 Maintenance plan. The *fire code official* is authorized to require a maintenance plan for vegetation placed on roofs due to the size of a ~~vegetative landscaped~~ roof, materials used or where a fire hazard exists to the building or exposures due to the lack of maintenance.

905.3.8 Landscaped or vegetative roofs. Buildings or structures that have landscaped or vegetative roofs and that are equipped with a standpipe system shall have the standpipe system extended to the roof level on which the landscaped or vegetative roof is located.

504.3 Stairway access to roof. New buildings four or more stories above grade plane, except those with a roof slope greater than four units vertical in 12 units horizontal (33.3-percent slope), shall be provided with a *stairway* to the roof. *Stairway* access to the roof shall be in accordance with Section 1011.12. Such *stairway* shall be marked at street and floor levels with a sign indicating that the *stairway* continues to the roof. Where roofs are used for landscaped roofs, vegetative roofs or for other purposes, stairways shall be provided as required for such occupancy classification.

F15-21 Part II

IBC: (New), SECTION 202, [BF] 1505.10, [BF] 1507.15.1

Proponents: Michael O'Brian, representing FCAC (fcac@iccsafe.org); Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Add new definition as follows:

LANDSCAPED ROOF. An area on a roof incorporating planters, vegetation, hardscaping, or other similar decorative appurtenances that are not part of a roof assembly.

Revise as follows:

[BS] VEGETATIVE ROOF. A roof assembly of interacting components designed to waterproof a building's top surface that includes, by design, vegetation and related landscape elements.

[BF] 1505.10 Vegetative Landscaped roofs. Vegetative Landscaped roofs shall comply with Sections 1505.1 and 1507.15 and shall be installed in accordance with ANSI/SPRI VF-1.

[BF] 1507.15.1 Structural fire resistance. The structural frame and roof construction supporting the load imposed on the roof by the *vegetative roof* or landscaped roofs shall comply with the fire resistance rating requirements of Table 601.

Reason Statement: This is an editorial proposal covering both the IFC and the IBC to consistently use the term "vegetative roof". The term "landscaped roofs" has been used by the public interchangeably with "vegetative roofs". This has created confusion in the building code and conflicts with industry standards that have coalesced around the term "vegetative roof". . Moreover, some of the sections presently identified as "landscaped roofs" should refer to "vegetative roofs" as they really addresses roofs that are part of the building envelope and, thus, are associated with the existing definition of "vegetative roofs". In these locations, the code is revised to properly use "vegetative roof". In other places, both terms are retained as the language could apply either to a vegetative roof where the membrane, growth medium and vegetation are incorporated as part of the roof assembly, or a landscaped roof where planters, hardscapes, or other features are provided above the roof assembly and not integrated into it. A definition for "landscaped roof" is proposed to capture such features and better distinguish between a true "vegetative roof" as defined in the IBC and industry standards.

Neither the IFC nor the IBC define the term "landscaped roof", but the IBC does contain a definition for the term "vegetative roofs" that reads as follows.

[BS] VEGETATIVE ROOF. *An assembly of interacting components designed to waterproof a building's top surface that includes, by design, vegetation and related landscape elements.*

This proposal also copies the existing definition from the IBC to the IFC.

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Cost Impact: The code change proposal will not increase or decrease the cost of construction
The proposal is editorial and will not impact how vegetative and landscaped roofs are designed and constructed.

F69-21

IFC: 202 (New), SECTION 322 (New), 322.1 (New), 903.2.11.6 (New), 322.2 (New); IBC: 202 (New), [F] 903.2.11.6 (New)

Proponents: Andrew Bevis, representing National Fire Sprinkler Association (bevis.andrew1988@gmail.com); Jeffrey Hugo, representing NFSA (hugo@nfsa.org); Joe Scibetta, representing BuildingReports (jscibetta@buildingreports.com)

2021 International Fire Code

Add new definition as follows:

ANIMAL HOUSING FACILITY. Area of a building or structure, including interior and adjacent exterior spaces, where animals are fed, rested, worked, exercised, treated, exhibited, or used for production. Such facilities include but are not limited to barns and stables; kennels; animal shelters; animal hospitals and veterinary facilities; zoos; laboratories; agricultural facilities housing animals; and mercantile or business occupancies with animals.

Add new text as follows:

SECTION 322 ANIMAL HOUSING FACILITIES.

322.1 Sources of Ignition. Smoking or the use of heating or other devices employing an open flame, or the use of spark-producing equipment is prohibited in all areas of an animal housing facility, including agricultural buildings housing livestock or poultry.

903.2.11.6 Animal housing facilities. An automatic sprinkler system in accordance with Section 903.3 shall be provided throughout animal housing facilities that contain Group R occupancies or where occupants are expected to delay their emergency egress to care for animals.

322.2 Waste Housekeeping. Permanent storage of waste shall be prohibited in aisles, hallways, or other types of egress components.

2021 International Building Code

Add new definition as follows:

ANIMAL HOUSING FACILITY. Area of a building or structure, including interior and adjacent exterior spaces, where animals are fed, rested, worked, exercised, treated, exhibited, or used for production. Such facilities include but are not limited to barns and stables; kennels; animal shelters; animal hospitals and veterinary facilities; zoos; laboratories; agricultural facilities housing animals; and mercantile or business occupancies with animals.

Add new text as follows:

[F] 903.2.11.6 Animal housing facilities. An automatic sprinkler system in accordance with Section 903.3 shall be provided throughout animal housing facilities that contain Group R occupancies or where occupants are expected to delay their emergency egress to care for animals.

Reason Statement: This proposal does two things: it addresses a special type of occupancy that is not covered by IBC or IFC by providing a definition of animal housing and it addresses when residential occupancies are mixed with animal housing facilities. It is important for the IBC to recognize the special operations that take place in these unique facilities, where a secondary population is wholly reliant on a primary population for the necessary, prompt attention required during a fire emergency. Additionally, this proposal addresses the concerns of the code committee from the previous cycle. Further clarification is provided within the definition of what type of facilities are considered animal housing facilities. This proposal's main goal is to make the protection of human occupant's paramount, i.e., where residential dwelling or sleeping units are part of the animal housing facility. It also addresses the concern from the committee that the protection of occupant's lives was secondary. The model codes currently do not adequately address facilities in which people may delay evacuation for the care of animals.

Many states exempt agricultural buildings and is often and traditionally lumped in with "animal housing". A lot of jurisdictions and residents unconsciously do not get permits or inquire about construction codes because of being classified as an agricultural community. The addition of a dwelling unit to a barn, stable, or veterinary office triggers permits and automatic fire sprinkler systems.

Fire data indicates that 98% of civilian injuries in livestock or poultry storage properties were due to structure fires. While 64% of those fires were caused by heating equipment and electrical distribution and lighting equipment. Fires within livestock production properties, 84% of civilian injuries were due to structure fires. While 53% of those fires were caused by heating equipment and electrical distribution and lighting equipment.

Fire sprinklers are installed in some animal housing facilities and have a significant impact saving lives and property. The McKinney, TX Fire Department responded to an incident at The Collin County Animal Shelter. First responders upon arrival noted the fire alarm was sounding and strobes activated. The investigation revealed the fire sprinkler system had activated and extinguished the fire within the shelter. A single sprinkler is credited for the minimal fire damage and reinforced the value of fire sprinkler systems. Shelter staff reported no injuries to the 124 sheltered animals. "This successful sprinkler save continues to demonstrate the effectiveness of automatic fire sprinkler systems in a commercial environment. Had a fire sprinkler system not been present, the outcome may have been very different," said Deputy Fire Marshal Andrew Barr.

Another fire occurred in the Sea Life Center's avian curatorial on the second floor of the facility. Firefighters saw smoke coming from the building upon arrival and discovered that the fire sprinkler system had already extinguished what was believed to have been a small electrical fire. No staff or other animals were injured in the fire.

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

The change may increase the cost of construction due to the increased level of life safety for the occupants.

F164-21

IFC: 105.5, 105.5.49, [A] 105.6, [A] 105.6.21, [A] 105.6.24, 3103.2, 3103.4, 3105.2, 3105.3

Proponents: Michael O'Brian, representing FCAC (fcac@iccsafe.org)

2021 International Fire Code

105.5 Required operational permits. The *fire code official* is authorized to issue operational permits for the operations set forth in Sections 105.5.2 through 105.5.52.

Revise as follows:

105.5.49 Temporary membrane structures, special event structures and tents. An operational permit is required to operate an air-supported temporary membrane structure, a temporary *special event structure* or a tent having an area in excess of 400 square feet (37 m²).

Exceptions:

1. Tents used exclusively for recreational camping purposes.
2. Funeral tents and curtains, or extensions attached thereto, when used for funeral services.
- 2.3. Tents open on all sides, which comply with all of the following:
 - 2.1. 3.1 Individual tents having a maximum size of 700 square feet (65 m²).
 - 2.2. 3.2 The aggregate area of multiple tents placed side by side without a fire break clearance of not less than 12 feet (3658 mm) shall not exceed 700 square feet (65 m²) total.
 - 2.3. 3.3 A minimum clearance of 12 feet (3658 mm) to structures and other tents shall be provided.

[A] 105.6 Required construction permits. The *fire code official* is authorized to issue construction permits for work as set forth in Sections 105.6.1 through 105.6.24.

Revise as follows:

[A] 105.6.21 Special event structure. A single construction permit is required to erect and take down a *temporary special event structure* in accordance with Section 105.5.49.

[A] 105.6.24 Temporary membrane structures and tents. A construction permit is required to erect an air-supported temporary membrane structure, a ~~temporary stage canopy~~ temporary special event structure or a tent in accordance with Section 105.5.49 ~~having an area in excess of 400 square feet (37 m²).~~

Exceptions:

1. ~~Tents used exclusively for recreational camping purposes.~~
2. ~~Funeral tents and curtains, or extensions attached thereto, when used for funeral services.~~
3. ~~Tents and awnings open on all sides, which comply with all of the following:~~
 - 3.1. ~~Individual tents shall have a maximum size of 700 square feet (65 m²).~~
 - 3.2. ~~The aggregate area of multiple tents placed side by side without a fire break clearance of not less than 12 feet (3658 mm) shall not exceed 700 square feet (65 m²) total.~~
 - 3.3. ~~A minimum clearance of 12 feet (3658 mm) to structures and other tents shall be maintained.~~

3103.2 Approval required. ~~Tents and membrane structures~~ required to have a permit as set forth in Sections 105.5 and 105.6 ~~having an area in excess of 400 square feet (37 m²)~~ shall not be erected, operated or maintained for any purpose without first obtaining a permit and approval from the *fire code official*.

Exceptions:

1. ~~Tents used exclusively for recreational camping purposes.~~

2. ~~Tents open on all sides that comply with all of the following:~~

2.1. ~~Individual tents having a maximum size of 700 square feet (65 m²).~~

2.2. ~~The aggregate area of multiple tents placed side by side without a fire break clearance of 12 feet (3658 mm), not exceeding 700 square feet (65 m²) total.~~

2.3. ~~A minimum clearance of 12 feet (3658 mm) to all structures and other tents.~~

Delete without substitution:

~~**3103.4 Permits.** Permits shall be required as set forth in Sections 105.5 and 105.6.~~

Revise as follows:

3105.2 Approval. Temporary special event structures required to have a permit as set forth in Sections 105.5 and 105.6 ~~in excess of 400 square feet (37 m²)~~ shall not be erected, operated or maintained for any purpose without first obtaining approval and a permit from the *fire code official* and the building official.

Delete without substitution:

~~**3105.3 Permits.** Permits shall be required as set forth in Sections 105.5 and 105.6.~~

Reason Statement: The intent of this proposal is to eliminate duplication of code language and consistent use of the defined terms and approach to references. In looking at requirements for temporary membrane structures, temporary special event structures and tents in Permits and Chapter 31 has indicated an inconsistency in terminology. This deletion of text will not change requirements, but instead put the criteria in one location so it will remain consistent over time.

This proposal is submitted by the ICC Fire Code Action Committee (FCAC). The FCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes with regard to fire and life safety in new and existing buildings and facilities as well as the protection of life and property in wildland urban interface areas. In 2020 and 2021 the Fire-CAC held multiple virtual meetings that were open to any interested party. In addition, there were numerous virtual specific working group meetings that were also open to any interested parties, to develop, discuss and debate the proposed changes. Related documentation and reports are posted on the FCAC website at: <https://www.iccsafe.org/products-and-services/i-codes/code-development/cs/fire-code-action-committee-fcac/>

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This is simply an editorial clean up of permit requirements to make the requirements consistent.

F175-21

IFC: (New), SECTION 202, CHAPTER 38, 3801.1, 3802.1, 3804.1.1.6, 5003.8.3; IBC: (New), SECTION 202, [F] 307.1.1, [F] 414.2, SECTION 428, [F] 428.1

Proponents: Jeff O'Neill, representing American Society of Health Care Engineers (ASHE) (jeff.oneill@uphs.upenn.edu); Andrew W.J. Kollar, Self / Fused Studios P.C., representing Self (akollar@fusedstudios.org); Wayne Jewell, Green Oak Charter Township, representing Self (wayne.jewell@greenoaktwp.com)

2021 International Fire Code

Add new definition as follows:

HEALTH CARE LABORATORY. Laboratories used for to support the health care facilities through testing, analysis, research or developmental activities on a nonproduction basis including diagnostic, clinical and hospital laboratories.

HIGHER EDUCATION LABORATORY. Laboratories in Group B occupancies used for educational purposes above the 12th grade. Storage, use and handling of chemicals in such laboratories shall be limited to purposes related to testing, analysis, teaching, research or developmental activities on a nonproduction basis.

Revise as follows:

LABORATORY SUITE. A fire-rated enclosed laboratory area that will provide one or more laboratory spaces, within a ~~Group B educational occupancy~~ higher education or health care laboratory, that are permitted to include ancillary uses such as offices, bathrooms and corridors that are contiguous with the laboratory area, and are constructed in accordance with Chapter 38.

CHAPTER 38 HIGHER EDUCATION AND HEALTH CARE LABORATORIES

3801.1 Scope. *Higher education and health care laboratories* complying with the requirements of this chapter shall be permitted to exceed the maximum allowable quantities of hazardous materials in *control areas* set forth in Chapter 50 without requiring classification as a Group H occupancy. Except as specified in this chapter, such laboratories shall comply with all applicable provisions of this code and the *International Building Code*.

3802.1 Definitions. The following terms are defined in Chapter 2:

CHEMICAL FUME HOOD.

GLOVE BOX.

HEALTH CARE LABORATORY.

HIGHER EDUCATION LABORATORY.

LABORATORY SUITE.

SPECIAL EXPERT.

3804.1.1.6 Standby or emergency power. *Higher education and health care laboratory suites* shall be provided with emergency or standby power in accordance with Section 1203.2.14.

5003.8.3 Control areas. *Control areas* shall comply with Sections 5003.8.3.1 through 5003.8.3.5.3.

Exception: *Higher education and health care laboratories* in accordance with Chapter 38 of this code and Section 428 of the International Building Code.

2021 International Building Code

Add new definition as follows:

HEALTH CARE LABORATORY. Laboratories used for to support the health care facilities through testing, analysis, research or developmental activities on a nonproduction basis including diagnostic, clinical and hospital laboratories.

Revise as follows:

[F] HIGHER EDUCATION LABORATORY. Laboratories in Group B occupancies used for educational purposes above the 12th grade. Storage, use and handling of chemicals in such laboratories shall be limited to purposes related to testing, analysis, teaching, research or

developmental activities on a nonproduction basis.

[F] LABORATORY SUITE. A fire-rated, enclosed laboratory area providing one or more laboratory spaces within a a higher education laboratory or a health care laboratory ~~Group B educational occupancy~~ that includes ancillary uses such as offices, bathrooms and corridors that are contiguous with the laboratory area, and are constructed in accordance with Section 428.

[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 storage battery systems installed in accordance with the *International Fire 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 product* storage, aerosol cooking spray products or plastic aerosol 3 products 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. Stationary fuel cell power systems installed in accordance with the *International Fire Code*.
16. Capacitor energy storage systems in accordance with the *International Fire Code*.
17. ~~Group B higher~~ Higher education and health care laboratories ~~laboratory occupancies~~ complying with Section 428 and Chapter 38 of the *International Fire Code*.
18. Distilling or brewing of beverages conforming to the requirements of the *International Fire Code*.
19. The storage of beer, distilled spirits and wines in barrels and casks conforming to the requirements of the *International Fire Code*.

[F] 414.2 Control areas. *Control areas* shall comply with Sections 414.2.1 through 414.2.5 and the *International Fire Code*.

Exception: Higher education and health care laboratories in accordance with Section 428 and Chapter 38 of the *International Fire Code*.

SECTION 428 HIGHER EDUCATION AND HEALTH CARE LABORATORIES.

[F] 428.1 Scope. Higher education and health care laboratories complying with the requirements of Sections 428.1 through 428.4 shall be permitted to exceed the maximum allowable quantities of *hazardous materials* in *control areas* set forth in Tables 307.1(1) and 307.1(2) without requiring classification as a Group H occupancy. Except as specified in Section 428, such laboratories shall comply with all applicable provisions of this code and the *International Fire Code*.

Staff Analysis: This proposal addresses requirements in a different or contradicting manner to those found in Code Change 7075. The committee is urged to make their intentions clear with their actions on these proposals.

Reason Statement: First, we wish to acknowledge the efforts put forth by the Fire Code Action Committee (FCAC) and the people who worked to put together the original code change that introduced “higher education laboratories” in F340-16. That effect successfully put in place much needed regulations to address the use of hazardous materials in what are highly monitored conditions without production – laboratories in higher education institutions, by providing enhanced safety requirements.

But as was the situation prior to the approval of F340-16 and the introduction of regulations for higher education laboratories in what is now Chapter 38 in the IFC and Section 428 in the IBC, the I-Codes still do not specifically provide or address how to regulate those laboratories that by all

accounts operate the same as a “higher education laboratory” but cannot be classified as a “higher education laboratories” because they are not used for educational purposes above the 12th grade.” Because of this, users must try to apply general hazardous materials provisions, which oftentimes are not appropriate for clinical, diagnostic or research laboratory settings.

After being in the 2018 and 2021 codes, users have had a chance to really review and come to understand the provisions that are found in Chapter 38 of the IFC and Section 428 in the IBC. And although we do not disagree with any of the logic that the FCAC gave in the Reason statement for F340-16 for the key parameters that must be present, we do not see any technical reasons for why those provisions are should be limited to only higher education laboratories. This code change seeks to expand the application of the provisions in Chapter 38 of the IFC and Section 428 in the IBC to not just higher education laboratories but to any clinical, diagnostic or research laboratory that meets the criteria contained in those sections – what we are proposing be categorized as “health care laboratories

As was stated in the Reason statement to F340-16 “The advance of technologies, science, medicine and our knowledge of the world often relies on having vibrant and successful academic institutions.” But the laboratory settings in which those advances occur are NOT limited to only those that come out of an academic institutions (high-learning institution) – they come out of laboratories found in the private sector and the nationally-funded sectors also. The perfect example is the research that is happening right now with the race to solve the COVID-19 crisis. Most of the work involved is coming out of laboratories in that are not in a higher education sector.

In their Reason statement for F340-15 the FCAC put forth what they saw as the “conditions typically present in academic laboratories that make them unique,” but which when looked at on their own merits are conditions or characteristics also found in non-academic, non-production laboratories in other occupancies including hospitals, clinical, research and diagnostic areas. The FCAC included:

1. Lower chemical density in individual research laboratories.

“...there are often many small laboratories within a building that are using small quantities of hazardous materials in each location. Individually, they do not store or use a large quantity of hazardous materials, but together, they may often exceed the maximum allowable quantities for the control area. This lower chemical density often mitigates the overall risk, but the IFC currently has no provisions to recognize this condition.”

1. Ongoing staff oversight from "Special Experts" in laboratory safety.

“...”have a full cadre of faculty and staff with chemical expertise. These "Special Experts" often include, but are not limited to: Fire Marshals, Industrial Hygienists, Radiation Safety Officers, Biological Safety Officers, Chemical Hygiene Officers and Environmental Health and Safety Officers. These individuals are an integral part of the preparation/review of laboratory safety documentations, as well as regularly scheduled safety audits.”

1. Mixed-use occupancies.

“...building will house laboratories, office space, storerooms, classrooms and lecture halls. The current limits on hazardous materials are so restrictive on upper floors that many universities are forced to locate classrooms and lecture halls on the upper floors so that they can take full advantage of the hazardous materials quantities allowed on the lower floors. This results in moving large numbers of students through hallways, past laboratories to get to the upper floors. They will also have to exit back down the same routes in the event of an emergency.”

All of these are valid conditions and important principles to use when deciding which the types of laboratories should be allowed to use the provisions in IFC Chapter 38 and IBC Section 428. But these conditions and logic are not limited to only those laboratories found in higher education institutions – rather a laboratory found in an institution of higher learner is only one of many types of laboratories that meets the conditions and principles. When each of the “conditions” is reviewed it really becomes obvious that they are not unique to academic (higher education) laboratories.

This proposal is based on the fundamental concept that it should not be the laboratory “setting” which drives the scope of IFC Chapter 38 (IBC Section 428), i.e., higher education vs private clinical, but rather it should be the characteristics and design of the laboratory. The same philosophy the I-Codes uses to engage the requirements for the hazardous materials provisions in general should be used to engage the requirements for use of IFC Chapter 38. The distribution and density of materials, the physical constraints and the qualification of on-site personal are all “conditions” that are also found in non-academic laboratories which do not support production or processing.

Many non-academic laboratories (think diagnostic and clinical) are designed in the same way higher learning laboratories are, and are made up of [to quote F340-16] “...many small laboratories within a building that are using small quantities of hazardous materials in each location. Individually, they do not store or use a large quantity of hazardous materials, but together, they may often exceed the maximum allowable quantities for the control area.” If so, then it is logical that they should be able to use the provisions in IFC Chapter 38?

Regarding the topic of “oversight” from special experts, the logic FCAC present is not unique to higher education laboratories. It is also very true for most non-academic laboratories (such as hospitals and testing organizations) because they are mandated through state and federal agencies.

Regarding the topic of “mixed occupancy,” while most post-secondary academic laboratory do occur in what are deemed to be “mixed occupancy,” so are most non-academic laboratories. A perfect example is that of a hospital – while the primary occupancy is Group I-2, almost every hospital

also contains other occupancies such as storage/utility areas, kitchens, dining facilities, office space, and clinical laboratories.

The one condition FCAC included in their Reason statement that when closely examined was a double-edged sword was:

1. Limited, or "directed", funding streams. Also unique to academic institutions are the funding sources for research. In a "non-profit" teaching and research environment, the majority of research is funded through grants and endowments. Unfortunately, many grants only support the costs of research personnel and equipment, not structural upgrades to accommodate newer research processes.

While a limited funding stream is portrayed as a justification for implementing new regulations for laboratories associated with academic institutions, a good funding stream is actually a benefit because it allows a non-academic laboratory to be equipped with the newest equipment – both for laboratory experiments and for the protection of the occupants. Logic says that because of good funding non-academic laboratories may operate in a safer environment.

We also assert that there is a fifth condition that was present in the development of the code language in F340-16, and should be acknowledged, one that is fundamental:

1. The activities in a laboratory are not part of a production process, nor in any way simulate a production process.

Without the code change contained herein, jurisdictions will still have to do the same thing for non-academic laboratories as they have been – making state or local amendments to allow for greater numbers of control areas and larger percentages of MAQs in non-production laboratories. Code Change F340-16 brought higher education laboratories into the codes and provides the AHJ with rules but there still are no unique rules for non-academic laboratories. This proposal seeks to build on the work the FCAC did in F340-16 and provide standardized model code language to address this topic for both academic (higher education) and non-academic laboratories.

To allow non-academic laboratories to use these regulations the following revisions are proposed:

- Replace the definition of "higher learning laboratories" with "non-production laboratories;"
- Revise IFC Chapter 38 to use the new designation of "non-production laboratories"
- Revise IBC Section 428 to use the new designation of "non-production laboratories"
- Coordinate the various sections in the IFC and IBC to use the new designation of "non-production laboratories"

For those interested in the history of this topic and Code change F340-16, please visit the ICC Code Development Archives at <https://www.iccsafe.org/products-and-services/i-codes/code-development/2015-2017-code-development-cycle/>

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

By complying with the provisions in IFC Chapter 39 small non-academic, non-production laboratories will be classified as a Group B occupancies rather than a Group H occupancy. However, many of the non-production labs that this change would cover would seek variances to be in B-occupancies, thus avoiding the impacts of being classified as H-occupancies. Therefore, savings are in reality very slight for those areas (ie: hospital labs, commercial diagnostic labs such as Qwest or LabCorp).

F176-21

IFC: Chapter 38

Proponents: Elley Klausbruckner, Klausbruckner & Associates, Inc., representing Klausbruckner & Associates, Inc.

2021 International Fire Code

Delete without substitution:

~~CHAPTER 38 HIGHER EDUCATION LABORATORIES~~

~~SECTION 3801 GENERAL.~~

Revise as follows:

~~**3801.1 Scope.** Higher education laboratories complying with the requirements of this chapter shall be permitted to exceed the maximum allowable quantities of hazardous materials in *control areas* set forth in Chapter 50 without requiring classification as a Group H occupancy. Except as specified in this chapter, such laboratories shall comply with all applicable provisions of this code and the *International Building Code*.~~

~~**3801.2 Application.** The provisions of this chapter shall be applied as exceptions or additions to applicable requirements of this code. Unless specifically modified by this chapter, the storage, use and handling of hazardous materials shall comply with the provisions in Chapters 50 through 67 and the *International Building Code* for quantities not exceeding the maximum allowable quantity.~~

Delete without substitution:

~~SECTION 3802 DEFINITIONS.~~

Revise as follows:

~~**3802.1 Definitions.** The following terms are defined in Chapter 2:~~

~~CHEMICAL FUME HOOD.~~

~~GLOVE BOX.~~

~~HIGHER EDUCATION LABORATORY.~~

~~LABORATORY SUITE.~~

~~SPECIAL EXPERT.~~

~~SECTION 3803 GENERAL SAFETY PROVISIONS.~~

~~**3803.1 Scope.** Laboratories and *laboratory suites* applying the requirements of this chapter shall be in accordance with the general safety provisions in Sections 3803.1.1 through 3803.2.2.~~

~~**3803.1.1 Chemical safety reviews.** Operating and emergency procedures planning and documentation shall be provided in accordance with Sections 5001.3.3.11 through 5001.3.3.17. Such documentation shall be prepared by laboratory safety personnel or *special experts*, and shall be made available in the workplace for reference and review by employees. Copies of such documentation shall be made available to the *fire code official* for review upon request.~~

~~**3803.1.2 Chemical handling.** Receiving, transporting on site, unpacking and dispensing of hazardous materials shall be carried out by persons trained in proper handling of such materials and shall be performed in accordance with Chapters 50 through 67, as applicable.~~

~~**3803.1.3 Warning signage.** Warning signs shall be provided in accordance with Section 5003.5.~~

~~**3803.1.4 Maintenance of equipment, machinery and processes.** Maintenance of equipment, machinery and processes used with hazardous materials shall comply with Section 5003.2.6.~~

~~**3803.1.5 Time-sensitive materials.** Containers of materials that have the potential to become hazardous during prolonged storage shall be dated when first opened, and shall be managed in accordance with NFPA 45, Section 8.3.4.4.1.~~

~~**3803.1.6 Hazardous wastes.** Storage, dispensing, use and handling of hazardous waste shall comply with this chapter and Chapters 50 through 67, as applicable.~~

~~**3803.1.7 Automatic fire-extinguishing systems.** New laboratories in new or existing buildings that increase maximum allowable quantities of hazardous materials based on the requirements in this chapter shall be equipped throughout with an *approved automatic sprinkler system* in~~

accordance with Section 903.3.1.1.

3803.2 Hazardous materials storage and use. Hazardous materials storage, handling and use in laboratories and *laboratory suites* complying with Chapter 38 shall be in accordance with this chapter and Chapters 50 through 67.

3803.2.1 Container size. The maximum container size for all hazardous materials shall be 5.3 gallons (20 L) for liquids, 50 pounds (22.7 kg) for solids, 100 cubic feet (2.83 m³) for *health hazard* gases per Table 5003.1.1(2) and 500 cubic feet (14.15 m³) for all other gases in accordance with Table 5003.1.1(1).

Exception: Hazardous waste collection containers, for other than Class I *flammable liquids* and Class II *combustible liquids*, are permitted to exceed 5.3 gallons (20 L) where *approved*.

3803.2.2 Density. Quantities of Class I *flammable liquids* in storage and use shall not exceed 8 gallons (30 L) per 100 square feet (9.29 m²) of floor area. Densities shall be reduced by 25 percent on the 4th through 6th floors of the building, and by 50 percent above the 6th floor. Regardless of the density, the *maximum allowable quantity per control area* or *laboratory suite* in accordance with this chapter, shall not be exceeded.

Exception:

Designated hazardous waste collection areas or rooms within a *laboratory suite* or *control area* are not limited, but such materials shall not exceed the maximum allowable quantity per *laboratory suite* or *control area*.

SECTION 3804 LABORATORY SUITE CONSTRUCTION.

3804.1 General. Where *laboratory suites* are provided, they shall be constructed in accordance with this chapter and Section 428 of the International Building Code.

3804.1.1 Laboratory suites. The number of *laboratory suites* and percentage of maximum allowable quantities of hazardous materials in *laboratory suites* shall be in accordance with Table 3804.1.1.

**TABLE 3804.1.1
DESIGN AND NUMBER OF LABORATORY SUITES PER FLOOR**

FLOOR LEVEL		PERCENTAGE OF THE MAXIMUM ALLOWABLE QUANTITY PER LAB SUITE ^a	NUMBER OF LAB SUITES PER FLOOR	FIRE-RESISTANCE RATING FOR FIRE BARRIERS IN HOURS ^b
Above grade plane	21+	Not Allowed	Not Allowed	Not Allowed
	16-20	25	1	2 ^c
	11-15	50	1	2 ^c
	7-10	50	2	2 ^c
	4-6	75	4	1
	3	100	4	1
Below grade plane	1-2	100	6	1
	1	75	4	1
		50	2	1
		Not Allowed	Not Allowed	Not Allowed

- a. Percentages shall be of the maximum allowable quantity per control area shown in Table 5003.1.1(1) and Table 5003.1.1(2), with all increases allowed in the footnotes to those tables.
- b. Fire barriers shall include walls, floors and ceilings necessary to provide separation from other portions of the building.
- c. Vertical fire barriers separating laboratory suites from other spaces on the same floor are permitted to be 1-hour rated.

3804.1.1.1 Separation from other nonlaboratory areas. *Laboratory suites* shall be separated from other portions of the building in accordance with the most restrictive of the following:

1. *Fire barriers* and *horizontal assemblies* as required in Table 3804.1.1. *Fire barriers* shall be constructed in accordance with Section 707 of the International Building Code and *horizontal assemblies* shall be constructed in accordance with Section 711 of the International Building Code.

Exception: Where an individual *laboratory suite* occupies more than one story, the *fire-resistance rating* of intermediate floors contained within the *laboratory suite* shall comply with the requirements of the *International Building Code*.

2. Separations as required in Section 508 of the International Building Code.

3804.1.1.2 Separation from other laboratory suites. *Laboratory suites* shall be separated from other *laboratory suites* in accordance with Table 3804.1.1.

3804.1.1.3 Floor assembly fire resistance. The floor assembly supporting *laboratory suites* and the construction supporting the floor of *laboratory suites* shall have a *fire-resistance rating* of not less than 2 hours.

Exception: The floor assembly of *laboratory suites* and the construction supporting the floor of *laboratory suites* are permitted to be 1-hour fire-resistance rated in buildings of Types IIA, IIIA and VA construction, provided that the building is three or fewer stories.

3804.1.1.4 Maximum number. The maximum number of *laboratory suites* shall be in accordance with Table 3804.1.1. Where a building contains both *laboratory suites* and *control areas*, the total number of *laboratory suites* and *control areas* within a building shall not exceed the maximum number of *laboratory suites* in accordance with Table 3804.1.1.

3804.1.1.5 Means of egress. *Means of egress* shall be in accordance with Chapter 10.

3804.1.1.6 Standby or emergency power. Higher education *laboratory suites* shall be provided with emergency or standby power in accordance with Section 1203.2.14.

3804.1.1.7 Ventilation. Ventilation shall be in accordance with the *International Mechanical Code* and Chapter 7 of NFPA 45.

3804.1.1.8 Liquid-tight floor. Portions of *laboratory suites* where hazardous materials are present shall be provided with a liquid-tight floor.

3804.1.1.9 Automatic fire-extinguishing systems. Buildings containing *laboratory suites* shall be equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1.

3804.1.2 Percentage of maximum allowable quantity in each laboratory suite. The percentage of maximum allowable quantities of hazardous materials in each *laboratory suite* shall be in accordance with Table 3804.1.1.

Delete without substitution:

SECTION 3805 NONSPRINKLERED LABORATORIES.

Revise as follows:

3805.1 Scope. Storage and use of hazardous materials in existing laboratories located within existing buildings not equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 is permitted where such use complies with Section 3803, Chapters 50 through 67, as applicable, and Sections 3805.2 through 3805.4.

3805.2 Nonsprinklered laboratories. The maximum allowable quantities of hazardous materials in storage and use in *control areas* in laboratories located in buildings not equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 shall be in accordance with Table 5003.1.1(1), Table 5003.1.1(2) and Table 5003.8.3.2, except as modified by Sections 3805.2.1 and 3805.2.2.

3805.2.1 Restricted materials storage. Where *approved by the fire code official*, storage of the following hazardous materials prohibited by Table 5003.1.1(1) in buildings not equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 shall be allowed within a laboratory *control area* at 25 percent of Table 5003.1.1(1) limits for a building equipped throughout with an *automatic sprinkler system*:

1. Class 4 oxidizers.
2. Pyrophorics.

The percentage of the *maximum allowable quantity per control area* shown in Table 3805.4 shall be applied to 25 percent of Table 5003.1.1(1) limits for Class 4 oxidizers or pyrophoric materials.

Additional quantity increases shall be prohibited, and such materials shall be stored in accordance with all of the following:

1. Containers shall be completely sealed and stored in accordance with the manufacturers' recommendations.
2. Storage shall be within *approved* hazardous material storage cabinets in accordance with Section 5003.8.7, or shall be located in an inert atmosphere glove box in accordance with NFPA 45, Section 7.11.
3. The storage cabinet or *glove box* shall not contain any storage of *incompatible materials*.

3805.2.2 Restricted materials use. Where *approved by the fire code official*, use of the following hazardous materials prohibited by Table 5003.1.1(1) in buildings not equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, shall be allowed within a laboratory *control area* at 25 percent of Table 5003.1.1(1) limits for buildings equipped throughout with an *automatic sprinkler system*:

1. Class 4 oxidizers.
2. Pyrophorics.

The percentage of the *maximum allowable quantity per control area* shown in Table 3805.4 shall be applied to 25 percent of Table 5003.1.1(1) limits for Class 4 oxidizers or pyrophoric materials.

Additional quantity increases shall be prohibited, and such materials shall be stored in accordance with all of the following:

1. Use shall be within an *approved* chemical fume hood *listed* in accordance with UL 1805, or in an inert atmosphere glove box in accordance with NFPA 45, Section 7.11, or other *approved* equipment designed for the specific hazard of the material.
2. Combustible materials shall be kept not less than 2 feet (610 mm) away from the work area, except for those items directly related to the research.
3. A portable fire extinguisher appropriate for the specific material shall be provided within 20 feet (6096 mm) of the use in accordance with Section 906.

3805.3 Restricted materials automatic fire detection. An automatic fire detection system shall be installed in all existing laboratories in nonsprinklered buildings in accordance with this section. Detectors shall be connected to the building's fire alarm control unit where a fire alarm system is provided. Detector initiation shall activate the occupant notification system in accordance with Section 907.5 where connected to the building's fire alarm control unit. Activation of the detection system shall sound a local alarm in buildings not equipped with a fire alarm notification system.

3805.3.1 System supervision and monitoring. Automatic fire detection systems shall be electronically supervised and monitored by an *approved* supervising station or, where *approved*, shall initiate an audible and visual signal at a constantly attended, on-site location.

3805.4 Percentage of maximum allowable quantity per control area. The percentage of *maximum allowable quantities per control area* of hazardous materials shall comply with Table 3805.4.

**TABLE 3805.4
DESIGN AND NUMBER OF CONTROL AREAS IN EXISTING NONSPRINKLERED LABORATORIES**

FLOOR LEVEL		PERCENTAGE OF THE MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA ^{a, e}	NUMBER OF CONTROL AREAS PER FLOOR	FIRE-RESISTANCE RATING FOR FIRE BARRIERS IN HOURS ^{b, c, d}
Above grade plane	Higher than 9	5	1	2 ^e
	7-9	10	2	2 ^e
	4-6	25	22	2 ^e
	3	75	4	1
	1-2	100		1
Below grade plane	1	100	3	1
	2	75	2	1
	Lower than 2	Not Allowed	Not Allowed	Not Allowed

- a. Percentages shall be of the maximum allowable quantity per control area shown in Table 5003.1.1(1) and Table 5003.1.1(2), excluding all increases allowed in the footnotes to those tables.
- b. Fire barriers shall include walls, floors and ceilings necessary to provide separation from other portions of the building.
- c. Vertical fire barriers separating control areas from other spaces on the same floor are permitted to be 1-hour fire-resistance rated.
- d. See Section 414.2.4 of the International Building Code for additional requirements.
- e. The percentage of the maximum allowable quantity per control area shown in Table 3805.4 shall be applied to 25 percent of Table 5003.1.1(1) limits for Class 4 oxidizers or pyrophoric materials.

Delete without substitution:

SECTION 3806 EXISTING SPRINKLERED LABORATORIES.

Revise as follows:

3806.1 Scope. Storage and use of hazardous materials in existing laboratories within buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 shall be in accordance with Section 3803 and with Chapters 50 through 67, as applicable, except as modified by this section.

3806.2 Hazardous materials storage and use. Storage and use of hazardous materials within *control areas* in new and existing laboratories equipped with an *automatic sprinkler system* shall be in accordance with this section and Chapters 50 through 67, as applicable.

Exception: Existing laboratories in buildings equipped throughout with an *automatic sprinkler system* meeting the requirements for *laboratory suites* are permitted to comply with Section 3804.

3806.2.1 Percentage of maximum allowable quantities per control area. The percentage of *maximum allowable quantities per control area* of hazardous materials shall be in accordance with Table 3806.2.1.

**TABLE 3806.2.1
DESIGN AND NUMBER OF CONTROL AREAS IN EXISTING SPRINKLERED LABORATORIES**

FLOOR LEVEL		PERCENTAGE OF THE MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA ^a	NUMBER OF CONTROL AREAS PER FLOOR	FIRE-RESISTANCE RATING FOR FIRE BARRIERS IN HOURS ^{b, d}
Above grade plane	21+	5	1	2 ^e
	11-20	10	1	2 ^e
	7-10	25	2	2 ^e
	4-6	50	2	2 ^e
	3	75	3	1
	1-2	100	4	1
Below grade plane	1	100	3	1
	2	75	2	1
	Lower than 2	Not Allowed	Not Allowed	Not Allowed

- a. Percentages shall be of the maximum allowable quantity per control area shown in Table 5003.1.1(1) and Table 5003.1.1(2), with all increases allowed in the footnotes to those tables.
- b. Fire barriers shall include walls, floors and ceilings necessary to provide separation from other portions of the building.
- c. Vertical fire barriers separating control areas from other spaces on the same floor are permitted to be 1-hour fire-resistance rated.
- d. See Section 414.2.4 of the International Building Code for additional requirements.

CHEMICAL FUME HOOD. A ventilated enclosure designed to contain and exhaust fumes, gases, vapors, mists and particulate matter generated within the hood.

GLOVE BOX. A sealed enclosure in which items inside the box are handled exclusively using long gloves sealed to ports in the enclosure.

HIGHER EDUCATION LABORATORY. Laboratories in Group B occupancies used for educational purposes above the 12th grade. Storage, use and handling of chemicals in such laboratories shall be limited to purposes related to testing, analysis, teaching, research or developmental activities on a nonproduction basis.

LABORATORY SUITE. A fire-rated enclosed laboratory area that will provide one or more laboratory spaces, within a Group B educational occupancy, that are permitted to include ancillary uses such as offices, bathrooms and corridors that are contiguous with the laboratory area, and are constructed in accordance with Chapter 38.

[A] SPECIAL EXPERT. An individual who has demonstrated qualifications in a specific area, outside the practice of architecture or engineering, through education, training and experience.

Staff Analysis: This proposal addresses requirements in a different or contradicting manner to those found in Code Change 6362. The committee is urged to make their intentions clear with their actions on these proposals.

Reason Statement: Since the adoption of the codes, we have realized that there are many issues associated to providing an exception for higher education lab:

1. The idea that higher education labs are safer than other types of labs is in this proponent's opinion a mistake. Based on our experience in providing hazardous materials code compliance services, there are universities that are extremely well maintained with a great system of tracking hazardous materials while there are other universities where students are given "carte blanche" on how they store and use chemicals without any system of tracking quantities.
2. The storage and use of smaller containers has been given as the reason for allowing higher quantities. While that is the case for university labs, it's also the case for ANY lab. Why are higher education labs being treated differently than other labs?
3. The only fatality incident in a lab that we are aware of occurred at UCLA in 2008. While increasing flammable/combustible liquids might an option for higher education labs (since the majority of the issues in upper floors are related to flammable/combustible liquids), increasing other chemicals such as pyrophorics may have may have consequences. The fatality at UCLA was from an incident involving pyrophorics.
4. Contamination from fire fighting water (i.e. fire hose discharge) spilling to lower levels in labs located in high rise can create additional liability for fire departments.

Cost Impact: The code change proposal will increase the cost of construction
The cost of construction for higher education labs will increase as a result of this code change.

F186-21 Part I

PART I IFC: SECTION 4005

PART II IBC: 306.2, 306.3, 311.2, 311.3

Proponents: Michael O'Brian, representing FCAC (fcac@iccsafe.org); Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

THIS IS A TWO PART CODE CHANGE. PART 1 OF THIS PROPOSAL WILL BE HEARD BY THE FIRE CODE COMMITTEE AND PART 2 OF THIS PROPOSAL WILL BE HEARD BY THE BUILDING CODE GENERAL COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Fire Code

SECTION 4005 FIRE PROTECTION.

Delete without substitution:

~~**4005.1 Automatic sprinkler system.** The storage of distilled spirits and wines shall be protected by an *approved automatic sprinkler system* as required by Chapter 9.~~

Add new text as follows:

4005.1 Palletized storage of distilled spirits in wooden barrels. The palletized storage of distilled spirits shall be protected by an *approved automatic sprinkler system* installed throughout the building in accordance with Section 903.3.1.1 as modified in this section.

4005.1.1 Storage height. Palletized storage arrays of barrels stored on-end shall be limited to a maximum of 7 pallets high.

4005.1.2 Flue spaces. Flue spaces with a minimum width of 6 inches (152 mm) shall be maintained between adjacent pallets.

4005.1.3 Loading aisles. Palletized storage that is provided with a defined loading aisle between pallet storage areas shall be arranged using one of the following:

1. Draft curtains, installed in accordance with Section 4005.1.3.1, shall be provided along the side of palletized storage facing the loading aisle to separate the quick response sprinklers and standard response sprinklers.
2. A trench drain shall be provided on each side of the loading aisle, arranged to capture any spilled distilled spirits in the aisle space and remove them from the building to prevent spills from spreading into the barrel storage area.
3. Barrels shall be banded on each pallet to prevent barrels from falling off pallets during transportation and loading into the storage racks.

4005.1.3.1 Draft curtains. Where installed in accordance with Section 4005.1.3, Item 1, draft curtains shall be designed and construction in accordance with Sections 4005.1.3.1.1 through 4005.1.3.1.3.

4005.1.3.1.1 Construction. Draft curtains shall be constructed of sheet metal, lath and plaster, gypsum board or other approved noncombustible materials that provide equivalent performance to resist the passage of smoke. Joints and connections shall be designed to resist the passage of smoke.

4005.1.3.1.2 Location. Draft curtains shall be located along loading aisles serving storage areas.

4005.1.3.1.3 Depth. Draft curtains shall extend vertically downward from the ceiling for a minimum distance of 20 percent of the ceiling height measured from the floor, with a minimum depth of 6 feet (1829 mm).

4005.1.4 Automatic sprinkler system design. Storage heights and automatic sprinkler densities for palletized on-end barrels shall in accordance with Table 4005.1.4 and Sections 4005.1.4.1 through 4005.1.4.6.

TABLE 4005.1.4
Palletized Storage of Distilled Spirits with up to 75% Alcohol by Volume in Wooden Barrels

Protection Area	Sprinkler System Type	Maximum Ceiling Height (feet)	Maximum Storage Height	Ceiling Sprinkler Protection		
				Response / Nominal Temperature Rating / Orientation	K-factor gpm/psi ^{1/2}	Design ^a , # of Sprinklers @ Pressure (psi)
Barrel Storage	Wet-pipe	30	24 feet or	QR / 165°F / Pendent	14.0	12 @ 18
	Dry-pipe		7 barrels	SR / 286°F / Upright	16.8	24 @ 13
	Wet-pipe	30	1 barrel	Any / 165°F / Any	11.2	30 @ 7
	Dry-pipe		SR / 286°F / Upright	11.2	50 @ 7	
	Wet-pipe	30	2 barrels	SR / 286°F / Any	11.2	50 @ 29
Loading Aisle w/ Draft Curtain	Wet-pipe or Dry-pipe	30	NA	SR / 286°F / Any	5.6	100 @ 13
					> 8.0	100 @ 7
Loading Aisle w/ Trench Drains or Banded Barrels or No Permanent Loading Aisle	Provide the barrel storage design across the entire roof area (i.e., storage area and loading aisle)					

For SI: 1 foot = 304.8 mm; 1 pound per square inch (psi) = 6.895 kPa; K-Factor of 1 gpm/psi^{0.5} = 14.395 L/min/bar^{0.5}; °C = [(°F)-32]/1.8.

Notes: QR = quick response sprinkler; SR = standard response sprinkler.

a. Sprinklers shall have a maximum coverage area of 100 square feet (9.3 m²).

4005.1.4.1 Protected product. The storage and automatic sprinkler requirements in Table 4005.1.4 apply to alcohol-water mixtures greater than 20 percent and up to 75 percent alcohol by volume in wooden barrel sizes not exceeding 130 gallons (492 L).

4005.1.4.2 Hose stream allowance. The automatic sprinkler design shall include a 500 gallons per minute (1900 L/min) hose stream allowance.

4005.1.4.3 Water supply duration. The automatic sprinkler system water supply duration, including hose stream demand, shall be a minimum of one hour.

4005.1.4.4 Automatic sprinkler system balancing. Where a permanent loading aisle is provided with a separate automatic sprinkler system on the ceiling, the barrel storage automatic sprinkler design and the loading aisle automatic sprinkler design are not required to be balanced at the point of connection.

4005.1.4.5 Dry pipe sprinkler systems. Where dry-pipe sprinkler systems are installed, the sprinkler system shall be designed to deliver water to the most remote 4 sprinklers within 40 seconds.

4005.1.4.6 Small distilled spirits facilities. Fire protection for palletized storage of distilled spirits in small distilled spirits facilities not greater than 7,500 square feet (697 m²) is permitted to be in accordance with Sections 4005.1.4.6.1 through 4005.1.4.6.3.

4005.1.4.6.1 Ceiling clearance. The clearance from the top of storage to the deflector of the automatic sprinklers at the ceiling shall be a minimum of 18 inches (457 mm) and a maximum of 10 feet (3048 mm).

4005.1.4.6.2 Automatic sprinkler coverage area. The automatic sprinkler coverage area shall not exceed 80 square feet (7.4 m²) per sprinkler.

4005.1.4.6.3 Fire protection scheme. The storage arrangement and automatic sprinkler system design shall be in accordance with Table 4005.1.4.6.3.

**TABLE 4005.1.4.6.3
PALLETIZED STORAGE OF DISTILLED SPIRITS IN WOODEN BARRELS IN SMALL DISTILLED SPIRITS FACILITIES**

Protection Area	Sprinkler System Type	Maximum Ceiling Height (feet)	Maximum Storage Height (feet)	Ceiling Sprinkler Protection			
				Response / Temperature Rating / Orientation	K-factor (gpm/psi^{1/2})	Sprinkler Density (gpm/ft²)	Area (square feet)
Barrel Storage	Wet-pipe	24	12	SR / 286°F / Any	≥ 11.2	0.35	4000
				SR / 165°F / Any	≥ 11.2	0.35	7500

For SI: 1 foot = 304.8 mm; 1 pound per square inch (psi) = 6.895 kPa; K-Factor of 1 gpm/psi^{0.5} = 14.395 L/min/bar^{0.5}; °C = [(°F)-32]/1.8; 1 gallon per minute per square foot = 40.75 L/min/m².

Notes: SR = standard response sprinkler.

4005.2 Rack storage in wooden barrels. The rack storage of distilled spirits and wine greater than 20 percent alcohol shall be protected by an approved automatic sprinkler system installed throughout in accordance with Section 903.3.1.1 and Sections 4005.2.1 through 4005.2.3.5.2.

4005.2.1 Flues spaces for on-side wooden barrels. Rack storage for on-side wooden barrels shall be provided with a minimum width of 8 inches (203 mm) between adjacent rows of barrels.

4005.2.1.1 Elevated walkways. Where provided, elevated walkways between barrels shall be constructed in accordance with one of the following:

1. Noncombustible materials that are 50 percent open.
2. Noncombustible materials that are open less than 50 percent provided the walkway has a maximum width of 1 foot (0.3 m) and a minimum gap of 3 inches (76 mm) is provided between the walkway and the barrel storage.
3. Combustible materials and provided with a row of automatic sprinklers directly beneath each walkway.

4005.2.2 Flues spaces for on-end wooden barrels. Rack storage arrangements with on-end wooden barrels shall be provided with transverse and longitudinal flue spaces with a minimum width of 6 inches (15 cm).

4005.2.3 Fire protection for rack storage. Rack storage arrangements of alcohol-water mixtures up to 75 percent alcohol in wooden barrel with sizes not exceeding 130 gallons (492 L) shall be protected in accordance with Sections 4005.2.3.1 through 4005.2.3.5.2.

4005.2.3.1 Hose stream allowance. The automatic sprinkler system design shall include a 500 gallons per minute (1900 L/min) hose stream allowance.

4005.2.3.2 Water supply duration. The automatic sprinkler system water supply duration, including hose stream demand, shall be a minimum of one hour.

4005.2.3.3 Dry-pipe automatic sprinkler system. Where dry-pipe automatic sprinkler systems are installed, the automatic sprinkler system shall be designed to deliver water to the most remote 4 sprinklers within 40 seconds.

4005.2.3.4 Ceiling automatic sprinkler systems. The automatic sprinkler systems installed at the ceiling shall be designed with a minimum density of 0.2 gallons per minute per square foot (0.8 L/min) with an operating area of 2,000 square feet (186 m²).

4005.2.3.5 Automatic sprinkler system balancing. The automatic sprinkler system installed at the ceiling and the in-rack sprinkler system shall be balanced at the point of connection.

4005.2.3.6 Automatic sprinkler system design. The design of the automatic sprinkler system at the ceiling and the in-rack sprinkler system shall be in accordance with Table 4005.2.3.6.

**TABLE 4005.2.3.6
RACK STORAGE OF DISTILLED SPIRITS IN WOODEN BARRELS**

<u>Barrel Arrangement</u>	<u>Sprinkler System Type</u>	<u>Maximum Ceiling Height (feet)</u>	<u>Maximum Storage Height</u>	<u>Minimum Aisle Width (feet)</u>	<u>Ceiling Sprinkler Protection</u>			<u>In-Rack Sprinkler Protection</u>				
					<u>Response / Nominal Temperature Rating / Orientation</u>	<u>K-factor (gpm/psi^{1/2})</u>	<u>Design, # of Sprinklers @ Pressure (psi)</u>	<u>Layout</u>	<u>Response / Nominal Temperature Rating</u>	<u>K-factor (gpm/psi^{1/2})</u>	<u># of Sprinklers @ Pressure (psi)</u>	<u>Desi</u>
<u>On-Side</u>	<u>Wet</u>	<u>40</u>	<u>33 feet / 9 barrels</u>	<u>NA</u>	<u>QR / 165°F / Pendent</u>	<u>14.0</u>	<u>12 @ 37</u>	<u>None</u>				<u>6 @ 4</u>
					<u>SR / 286°F / Any</u>	<u>≥ 11.2</u>	<u>20 @ 7</u>	<u>Figures 4005.2.3.6(1) and 4005.2.3.6(2)</u>	<u>QR / 165°F / Any</u>	<u>8.0 (115)</u>		<u>one l of in racks or 12 @ [more one l of in-racks]</u>
<u>On-Side</u>	<u>Dry</u>	<u>40</u>	<u>33 feet / 9 barrels</u>	<u>NA</u>	<u>SR / 286°F / Upright</u>	<u>16.8</u>	<u>24 @ 25</u>	<u>None</u>				<u>6 @ 4</u>
					<u>SR / 286°F / Upright</u>	<u>≥ 11.2</u>	<u>20 @ 7</u>	<u>Figures 4005.2.3.6(1) and 4005.2.3.6(2)</u>	<u>QR / 165°F / Upright</u>	<u>8.0 (115)</u>		<u>one l of in racks Or 12 @ [more one l of in-racks]</u>
<u>On-End</u>	<u>Wet</u>	<u>30</u>	<u>25 feet / 5 barrels</u>	<u>8</u>	<u>SR / 286°F / Any</u>	<u>≥ 11.2</u>	<u>50 @ 7</u>	<u>Figures 4005.2.3.6(3), 4005.2.3.6(4), 4005.2.3.6(5) and 4005.2.3.6(6)</u>	<u>QR / 165°F / Any</u>	<u>≥ 8.0 (115)</u>		<u>6 @ 4 [one l or 12 @ [more one l of in-racks]</u>

For SI: 1 foot = 304.8 mm; 1 pound per square inch (psi) = 6.895 kPa; K-Factor of 1 gpm/psi^{0.5} = 14.395 L/min/bar^{0.5}; °C = [(°F)-32]/1.8; 1 gallon per minute per square foot = 40.75 L/min/m².

Notes: QR – quick response sprinkler; SR – standard response sprinkler.

a. Sprinklers shall have a maximum coverage area of 100 square feet (9.3 m²).

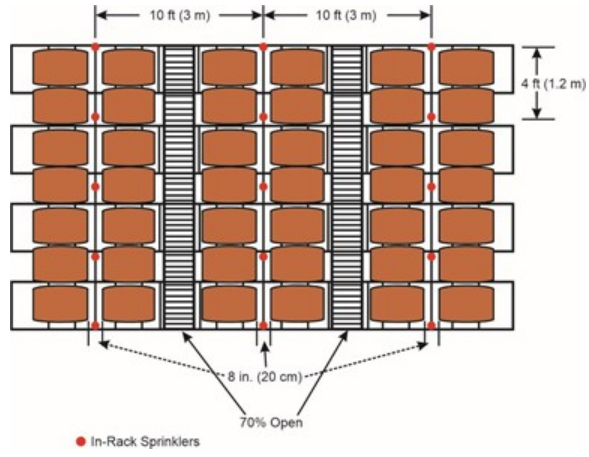


Figure 4005.2.3.6(1)
In-rack sprinkler layout for wooden barrels on their sides (plan view)

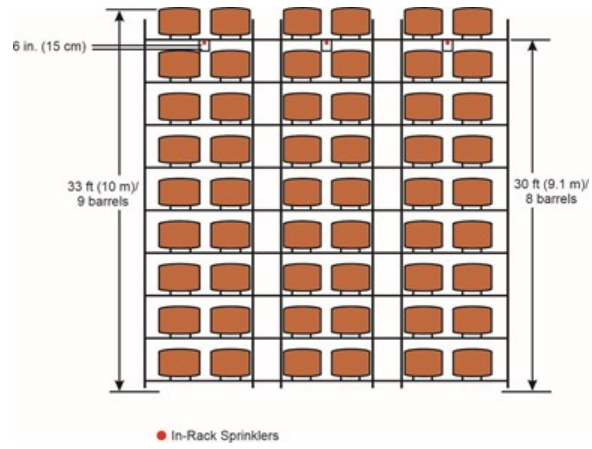


FIGURE 4005.2.3.6(2)

IN-RACK SPRINKLER LAYOUT FOR WOODEN BARRELS ON THEIR SIDES (ELEVATION VIEW)

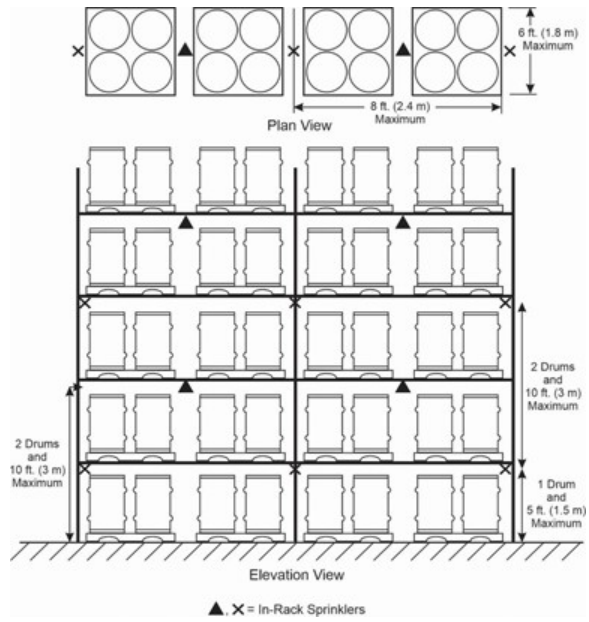


FIGURE 4005.2.3.6(3)
IN-RACK SPRINKLER LAYOUT FOR SINGLE ROW RACK OF ON-END WOODEN BARRELS

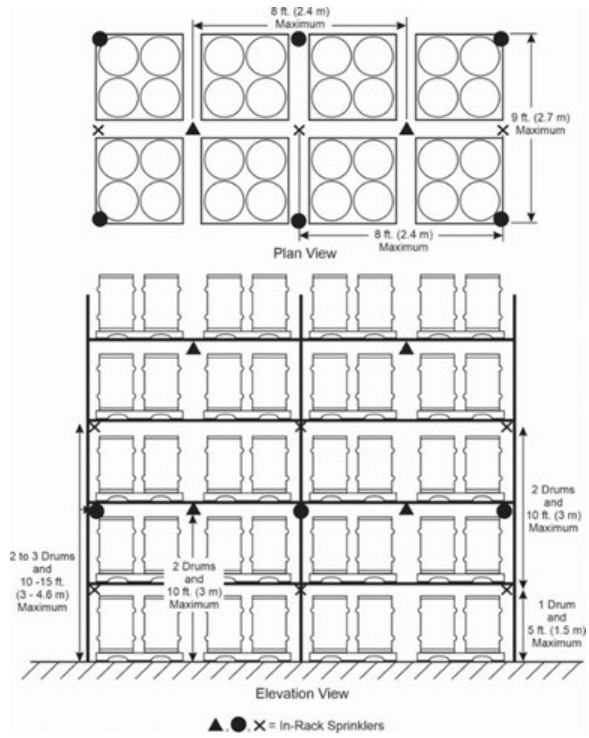


FIGURE 4005.2.3.6(4)
IN-RACK SPRINKLER LAYOUT FOR DOUBLE ROW RACK OF ON-END WOODEN BARRELS

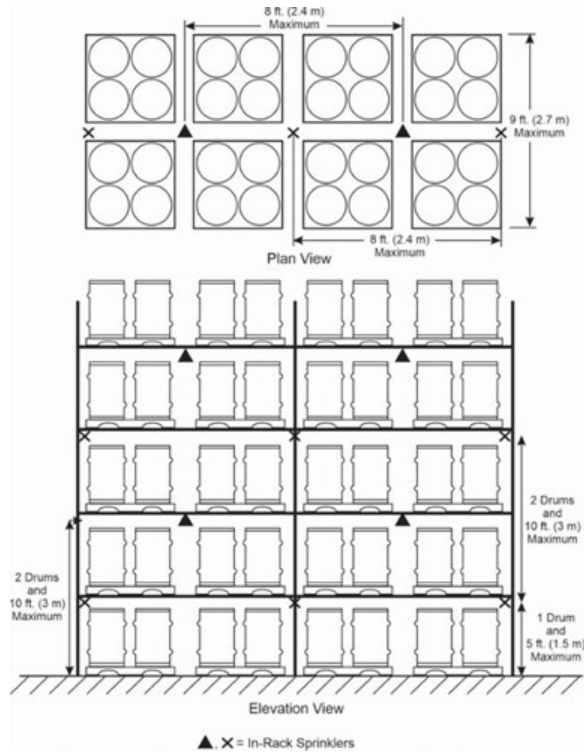


FIGURE 4005.2.3.6(5)
IN-RACK SPRINKLER LAYOUT FOR DOUBLE ROW RACK OF ON-END WOODEN BARRELS

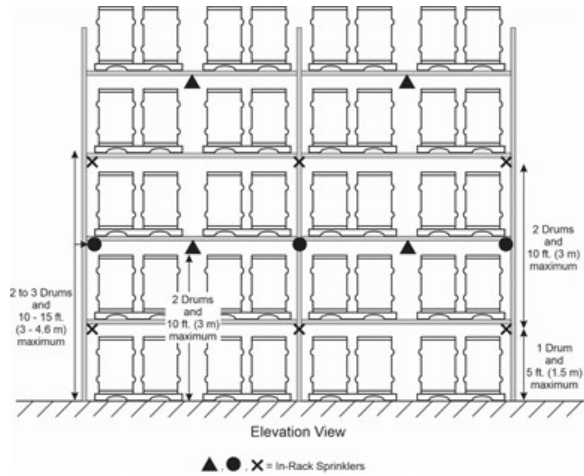


FIGURE 4005.2.3.6(6)
IN-RACK SPRINKLER LAYOUT FOR MULTIPLE ROW RACK OF ON-END WOODEN BARRELS

4005.3 Wine 20 percent or less alcohol content. The storage of wine in barrels with an alcohol content of 20 percent or less shall be protected by an approved automatic sprinkler system installed throughout in accordance with Section 903.3.1.1.

Revise as follows:

~~4005.2~~ **4005.4 Portable fire extinguishers.** Approved portable fire extinguishers shall be provided in accordance with Section 906.

F186-21 Part II

IBC: 306.2, 306.3, 311.2, 311.3

Proponents: Michael O'Brian, representing FCAC (fcac@iccsafe.org); Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

SECTION 306 FACTORY GROUP F.

Revise as follows:

306.2 Moderate-hazard factory industrial, Group F-1. Factory industrial uses that are not classified as Factory Industrial F-2 Low Hazard shall be classified as F-1 Moderate Hazard and shall include, but not be limited to, the following:

- Aircraft (manufacturing, not to include repair)
- Appliances
- Athletic equipment
- Automobiles and other motor vehicles
- Bakeries
- Beverages: over ~~16 percent~~ 20 percent alcohol content
- Bicycles
- Boats
- Brooms or brushes
- Business machines
- Cameras and photo equipment
- Canvas or similar fabric
- Carpets and rugs (includes cleaning)
- Clothing
- Construction and agricultural machinery
- Disinfectants
- Dry cleaning and dyeing
- Electric generation plants
- Electronics
- Energy storage systems (ESS) in dedicated use buildings
- Engines (including rebuilding)
- Food processing establishments and commercial kitchens not associated with restaurants, cafeterias and similar dining facilities more than 2,500 square feet (232 m²) in area
- Furniture
- Hemp products
- Jute products
- Laundries
- Leather products
- Machinery
- Metals
- Millwork (sash and door)
- Motion pictures and television filming (without spectators)
- Musical instruments
- Optical goods
- Paper mills or products
- Photographic film
- Plastic products
- Printing or publishing
- Recreational vehicles
- Refuse incineration
- Shoes
- Soaps and detergents
- Textiles
- Tobacco
- Trailers
- Upholstering
- Water/sewer treatment facilities
- Wood; distillation

- Woodworking (cabinet)

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~~ 20 percent alcohol content
- *Brick* and masonry
- Ceramic products
- Foundries
- Glass products
- Gypsum
- Ice
- Metal products (fabrication and assembly)

SECTION 311 STORAGE GROUP S.

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:

- *Aerosol products*, Levels 2 and 3
- Aircraft hangar (storage and repair)
- Bags: cloth, burlap and paper
- Bamboos and rattan
- Baskets
- Belting: canvas and leather
- Beverages over ~~16 percent~~ 20 percent alcohol content
- 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* specified in Table 307.1(1) (see Section 406.8)
- Photo engravings
- Resilient flooring
- *Self-service storage facility* (mini-storage)
- Silks
- Soaps
- Sugar
- Tires, bulk storage of
- Tobacco, cigars, cigarettes and snuff
- Upholstery and mattresses
- Wax candles

311.3 Low-hazard storage, Group S-2. Storage Group S-2 occupancies include, among others, buildings used for the storage of noncombustible materials such as products on wood pallets or in paper cartons with or without single thickness divisions; or in paper wrappings. Such products are permitted to have a negligible amount of plastic *trim*, such as knobs, handles or film wrapping. Group S-2 storage uses shall include, but not be limited to, storage of the following:

- Asbestos
- Beverages up to and including ~~16 percent~~ 20 percent alcohol

- Cement in bags
- Chalk and crayons
- Dairy products in nonwaxed coated paper containers
- Dry cell batteries
- Electrical coils
- Electrical motors
- Empty cans
- Food products
- Foods in noncombustible containers
- Fresh fruits and vegetables in nonplastic trays or containers
- Frozen foods
- Glass
- Glass bottles, empty or filled with noncombustible liquids
- *Gypsum board*
- Inert pigments
- Ivory
- Meats
- Metal cabinets
- Metal desks with plastic tops and *trim*
- Metal parts
- Metals
- Mirrors
- Oil-filled and other types of distribution transformers
- Public parking garages, open or enclosed
- Porcelain and pottery
- Stoves
- Talc and soapstones
- Washers and dryers

Reason Statement: This proposal provides guidance for storage and associated fire protection of alcoholic beverages both in warehouse and in small distillery facilities.

One of the conceptual changes is the threshold at which the percentage of alcohol results in a higher classification of hazard. Traditionally, beverages with an alcohol content greater than 16% were considered to present a higher level of hazard and were therefore placed into Group F-1 for manufacturing and packaging and Group S-1 for storage. Recent testing by FM Global demonstrates that the 16% threshold was too conservative and the threshold is being revised to 20%. Even recent revisions to Ch 32 list beverages in glass or ceramic containers with up to 20% alcohol content as a Class I commodity. The alcohol content does not raise the flammability of the liquid to an extent where additional levels of protection are necessary, and for the most part can be considered nonflammable or noncombustible. As a result, the manufacturing, packaging and storage of beverages with an alcohol content up to 20% will be classified as Group F-2 or S-2 as appropriate. This results in revisions to IBC Chapter 3 and the IFC occupancy definitions in Chapter 2.

The fire protection section provides specific sprinkler system design criteria. The requirements are based on the storage configuration:

- Palletized storage in Section 4005.1
- Rack storage in Section 4005.2

Palletized storage is then provided with design options in Section 4005.1.3:

- Provide draft curtains along the loading aisles
- Provide trench drains along each side of the loading aisles
- Provide straps to secure the barrels to the pallet
- There is a 4th option, which is to not provide a loading aisle at all. As stated in the charging sentence "palletized storage provided with a defined loading aisle..." In other words, the building or room is solid storage; it will have walkways to access the barrels but will not have a forklift loading aisle.

Each of these three designs provides a method of mitigating the spread of liquid or fire during a fire incident. These three protection features are again reference in Table 4005.1.4, and have an impact on the fire sprinkler system design.

The fire sprinkler design criteria is core of this code change. Table 4005.1.4 provides criteria for sprinkler system densities, storage heights and sprinkler selection. This design criteria is based on full-scale fire testing conducted by FM Global and presented in FM Data Sheet 7-29.

Section 4005.1.4 provides for a reduced level of sprinkler protection. Because of reduced level of protection, this section is limited to facilities no

greater than 7,500 square feet and with a ceiling height of no more than 24 feet. The intent of this reduction is to allow the small distilleries with a reasonable level of protection based on the reduced fire load per square foot and limited size.

Rack storage is covered in Section 4005.2. This section contains specific requirements again based on storage method:

- Barrels stored on their side
- Barrels stored on-end

The difference in configuration results in different sprinkler design criteria in Table 4005.2.3.6. Rack storage is allowed up to 33 feet in height. Figures have been included to depict the in-rack sprinkler locations.

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

BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

The FCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes with regard to fire and life safety in new and existing buildings and facilities as well as the protection of life and property in wildland urban interface areas. In 2020 and 2021 the Fire-CAC held multiple virtual meetings that were open to any interested party. In addition, there were numerous virtual specific working group meetings that were also open to any interested parties, to develop, discuss and debate the proposed changes. Related documentation and reports are posted on the FCAC website at: FCAC.

Bibliography: FM Global Property Loss Prevention Data Sheet 7-29, Ignitable Liquid Storage in Portable Containers, October 2020
Factory Mutual Insurance Company, Johnson, RI

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Chapter 40 of the Fire Code already requires an approved fire sprinkler system for new distilleries and storage facilities for distilled spirits. This code change does not increase that requirement but will provide guidance and consistency in how jurisdictions apply the fire sprinkler requirement.

FS39-21

IBC: 707.6, 707.7, 707.7.1

Proponents: David Renn, PE, SE, City and County of Denver, representing Code Change Committee of ICC Colorado Chapter (david.renn@denvergov.org)

2021 International Building Code

Revise as follows:

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

Exceptions:

1. Openings shall not be limited to 156 square feet (15 m²) where adjoining floor areas are equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
2. Openings shall not be limited to 156 square feet (15 m²) or an aggregate width of 25 percent of the length of the wall where the opening protective is a *fire door* serving enclosures for *exit access stairways and ramps*, and *interior exit stairways and ramps*.
3. Openings shall not be limited to 156 square feet (15 m²) or an aggregate width of 25 percent of the length of the wall where the opening protective has been tested in accordance with ASTM E119 or UL 263 and has a minimum *fire-resistance rating* not less than the *fire-resistance rating* of the wall.
4. *Fire window assemblies* permitted in *atrium* separation walls shall not be limited to a maximum aggregate width of 25 percent of the length of the wall.
5. Openings shall not be limited to 156 square feet (15 m²) or an aggregate width of 25 percent of the length of the wall where the opening protective is a *fire door assembly* in a *fire barrier* separating an enclosure for *exit access stairways and ramps*, and *interior exit stairways and ramps* from an *exit passageway* in accordance with Section 1023.3.1.

707.7 Penetrations. Penetrations of *fire barriers* shall comply with Section 714.

Delete without substitution:

~~**707.7.1 Prohibited penetrations.** Penetrations into enclosures for *exit access stairways and ramps*, *interior exit stairways and ramps*, and *exit passageways* shall be allowed only where permitted by Sections 1019, 1023.5 and 1024.6, respectively.~~

Reason Statement: This proposal is to delete unnecessary references to other sections that are currently incomplete and incorrect. Section 707.6 for fire barrier openings is intended to be for opening size and length limitations, but also has a sentence that says openings for stairways, ramps and exit passageways must also comply with 1019, 1023.4 and 1024.5. First, 1019 for exit access stairways and ramps does not have any opening requirements so this reference shouldn't be made. Second, the list of sections is incomplete since other sections also have additional opening requirements, such as 713.7.1 that prohibits openings in shafts other than those necessary for the purpose of the shaft. Specific opening requirements in other sections must be followed whether they are referenced in 707.6 or not, so it is proposed to remove the incorrect and incomplete references to avoid confusion and conflicts in the code. Similarly, Section 707.7.1 for prohibited penetrations in fire barriers references 1019, 1023.5 and 1024.6. Again, 1019 has no penetration requirements and the list is incomplete since it doesn't include 713.8.1 for prohibited penetrations in shaft enclosures.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This proposal is a clarification that will not change the cost of construction.

FS40-21

IBC: 707.6, 707.7, 707.7.1

Proponents: Stephen Thomas, representing Colorado Chapter ICC (stthomas@coloradocode.net)

2021 International Building Code

Revise as follows:

707.6 Openings. Openings in a *fire barrier* shall be protected in accordance with Section 716. Openings shall be limited to a maximum aggregate width of 25 percent of the length of the wall, and the maximum area of any single opening shall not exceed 156 square feet (15 m²). Openings in enclosures for ~~shafts exit access stairways and ramps~~, *interior exit stairways and ramps* and *exit passageways* shall also comply with Sections ~~713.7-1019~~, 1023.4 and 1024.5, respectively.

Exceptions:

1. Openings shall not be limited to 156 square feet (15 m²) where adjoining floor areas are equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
2. Openings shall not be limited to 156 square feet (15 m²) or an aggregate width of 25 percent of the length of the wall where the opening protective is a *fire door* serving enclosures for *exit access stairways and ramps*, and *interior exit stairways and ramps*.
3. Openings shall not be limited to 156 square feet (15 m²) or an aggregate width of 25 percent of the length of the wall where the opening protective has been tested in accordance with ASTM E119 or UL 263 and has a minimum *fire-resistance rating* not less than the *fire-resistance rating* of the wall.
4. *Fire window assemblies* permitted in *atrium* separation walls shall not be limited to a maximum aggregate width of 25 percent of the length of the wall.
5. Openings shall not be limited to 156 square feet (15 m²) or an aggregate width of 25 percent of the length of the wall where the opening protective is a *fire door assembly* in a *fire barrier* separating an enclosure for *exit access stairways and ramps*, and *interior exit stairways and ramps* from an *exit passageway* in accordance with Section 1023.3.1.

707.7 Penetrations. Penetrations of *fire barriers* shall comply with Section 714.

Revise as follows:

707.7.1 Prohibited penetrations. Penetrations into enclosures for ~~shafts exit access stairways and ramps~~, *interior exit stairways and ramps*, and *exit passageways* shall be allowed only where permitted by Sections ~~713.8.1-1019~~, 1023.5 and 1024.6, respectively.

Reason Statement: This proposal corrects references to other sections that have additional requirements for fire barrier openings and penetrations. These sections currently refer to Section 1019 for exit access stairways and ramps, but Section 1019 has no information for openings and penetrations so these references are deleted. References are added for shaft enclosures that have additional requirements for openings and penetrations.

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

This proposal corrects references to other sections that serve as pointers. Since compliance with these other sections is required regardless of pointers to these sections, there is no change to code requirements and no change in the cost of construction.

FS41-21

IBC: 707.6

Proponents: Michael O'Brian, representing FCAC (fcac@iccsafe.org)

2021 International Building Code

Revise as follows:

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

Exceptions:

1. Openings shall not be limited to 156 square feet (15 m²) where adjoining floor areas are equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
2. Openings shall not be limited to 156 square feet (15 m²) or an aggregate width of 25 percent of the length of the wall where the opening protective is a *fire door* serving enclosures for *exit access stairways* and *ramps*, and *interior exit stairways* and *ramps*.
3. Openings shall not be limited to 156 square feet (15 m²) or an aggregate width of 25 percent of the length of the wall where the opening protective has been tested in accordance with ASTM E119 or UL 263 and has a minimum *fire-resistance rating* not less than the *fire-resistance rating* of the wall.
4. *Fire window assemblies* permitted in *atrium* separation walls shall not be limited to a maximum aggregate width of 25 percent of the length of the wall.
5. Openings shall not be limited to 156 square feet (15 m²) or an aggregate width of 25 percent of the length of the wall where the opening protective is a *fire door assembly* in a *fire barrier* separating an enclosure for *exit access stairways* and *ramps*, and *interior exit stairways* and *ramps* from an *exit passageway* in accordance with Section 1023.3.1.
6. Openings providing entrance to an elevator car shall not be limited to 156 square feet (15 m²) or an aggregate width of 25 percent of the length of the wall where the opening protective is a fire door assembly in a fire barrier that is an elevator hoistway enclosure.

Reason Statement: The doors to the elevator in an elevator shaft are limited by the size of the associated cab and addressed by the safety standards in ASME A17.1. The size of the shaft is determined by the car size and the number of cars. While this size and length limitation is a literal requirement in fire barriers, it is not typically applied to elevator shafts.

This proposal is submitted by the the ICC Fire Code Action Committee (FCAC).
ICC Building Code Action Committee (BCAC) worked with the FCAC to develop this proposal.

The FCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes with regard to fire and life safety in new and existing buildings and facilities as well as the protection of life and property in wildland urban interface areas. In 2020 and 2021 the Fire-CAC held multiple virtual meetings that were open to any interested party. In addition, there were numerous virtual specific working group meetings that were also open to any interested parties, to develop, discuss and debate the proposed changes. Related documentation and reports are posted on the FCAC website at: FCAC.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is a clarification of existing criteria. This limitation was not typically applied to elevator shafts.

FS42-21

IBC: 707.6

Proponents: David Renn, PE, SE, City and County of Denver, representing Code Change Committee of ICC Colorado Chapter (david.renn@denvergov.org)

2021 International Building Code

Revise as follows:

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

Exceptions:

1. Openings shall not be limited to 156 square feet (15 m²) where adjoining floor areas are equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
2. Openings shall not be limited to 156 square feet (15 m²) or an aggregate width of 25 percent of the length of the wall where the opening protective is a *fire door* serving enclosures for *exit access stairways* and *ramps*, and *interior exit stairways* and *ramps*.
3. Openings shall not be limited to 156 square feet (15 m²) or an aggregate width of 25 percent of the length of the wall where the opening protective has been tested in accordance with ASTM E119 or UL 263 and has a minimum *fire-resistance rating* not less than the *fire-resistance rating* of the wall.
4. *Fire window assemblies* permitted in *atrium* separation walls shall not be limited to a maximum aggregate width of 25 percent of the length of the wall.
5. Openings shall not be limited to 156 square feet (15 m²) or an aggregate width of 25 percent of the length of the wall where the opening protective is a *fire door assembly* in a *fire barrier* separating an enclosure for *exit access stairways* and *ramps*, and *interior exit stairways* and *ramps* from an *exit passageway* in accordance with Section 1023.3.1.
6. Openings shall not be limited to an aggregate width of 25 percent of the length of the wall where opening serves a *shaft enclosure* in accordance with Section 713.
7. Openings shall not be limited to an aggregate width of 25 percent of the length of the wall where opening serves a chute access room in accordance with Section 713.13.3 or a chute discharge room in accordance with Section 713.13.4.

Reason Statement: This proposal adds two new exceptions to the 25% length limitation for fire barrier openings. This section already includes Exceptions 2 and 5 for openings into stair, ramp and exit passageway enclosures where it is not practical to meet this length limitation since the door opening typically takes up well over 25% of the length of the wall. The two new exceptions are proposed for the same reason - it is simply not practical to meet this length limitation. Exception 6 is for shaft enclosures where door openings typically exceed 25% of the length of a wall - consider elevator doors or shaft access doors that take up nearly the entire length of the wall. Exception 7 is for chute access rooms and discharge rooms. Chute access rooms are typically very small rooms and it is not practical to meet the 25% limitation for the door into these rooms without oversizing the room. Chute discharge rooms often have a large door opening to allow passage of trash or recycling dumpsters and it is not practical to meet the 25% limitation without oversizing the room.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. Due to impracticality of meeting the the 25% length limitation for shafts, chute access rooms and chute discharge rooms, it is believed that this requirement is typically not enforced so this proposal would not change the cost of construction.

FS47-21 Part I

IBC: 708.4.2, 713.11, 718.1, 718.3, 718.3.1, 718.4, 718.4.1

Proponents: Andrew Bevis, National Fire Sprinkler Association, representing National Fire Sprinkler Association (bevis@nfsa.org); Jeffrey Hugo, representing NFSA (hugo@nfsa.org)

THIS IS A 4 PART CODE CHANGE. PART I WILL BE HEARD BY THE FIRE SAFETY CODE COMMITTEE. PART II WILL BE HEARD BY THE FIRE CODE COMMITTEE. PART III WILL BE HEARD BY THE MECHANICAL CODE COMMITTEE. PART IV WILL BE HEARD BY THE PLUMBING CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Building Code

Revise as follows:

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

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

Exceptions:

1. Buildings equipped with an *automatic sprinkler system* installed throughout in accordance with Section 903.3.1.1, or in accordance with Section 903.3.1.2 provided that protection is provided in the space between the top of the *fire partition* and underside of the floor or roof sheathing, deck or slab above as required for systems complying with Section 903.3.1.1.
2. Where *corridor walls* provide a *sleeping unit* or *dwelling unit* separation, ~~draftstopping~~ draftstops shall only be required above one of the *corridor walls*.
3. In Group R-2 occupancies with fewer than four *dwelling units*, *fireblocking* and ~~draftstopping~~ draftstops shall not be required.
4. In Group R-2 occupancies up to and including four *stories* in height in buildings not exceeding 60 feet (18 288 mm) in height above *grade plane*, the *attic* space shall be subdivided by *draftstops* into areas not exceeding 3,000 square feet (279 m²) or above every two *dwelling units*, whichever is smaller.
5. In Group R-3 occupancies with fewer than three *dwelling units*, *fireblocking* and ~~draftstopping~~ draftstops shall not be required in floor assemblies.

713.11 Enclosure at the bottom. *Shafts* that do not extend to the bottom of the building or structure shall comply with one of the following:

1. Be enclosed at the lowest level with construction of the same *fire-resistance rating* as the *lowest floor* through which the *shaft* passes, but not less than the rating required for the *shaft enclosure*.
2. Terminate in a room having a use related to the purpose of the *shaft*. The room shall be separated from the remainder of the building by *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. The *fire-resistance rating* and opening protectives shall be not less than the protection required for the *shaft enclosure*.
3. Be protected by *approved fire dampers* installed in accordance with their listing at the *lowest floor* level within the *shaft enclosure*.

Exceptions:

1. The fire-resistance-rated room separation is not required, provided that the only openings in or penetrations of the *shaft enclosure* to the interior of the building occur at the bottom. The bottom of the *shaft* shall be closed off around the penetrating items with materials permitted by Section 718.3.1 for ~~draftstopping~~ draftstops, or the room shall be provided with an *approved automatic sprinkler system*.
2. A *shaft enclosure* containing a waste or linen chute shall not be used for any other purpose and shall discharge in a room protected in accordance with Section 713.13.4.
3. The fire-resistance-rated room separation and the protection at the bottom of the *shaft* are not required provided that there are no combustibles in the *shaft* and there are no openings or other penetrations through the *shaft enclosure* to the interior of the building.

718.1 General. *Fireblocking* and ~~draftstopping~~ draftstops shall be installed in combustible concealed locations in accordance with this section. *Fireblocking* shall comply with Section 718.2. ~~Draftstopping~~ draftstops in floor/ceiling spaces and attic spaces shall comply with Sections 718.3 and 718.4, respectively. The permitted use of combustible materials in concealed spaces of buildings of Type I or II construction shall be limited to the applications indicated in Section 718.5.

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

Exception: Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

718.3.1 ~~Draftstopping~~ Draftstop materials. ~~Draftstopping~~ Draftstop materials shall be not less than 1/2-inch (12.7 mm) *gypsum board*, 3/8-inch (9.5 mm) *wood structural panel*, 3/8-inch (9.5 mm) *particleboard*, 1-inch (25-mm) nominal lumber, cement *fiberboard*, batts or blankets of mineral wool or glass fiber, or other *approved* materials adequately supported. The integrity of *draftstops* shall be maintained.

718.4 ~~Draftstopping~~ Draftstops in attics. ~~Draftstopping~~ Draftstops shall be installed to subdivide *attic* spaces where required by Section 708.4.2. In other than Group R, ~~draftstopping~~ draftstops shall be installed to subdivide combustible *attic* spaces and combustible concealed roof spaces such that any horizontal area does not exceed 3,000 square feet (279 m²). *Ventilation* of concealed roof spaces shall be maintained in accordance with Section 1202.2.1.

Exception: Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

718.4.1 ~~Draftstopping~~ Draftstop materials. Materials utilized for ~~draftstopping~~ draftstops of *attic* spaces shall comply with Section 718.3.1.

FS47-21 Part II

IFC: 707.1

Proponents: Andrew Bevis, National Fire Sprinkler Association, representing National Fire Sprinkler Association (bevis.andrew1988@gmail.com); Jeffrey Hugo, representing NFSA (hugo@nfsa.org)

2021 International Fire Code

Revise as follows:

707.1 Fireblocking and ~~draftstopping~~ draftstops. Required *fireblocking* and ~~*draftstopping*~~ *draftstops* in combustibile concealed spaces shall be maintained to provide continuity and integrity of the construction.

Reason Statement: This is an editorial change. The word draftstopping is used multiple times throughout the IBC, IFC, IMC and IPC. This term is used with no definition. However, the term draftstop is a defined term in the IBC and IFC. These are the same terms. This development replaces all occurrences of draftstopping with the defined term of draftstop. Additionally, this development inserts the definition for draftstop into the IMC and IPC.

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

FS81-21

IBC: 716.2.2.1

Proponents: David Dodge, representing McKEON (ddodge@mckeondoor.com)

2021 International Building Code

Revise as follows:

716.2.2.1 Door assemblies in corridors and smoke barriers. *Fire door assemblies required to have a minimum fire protection rating of 20 minutes where located in corridor walls or smoke barrier walls having a fire-resistance rating in accordance with Table 716.1(2) shall be tested in accordance with NFPA 252 or UL 10C or UL 10D without the hose stream test.*

Exceptions:

1. Viewports that require a hole not larger than 1 inch (25 mm) in diameter through the door, have not less than a 0.25-inch-thick (6.4 mm) glass disc and the holder is of metal that will not melt out where subject to temperatures of 1,700° F (927° C).
2. *Corridor* door assemblies in occupancies of Group I-2 shall be in accordance with Section 407.3.1.
3. Unprotected openings shall be permitted for *corridors* in multitheater complexes where each motion picture auditorium has not fewer than one-half of its required *exit* or *exit access doorways* opening directly to the exterior or into an *exit passageway*.
4. Horizontal sliding doors in *smoke barriers* that comply with Sections 408.6 and 408.8.4 in occupancies in Group I-3.

Reason Statement: Section 716.2.2.1 allows door assemblies that do not complete a hose stream test to be used in applications where a minimum 20-minute opening protective fire rating is required. Since Section 716.4 confirms the fire protective curtain technology is tested without the hose stream, integrity test, in accordance with UL 10D, the maximum fire label that can be placed upon any of its applications is 20 minutes. This minor, somewhat editorial-type code change confirms UL10D is the same criteria as UL10C without the hose stream and specifically assigns fire protective curtains their rightful place in the IBC. This clarification confirms the intent of the scope statement in UL 10D as follows:

FIRE TESTS OF FIRE-PROTECTIVE CURTAIN ASSEMBLIES - UL 10D

INTRODUCTION

1 Scope

1.1 These requirements cover the evaluation of fire-protective curtain assemblies intended to provide supplemental, passive fire protection as part of an engineered fire protection system. Fire-protective curtain assemblies are horizontally or vertically oriented. Horizontally or vertically oriented fire-protective curtain assemblies provide nonstructural separation only, and are not intended to be substituted for structural hourly rated partitions or opening protectives that have been tested for fire endurance and hose stream performance.

The current language in Section 716.4, which allows for the use of fire protective curtains, is open to interpretation and potential over-reaching regarding specific applications as opening protectives. This concern was voiced at the final action hearings for the last cycle and it was suggested that corrections are definitely needed and could be made in this cycle. This code change addresses those concerns clarifying the intended use of the fire protective curtain technology as opening protectives rated not greater than 20 minutes without hose stream in accordance with UL 10D.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This code change is a clarification regarding compliance with a test standard.

FS82-21

IBC: 716.2.2.1

Proponents: Curtis Gonzales, Smoke Guard, Inc., representing Smoke Guard, Inc.; Amanda Hickman, The Hickman Group, representing SmokeGuard, Inc. (amanda@thehickmangroup.com)

2021 International Building Code

Revise as follows:

716.2.2.1 ~~Door~~ Opening protective assemblies in corridors and smoke barriers. *Fire door assemblies or fire protective curtain assemblies* required to have a minimum *fire protection rating* of 20 minutes where located in *corridor walls* or *smoke barrier walls* having a *fire-resistance rating* in accordance with Table 716.1(2) shall be tested in accordance with NFPA 252 or UL 10C without the hose stream test, or UL 10D.

Exceptions:

1. Viewports that require a hole not larger than 1 inch (25 mm) in diameter through the door, have not less than a 0.25-inch-thick (6.4 mm) glass disc and the holder is of metal that will not melt out where subject to temperatures of 1,700° F (927° C).
2. *Corridor* door assemblies in occupancies of Group I-2 shall be in accordance with Section 407.3.1.
3. Unprotected openings shall be permitted for *corridors* in multitheater complexes where each motion picture auditorium has not fewer than one-half of its required *exit* or *exit access doorways* opening directly to the exterior or into an *exit passageway*.
4. Horizontal sliding doors in *smoke barriers* that comply with Sections 408.6 and 408.8.4 in occupancies in Group I-3.
5. *Fire protective curtain assemblies* shall be permitted for use when listed in accordance with UL 10D. The curtain shall be installed and maintained in accordance with NFPA 80.

Reason Statement: In the 2021 code cycle, UL 10D and the definition for *Fire Protective Curtain Assemblies* were added to the code. This proposal clarifies the common applications for *Fire Protective Curtain Assemblies*. "UL 10D Standard for Fire Tests of Fire-Protective Curtain Assemblies", Edition 2 is an ANSI approved standard for the listing of such Fire-Protective Curtain Assemblies. Fire Protection Curtains can and do serve many 20-minute fire protection applications in corridors and smoke barriers.

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

This code change proposal will not increase or decrease the cost of construction because it adds another option for code compliance.

FS83-21

IBC: 716.2.2.1, 1020.2.1; (IFC[BE] 1020.2.1)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org); Michael O'Brian, representing FCAC (fcac@iccsafe.org)

2021 International Building Code

Revise as follows:

716.2.2.1 Door assemblies in corridors and smoke barriers. *Fire door assemblies required to have a minimum fire protection rating of 20 minutes where located in corridor walls or smoke barrier walls having a fire-resistance rating in accordance with Table 716.1(2) shall be tested in accordance with NFPA 252 or UL 10C without the hose stream test.*

Exceptions:

1. Viewports that require a hole not larger than 1 inch (25 mm) in diameter through the door, have not less than a 0.25-inch-thick (6.4 mm) glass disc and the holder is of metal that will not melt out where subject to temperatures of 1,700° F (927° C).
2. *Corridor door assemblies in occupancies of Group I-2 shall be in accordance with Section 407.3.1.*
3. Unprotected openings shall be permitted for *corridors* in multitheater complexes where each motion picture auditorium has not fewer than one-half of its required *exit or exit access doorways* opening directly to the exterior or into an *exit passageway*.
4. Horizontal sliding doors in *smoke barriers* that comply with Sections 408.6 and 408.8.4 in occupancies in Group I-3.
5. In corridor walls required to have a fire-resistance rating in accordance with Section 1020.2, an elevator hoistway door opening directly into the corridor is not required to meet the smoke and draft control door assembly requirements in this section where the elevator connect 3 stories or less and the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

1020.2.1 Hoistway opening protection. Elevator hoistway doors in elevators hoistway enclosures required to be fire resistance rated shall be protected in accordance with Section 716. Elevator hoistway ~~doors~~ openings shall also be protected in accordance with Section ~~3006.2.1~~ 3006.2.

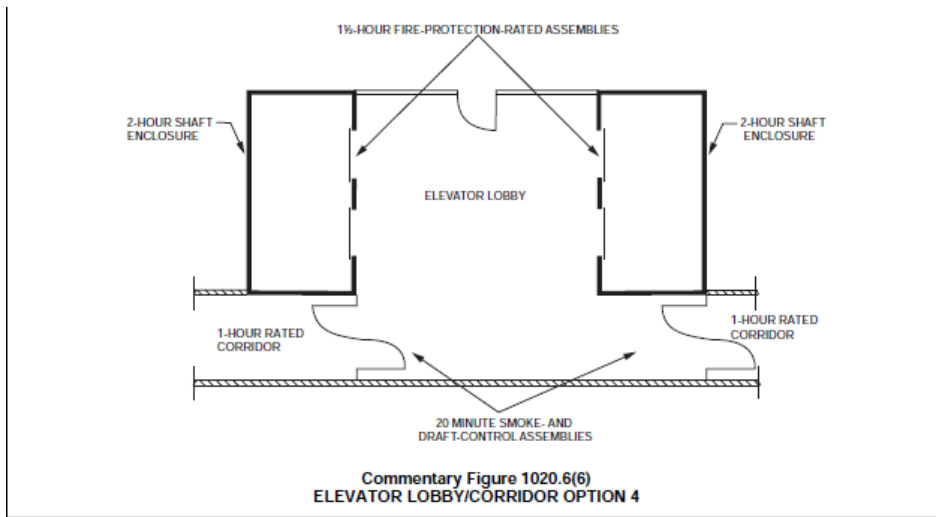
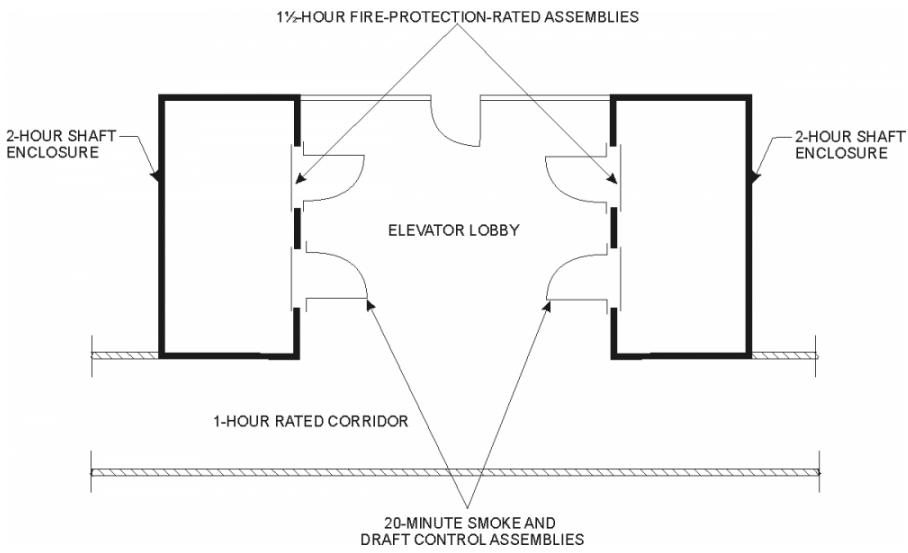
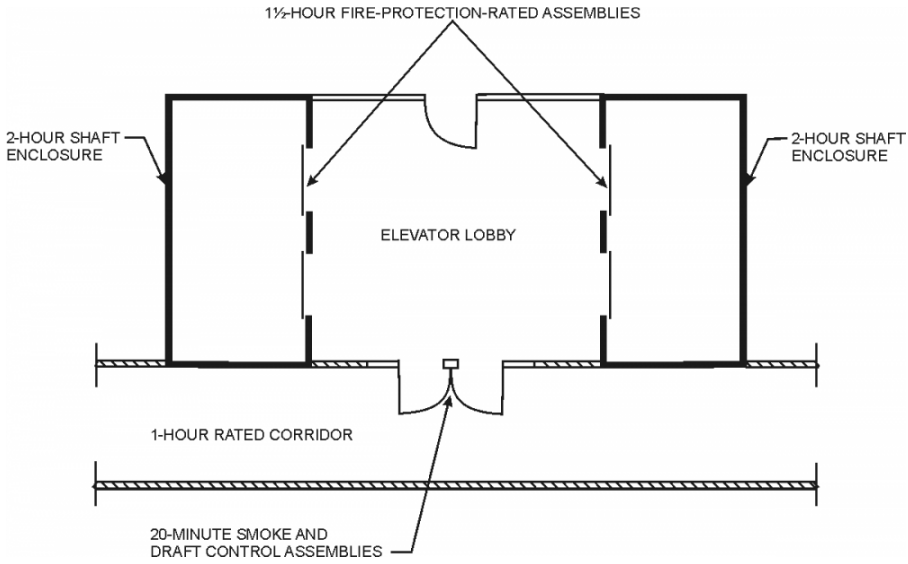
Reason Statement: The intent of this proposal is to allow for two and three story Group R and Group I-1 buildings that do not have to have elevator lobbies to not have smoke and draft control at the doors. Even with sprinklers, these buildings have fire resistance rated corridors. Elevators are within vertical shafts and are sent to fire barrier protection requirements in Section 712.1.1, 713.14 and 3002.1. Section 707.6 in fire barriers references Section 716 for opening protection of all openings, which would include door through the shaft to allows entrance into the elevator car. Elevator car doors often open directly into a rated corridor, so Section 716.2.2.1 is applicable to those elevator doors.

The new exception 5 in Section 716.2.2.1 is to allow for elevators in low rise building to not to have to meet the smoke and draft requirements of opening protectives in corridors. While many elevator hoistway/vertical shaft doors are tested and labeled for the 1-hour or 1 1/2-hour fire resistance rating (see Section 716.2.1), very few, if any of the doors typically sold in the United States will also meet the smoke and draft requirements (see Section 716.2.2.1.1) that would allow them to open directly into a fire-resistance-rated corridor.

Current text literally results in elevator lobbies or other protection in front of the elevator doors in all rated corridors. There would not be significant stack effect for the movement of smoke with this minimal allowance. The code currently allows other floor vertical openings in Sections 712 and 1019.3 for four stories, so how is the elevator shaft more of a hazard? This allowance would make these buildings then require elevator lobbies/elevator opening protect at the same point, thus coordinating Section 716 and 3006.

The pointer in Section 1020.2.1 is in recognition that elevator entrance doors in rated corridors have to meet both criteria.

Below are what is currently required in even 2 story building with rated corridors.



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

BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

The FCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes with regard to fire and life safety in new and existing buildings and facilities as well as the protection of life and property in wildland urban interface areas. In 2020 and 2021 the Fire-CAC held multiple virtual meetings that were open to any interested party. In addition, there were numerous virtual specific working group meetings that were also open to any interested parties, to develop, discuss and debate the proposed changes. Related documentation and reports are posted on the FCAC website at: FCAC.

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

This will be a decrease in some 2 and 3 story buildings. The shaft would need a fire resistant elevator entrance door, but would not require a lobby or other protection options to meet the smoke and draft control.

FS85-21

IBC: 716.2.6.1

Proponents: Michael O'Brian, representing FCAC (fcac@iccsafe.org); Marc Levitan, representing ICC 500 Storm Shelter Standard Committee (marc.levitan@nist.gov)

2021 International Building Code

Revise as follows:

716.2.6.1 Door closing. *Fire doors* shall be latching and self- or automatic-closing in accordance with this section.

Exceptions:

1. *Fire doors* located in common walls separating *sleeping units* in Group R-1 shall be permitted without automatic- or *self-closing* devices.
2. The elevator car doors and the associated hoistway enclosure doors at the floor level designated for recall in accordance with Section 3003.2 shall be permitted to remain open during Phase I emergency recall operation.
3. Fire doors required solely for compliance with ICC 500 shall not be required to be self-closing or automatic-closing.

Reason Statement: The ICC 500 *Standard for the Design and Construction of Storm Shelters* allows a room or area within a larger building to be designed as a storm shelter, and requires the walls separating the storm shelter from the remaining portions of the host building to be constructed as 2-hour fire barriers, even if the IBC does not require a 2 hour rating.

The 2020 edition of ICC 500 provided an exception to the requirement for door closers in the situation where the fire-resistance rated wall is only required to separate a storm shelter from a host building. Any doors in the wall would still have to be fire-rated, but they would not have to include self or automatic closers. In a situation where large numbers of people need to enter the shelter quickly, such as for a tornado warning, exempting these doors from closers would allow for a constant flow of occupants seeking shelter without being interrupted by the door closing whenever someone releases the door.

Once people have entered the shelter, all openings can be secured from the inside by the personnel responsible for operating the shelter, or if necessary, by shelter occupants. Once the shelter doors are closed, the openings in the fire-resistance rated walls would be protected. When the storm is over, no closers would also allow for a smoother flow for egress.

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

The FCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes with regard to fire and life safety in new and existing buildings and facilities as well as the protection of life and property in wildland urban interface areas. In 2020 and 2021 the Fire-CAC held multiple virtual meetings that were open to any interested party. In addition, there were numerous virtual specific working group meetings that were also open to any interested parties, to develop, discuss and debate the proposed changes. Related documentation and reports are posted on the FCAC website at: FCAC.

The ICC 500 (Standard for the Design and Construction of Storm Shelters) development committee has held several virtual meetings during the last two years to develop the 202) edition. In addition, there were numerous virtual Working Group meetings. All meetings included members of the committee as well as interested parties. Related documents and reports are posted on the ICC 500 website at ICC 500.

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

Will not increase the cost of construction if anything it lowers the construction cost as the requirements for door closers are being reduced.

FS97-21 Part I

IBC: TABLE 721.1(2), FIGURE 722.5.1(2)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org); Michael O'Brian, representing FCAC (fcac@iccsafe.org)

THIS IS A 3 PART CODE CHANGE. PART I WILL BE HEARD BY THE FIRE SAFETY CODE COMMITTEE. PART II WILL BE HEARD BY THE FIRE CODE COMMITTEE. PART III WILL BE HEARD BY THE PROPERTY MAINTENANCE/ZONING CODE COMMITTEE. COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Building Code

Revise as follows:

TABLE 721.1(2)
RATED FIRE-RESISTANCE PERIODS FOR VARIOUS WALLS AND PARTITIONS^{a, o, p}

MATERIAL	ITEM NUMBER	CONSTRUCTION	MINIMUM FINISHED THICKNESS FACE-TO-FACE ^b (inches)			
			4 hours	3 hours	2 hours	1 hour
1. Brick of clay or shale	1-1.1	Solid brick of clay or shale. ^c	6	4.9	3.8	2.7
	1-1.2	Hollow brick, not filled.	5.0	4.3	3.4	2.3
	1-1.3	Hollow brick unit wall, grout or filled with perlite vermiculite or expanded shale aggregate.	6.6	5.5	4.4	3.0
	1-2.1	4" nominal thick units not less than 75 percent solid backed with a hat-shaped metal furring channel ³ / ₄ " thick formed from 0.021" sheet metal attached to the brick wall on 24" centers with approved fasteners, and ¹ / ₂ " Type X gypsum wallboard attached to the metal furring strips with 1"-long Type S screws spaced 8" on center.	—	—	5 ^d	—
2. Combination of clay brick and load-bearing hollow clay tile	2-1.1	4" solid brick and 4" tile (not less than 40 percent solid).	—	8	—	—
	2-1.2	4" solid brick and 8" tile (not less than 40 percent solid).	12	—	—	—
3. Concrete masonry units	3-1.1 ^{f, g}	Expanded slag or pumice.	4.7	4.0	3.2	2.1
	3-1.2 ^{f, g}	Expanded clay, shale or slate.	5.1	4.4	3.6	2.6
	3-1.3 ^f	Limestone, cinders or air-cooled slag.	5.9	5.0	4.0	2.7
	3-1.4 ^{f, g}	Calcareous or siliceous gravel.	6.2	5.3	4.2	2.8
4. Solid concrete ^{h, i}	4-1.1	Siliceous aggregate concrete.	7.0	6.2	5.0	3.5
		Carbonate aggregate concrete.	6.6	5.7	4.6	3.2
		Sand-lightweight concrete.	5.4	4.6	3.8	2.7
		Lightweight concrete.	5.1	4.4	3.6	2.5
5. Glazed or unglazed facing tile, nonload-bearing	5-1.1	One 2" unit cored 15 percent maximum and one 4" unit cored 25 percent maximum with ³ / ₄ " mortar-filled collar joint. Unit positions reversed in alternate courses.	—	6 ³ / ₈	—	—
	5-1.2	One 2" unit cored 15 percent maximum and one 4" unit cored 40 percent maximum with ³ / ₄ " mortar-filled collar joint. Unit positions side with ³ / ₄ " gypsum plaster. Two wythes tied together every fourth course with No. 22 gage corrugated metal ties.	—	6 ³ / ₄	—	—
	5-1.3	One unit with three cells in wall thickness, cored 29 percent maximum.	—	—	6	—
	5-1.4	One 2" unit cored 22 percent maximum and one 4" unit cored 41 percent maximum with ¹ / ₄ " mortar-filled collar joint. Two wythes tied together every third course with 0.030"(No. 22 galvanized sheet steel gage) corrugated metal ties.	—	—	6	—
	5-1.5	One 4" unit cored 25 percent maximum with ³ / ₄ " gypsum plaster on one side.	—	—	4 ³ / ₄	—
	5-1.6	One 4" unit with two cells in wall thickness, cored 22 percent maximum.	—	—	—	4
	5-1.7	One 4" unit cored 30 percent maximum with ³ / ₄ " vermiculite gypsum plaster on one side.	—	—	4 ¹ / ₂	—
	5-1.8	One 4" unit cored 39 percent maximum with ³ / ₄ " gypsum plaster on one side.	—	—	—	4 ¹ / ₂
6. Solid gypsum plaster	6-1.1	³ / ₄ " by 0.055" (No. 16 carbon sheet steel gage) vertical cold-rolled channels, 16" on center with 2.6-pound flat metal lath applied to one face and tied with 0.049" (No. 18 B.W. gage) wire at 6" spacing. Gypsum plaster each side mixed 1:2 by weight, gypsum to sand aggregate.	—	—	—	2 ^d
	6-1.2	³ / ₄ " by 0.05" (No. 16 carbon sheet steel gage) cold-rolled channels 16" on center with metal lath applied to one face and tied with 0.049" (No. 18 B.W. gage) wire at 6" spacing. Perlite or vermiculite gypsum plaster each side. For three-coat work, the plaster mix for the second coat shall not exceed 100 pounds of gypsum to 2 ¹ / ₂ cubic feet of aggregate for the 1-hour system.	—	—	2 ¹ / ₂ ^d	2 ^d
	6-1.3	³ / ₄ " by 0.055" (No. 16 carbon sheet steel gage) vertical cold-rolled channels, 16" on center with ³ / ₈ " gypsum lath applied to one face and attached with sheet metal clips. Gypsum plaster each side mixed 1:2 by weight, gypsum to sand aggregate.	—	—	—	2 ^d
		Studless with ¹ / ₂ " full-length plain gypsum lath and gypsum plaster each side. Plaster				

	6-2.1	mixed 1:1 for scratch coat and 1:2 for brown coat, by weight, gypsum to sand aggregate.	—	—	—	2 ^d
	6-2.2	Studless with 1/2" full-length plain gypsum lath and perlite or vermiculite gypsum plaster each side.	—	—	2 1/2 ^d	2 ^d
	6-2.3	Studless partition with 3/8" rib metal lath installed vertically adjacent edges tied 6" on center with No. 18 gage wire ties, gypsum plaster each side mixed 1:2 by weight, gypsum to sand aggregate.	—	—	—	2 ^d
7. Solid perlite and Portland cement	7-1.1	Perlite mixed in the ratio of 3 cubic feet to 100 pounds of Portland cement and machine applied to stud side of 1 1/2" mesh by 0.058-inch (No. 17 B.W. gage) paper-backed woven wire fabric lath wire-tied to 4"-deep steel trussed wire studs 16" on center. Wire ties of 0.049" (No. 18 B.W. gage) galvanized steel wire 6" on center vertically.	—	—	3 1/8 ^d	—
8. Solid neat wood fibered gypsum plaster	8-1.1	3/4" by 0.055-inch (No. 16 carbon sheet steel gage) cold-rolled channels, 12" on center with 2.5-pound flat metal lath applied to one face and tied with 0.049" (No. 18 B.W.gage) wire at 6" spacing. Neat gypsum plaster applied each side.	—	—	2 ^d	—
9. Solid wallboard partition	9-1.1	One full-length layer 1/2" Type X gypsum wallboard ^e laminated to each side of 1" full-length V-edge gypsum coreboard with approved laminating compound. Vertical joints of face layer and coreboard staggered not less than 3".	—	—	2 ^d	—
10. Hollow (studless) gypsum wallboard partition	10-1.1	One full-length layer of 5/8" Type X gypsum wallboard ^e attached to both sides of wood or metal top and bottom runners laminated to each side of 1" x 6" full-length gypsum coreboard ribs spaced 2" on center with approved laminating compound. Ribs centered at vertical joints of face plies and joints staggered 24" in opposing faces. Ribs may <u>shall be permitted to</u> be recessed 6" from the top and bottom.	—	—	—	2 1/4 ^d
	10-1.2	1" regular gypsum V-edge full-length backing board attached to both sides of wood or metal top and bottom runners with nails or 1 5/8" drywall screws at 24" on center. Minimum width of runners 1 5/8". Face layer of 1/2" regular full-length gypsum wallboard laminated to outer faces of backing board with approved laminating compound.	—	—	4 5/8 ^d	—
11. Noncombustible studs—interior partition with plaster each side	11-1.1	3 1/4" x 0.044" (No. 18 carbon sheet steel gage) steel studs spaced 24" on center. 5/8" gypsum plaster on metal lath each side mixed 1:2 by weight, gypsum to sand aggregate.	—	—	—	4 3/4 ^d
	11-1.2	3 3/8" x 0.055" (No. 16 carbon sheet steel gage) approved nailable ^k studs spaced 24" on center. 5/8" neat gypsum wood-fibered plaster each side over 3/8" rib metal lath nailed to studs with 6d common nails, 8" on center. Nails driven 1 1/4" and bent over.	—	—	5 5/8	—
	11-1.3	4" x 0.044" (No. 18 carbon sheet steel gage) channel-shaped steel studs at 16" on center. On each side approved resilient clips pressed onto stud flange at 16" vertical spacing, 1/4" pencil rods snapped into or wire tied onto outer loop of clips, metal lath wire-tied to pencil rods at 6" intervals, 1" perlite gypsum plaster, each side.	—	7 5/8 ^d	—	—
	11-1.4	2 1/2" x 0.044" (No. 18 carbon sheet steel gage) steel studs spaced 16" on center. Wood fibered gypsum plaster mixed 1:1 by weight gypsum to sand aggregate applied on 3/4"-pound metal lath wire tied to studs, each side. 3/4" plaster applied over each face, including finish coat.	—	—	4 1/4 ^d	—
12. Wood studs—interior partition with plaster each side	12-1.1 ^{l, m}	2" x 4" wood studs 16" on center with 5/8" gypsum plaster on metal lath. Lath attached by 4d common nails bent over or No. 14 gage by 1 1/4" by 3/4" crown width staples spaced 6" on center. Plaster mixed 1:1 1/2 for scratch coat and 1:3 for brown coat, by weight, gypsum to sand aggregate.	—	—	—	5 1/8
	12-1.2 ^l	2" x 4" wood studs 16" on center with metal lath and 7/8" neat wood-fibered gypsum plaster each side. Lath attached by 6d common nails, 7" on center. Nails driven 1 1/4" and bent over.	—	—	5 1/2 ^d	—
	12-1.3 ^l	2" x 4" wood studs 16" on center with 3/8" perforated or plain gypsum lath and 1/2" gypsum plaster each side. Lath nailed with 1 1/8" by No. 13 gage by 19/64" head plasterboard blued nails, 4" on center. Plaster mixed 1:2 by weight, gypsum to sand aggregate.	—	—	—	5 1/4
	12-1.4 ^l	2" x 4" wood studs 16" on center with 3/8" Type X gypsum lath and 1/2" gypsum plaster each side. Lath nailed with 1 1/8" by No. 13 gage by 19/64" head plasterboard blued nails, 5" on center. Plaster mixed 1:2 by weight, gypsum to sand aggregate.	—	—	—	5 1/4
	12-1.4	0.018" (No. 25 carbon sheet steel gage) channel-shaped studs 24" on center with one full-length layer of 5/8" Type X gypsum wallboard ^e applied vertically attached with 1"-long No. 6 dry wall screws to each stud. Screws are 8" on center around the perimeter and 12" on center on the intermediate stud. Where applied horizontally, the Type X gypsum				6 7/8 ^d

13. Noncombustible studs—interior partition with gypsum wallboard each side	13-1.1	12" on center on the intermediate stud. Where applied horizontally, the Type X gypsum wallboard shall be attached to 3 ⁵ / ₈ " studs and the horizontal joints shall be staggered with those on the opposite side. Screws for the horizontal application shall be 8" on center at vertical edges and 12" on center at intermediate studs.	—	—	—	2 ¹ / ₈ "
	13-1.2	0.018" (No. 25 carbon sheet steel gage) channel-shaped studs 25" on center with two full-length layers of 1/2" Type X gypsum wallboard ^e applied vertically each side. First layer attached with 1"-long, No. 6 drywall screws, 8" on center around the perimeter and 12" on center on the intermediate stud. Second layer applied with vertical joints offset one stud space from first layer using 1 ⁵ / ₈ " long, No. 6 drywall screws spaced 9" on center along vertical joints, 12" on center at intermediate studs and 24" on center along top and bottom runners.	—	—	3 ⁵ / ₈ " ^d	—
	13-1.3	0.055" (No. 16 carbon sheet steel gage) approved nailable metal studs ^e 24" on center with full-length 5/8" Type X gypsum wallboard ^e applied vertically and nailed 7" on center with 6d cement-coated common nails. Approved metal fastener grips used with nails at vertical butt joints along studs.	—	—	—	4 ⁷ / ₈
14. Wood studs—interior partition with gypsum wallboard each side	14-1.1 ^{h, m}	2" × 4" wood studs 16" on center with two layers of 3/8" regular gypsum wallboard ^e each side, 4d cooler ⁿ or wallboard ⁿ nails at 8" on center first layer, 5d cooler ⁿ or wallboard ⁿ nails at 8" on center second layer with laminating compound between layers, joints staggered. First layer applied full length vertically, second layer applied horizontally or vertically.	—	—	—	5
	14-1.2 ^{l, m}	2" × 4" wood studs 16" on center with two layers 1/2" regular gypsum wallboard ^e applied vertically or horizontally each side ^k , joints staggered. Nail base layer with 5d cooler ⁿ or wallboard ⁿ nails at 8" on center face layer with 8d cooler ⁿ or wallboard ⁿ nails at 8" on center.	—	—	—	5 ¹ / ₂
	14-1.3 ^{l, m}	2" × 4" wood studs 24" on center with 5/8" Type X gypsum wallboard ^e applied vertically or horizontally nailed with 6d cooler ⁿ or wallboard ⁿ nails at 7" on center with end joints on nailing members. Stagger joints each side.	—	—	—	4 ³ / ₄
	14-1.4 ^l	2" × 4" fire-retardant-treated wood studs spaced 24" on center with one layer of 5/8" Type X gypsum wallboard ^e applied with face paper grain (long dimension) parallel to studs. Wallboard attached with 6d cooler ⁿ or wallboard ⁿ nails at 7" on center.	—	—	—	4 ³ / ₄ " ^d
	14-1.5 ^{l, m}	2" × 4" wood studs 16" on center with two layers 5/8" Type X gypsum wallboard ^e each side. Base layers applied vertically and nailed with 6d cooler ⁿ or wallboard ⁿ nails at 9" on center. Face layer applied vertically or horizontally and nailed with 8d cooler ⁿ or wallboard ⁿ nails at 7" on center. For nail-adhesive application, base layers are nailed 6" on center. Face layers applied with coating of approved wallboard adhesive and nailed 12" on center.	—	—	6	—
	14-1.6 ^l	2" × 3" fire-retardant-treated wood studs spaced 24" on center with one layer of 5/8" Type X gypsum wallboard ^e applied with face paper grain (long dimension) at right angles to studs. Wallboard attached with 6d cement-coated box nails spaced 7" on center.	—	—	—	3 ⁵ / ₈ " ^d
	15-1.1 ^{l, m}	Exterior surface with 3/4" drop siding over 1/2" gypsum sheathing on 2" × 4" wood studs at 16" on center, interior surface treatment as required for 1-hour-rated exterior or interior 2" × 4" wood stud partitions. Gypsum sheathing nailed with 1 ³ / ₄ " by No.11 gage by 7/16" head galvanized nails at 8" on center. Siding nailed with 7d galvanized smooth box nails.	—	—	—	Varies
15-1.2 ^{l, m}	2" × 4" wood studs 16" on center with metal lath and 3/4" cement plaster on each side. Lath attached with 6d common nails 7" on center driven to 1" minimum penetration and bent over. Plaster mix 1:4 for scratch coat and 1:5 for brown coat, by volume, cement to sand.	—	—	—	5 ³ / ₈	
15-1.3 ^{l, m}	2" × 4" wood studs 16" on center with 7/8" cement plaster (measured from the face of studs) on the exterior surface with interior surface treatment as required for interior wood stud partitions in this table. Plaster mix 1:4 for scratch coat and 1:5 for brown coat, by volume, cement to sand.	—	—	—	Varies	
15-1.4	3 ⁵ / ₈ " No. 16 gage noncombustible studs 16" on center with 7/8" cement plaster (measured from the face of the studs) on the exterior surface with interior surface treatment as required for interior, nonbearing, noncombustible stud partitions in this table. Plaster mix 1:4 for scratch coat and 1:5 for brown coat, by volume, cement to sand.	—	—	—	Varies ^d	
	2 ¹ / ₄ " × 3 ³ / ₄ " clay face brick with cored holes over 1/2" gypsum sheathing on exterior surface of 2" × 4" wood studs at 16" on center and two layers 5/8" Type X gypsum					

15. Exterior or interior walls	15-1.5 ^m	wallboard ^e on interior surface. Sheathing placed horizontally or vertically with vertical joints over studs nailed 6" on center with 1 ³ / ₄ " x No. 11 gage by 7 ⁷ / ₁₆ " head galvanized nails. Inner layer of wallboard placed horizontally or vertically and nailed 8" on center with 6d cooler ⁿ or wallboard ⁿ nails. Outer layer of wallboard placed horizontally or vertically and nailed 8" on center with 8d cooler ⁿ or wallboard ⁿ nails. Joints staggered with vertical joints over studs. Outer layer joints taped and finished with compound. Nail heads covered with joint compound. 0.035 inch (No. 20 galvanized sheet gage) corrugated galvanized steel wall ties 3 ³ / ₄ " by 6 ⁵ / ₈ " attached to each stud with two 8d cooler ⁿ or wallboard ⁿ nails every sixth course of bricks.	—	—	10	—
	15-1.6 ^{l, m}	2" x 6" fire-retardant-treated wood studs 16" on center. Interior face has two layers of 5 ⁵ / ₈ " Type X gypsum with the base layer placed vertically and attached with 6d box nails 12" on center. The face layer is placed horizontally and attached with 8d box nails 8" on center at joints and 12" on center elsewhere. The exterior face has a base layer of 5 ⁵ / ₈ " Type X gypsum sheathing placed vertically with 6d box nails 8" on center at joints and 12" on center elsewhere. An approved building paper is next applied, followed by self-furred exterior lath attached with 2 ¹ / ₂ ", No. 12 gage galvanized roofing nails with a 3 ³ / ₈ " diameter head and spaced 6" on center along each stud. Cement plaster consisting of a 1 ¹ / ₂ " brown coat is then applied. The scratch coat is mixed in the proportion of 1:3 by weight, cement to sand with 10 pounds of hydrated lime and 3 pounds of approved additives or admixtures per sack of cement. The brown coat is mixed in the proportion of 1:4 by weight, cement to sand with the same amounts of hydrated lime and approved additives or admixtures used in the scratch coat.	—	—	8 ¹ / ₄	—
	15-1.7 ^{l, m}	2" x 6" wood studs 16" on center. The exterior face has a layer of 5 ⁵ / ₈ " Type X gypsum sheathing placed vertically with 6d box nails 8" on center at joints and 12" on center elsewhere. An approved building paper is next applied, followed by 1" by No. 18 gage self-furred exterior lath attached with 8d by 2 ¹ / ₂ "-long galvanized roofing nails spaced 6" on center along each stud. Cement plaster consisting of a 1 ¹ / ₂ " scratch coat, a bonding agent and a 1 ¹ / ₂ " brown coat and a finish coat is then applied. The scratch coat is mixed in the proportion of 1:3 by weight, cement to sand with 10 pounds of hydrated lime and 3 pounds of approved additives or admixtures per sack of cement. The brown coat is mixed in the proportion of 1:4 by weight, cement to sand with the same amounts of hydrated lime and approved additives or admixtures used in the scratch coat. The interior is covered with 3 ³ / ₈ " gypsum lath with 1" hexagonal mesh of 0.035 inch (No. 20 B.W. gage) woven wire lath furred out 5 ⁵ / ₁₆ " and 1" perlite or vermiculite gypsum plaster. Lath nailed with 1 ¹ / ₈ " by No. 13 gage by 19 ¹⁹ / ₆₄ " head plasterboard glued nails spaced 5" on center. Mesh attached by 1 ³ / ₄ " by No. 12 gage by 3 ³ / ₈ " head nails with 3 ³ / ₈ " furrings, spaced 8" on center. The plaster mix shall not exceed 100 pounds of gypsum to 2 ¹ / ₂ cubic feet of aggregate.	—	—	8 ³ / ₈	—
	15-1.8 ^{l, m}	2" x 6" wood studs 16" on center. The exterior face has a layer of 5 ⁵ / ₈ " Type X gypsum sheathing placed vertically with 6d box nails 8" on center at joints and 12" on center elsewhere. An approved building paper is next applied, followed by 1 ¹ / ₂ " by No. 17 gage self-furred exterior lath attached with 8d by 2 ¹ / ₂ "-long galvanized roofing nails spaced 6" on center along each stud. Cement plaster consisting of a 1 ¹ / ₂ " scratch coat and a 1 ¹ / ₂ " brown coat is then applied. The plaster may shall be permitted to be placed by machine. The scratch coat is mixed in the proportion of 1:4 by weight, plastic cement to sand. The brown coat is mixed in the proportion of 1:5 by weight, plastic cement to sand. The interior is covered with 3 ³ / ₈ " gypsum lath with 1" hexagonal mesh of No. 20-gage woven wire lath furred out 5 ⁵ / ₁₆ " and 1" perlite or vermiculite gypsum plaster. Lath nailed with 1 ¹ / ₈ " by No. 13 gage by 19 ¹⁹ / ₆₄ " head plasterboard glued nails spaced 5" on center. Mesh attached by 1 ³ / ₄ " by No. 12 gage by 3 ³ / ₈ " head nails with 3 ³ / ₈ " furrings, spaced 8" on center. The plaster mix shall not exceed 100 pounds of gypsum to 2 ¹ / ₂ cubic feet of aggregate.	—	—	8 ³ / ₈	—
	15-1.9	4" No. 18 gage, nonload-bearing metal studs, 16" on center, with 1" Portland cement lime plaster (measured from the back side of the 3 ³ / ₄ -pound expanded metal lath) on the exterior surface. Interior surface to be covered with 1" of gypsum plaster on 3 ³ / ₄ -pound expanded metal lath proportioned by weight—1:2 for scratch coat, 1:3 for brown, gypsum to sand. Lath on one side of the partition fastened to 1 ¹ / ₄ " diameter pencil rods supported by No. 20 gage metal clips, located 16" on center vertically, on each stud. 3" thick mineral fiber insulating batts friction fitted between the studs.	—	—	6 ¹ / ₂ ^d	—
		Steel studs 0.060" thick, 4" deep or 6" at 16" or 24" centers, with 1 ¹ / ₂ " glass fiber-reinforced concrete (GFRC) on the exterior surface. GFRC is attached with flex				

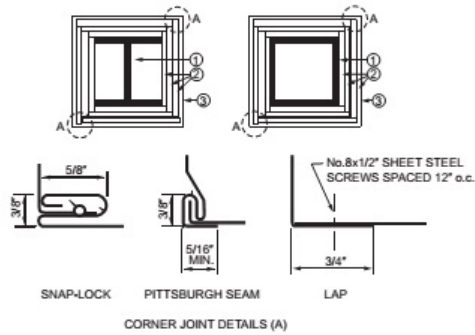
15-1.10	anchors at 24" on center, with 5" leg welded to studs with two 1/2"-long flare-bevel welds, and 4" foot attached to the GFRC skin with 5/8"-thick GFRC bonding pads that extend 2 1/2" beyond the flex anchor foot on both sides. Interior surface to have two layers of 1/2" Type X gypsum wallboard. The first layer of wallboard to be attached with 1"-long Type S buglehead screws spaced 24" on center and the second layer is attached with 1 5/8"-long Type S screws spaced at 12" on center. Cavity is to be filled with 5" of 4 pcf (nominal) mineral fiber batts. GFRC has 1 1/2" returns packed with mineral fiber and caulked on the exterior.	—	—	6 1/2	—
15-1.11	Steel studs 0.060" thick, 4" deep or 6" at 16" or 24" centers, respectively, with 1/2" glass fiber-reinforced concrete (GFRC) on the exterior surface. GFRC is attached with flex anchors at 24" on center, with 5" leg welded to studs with two 1/2"-long flare-bevel welds, and 4" foot attached to the GFRC skin with 5/8"-thick GFRC bonding pads that extend 2 1/2" beyond the flex anchor foot on both sides. Interior surface to have one layer of 5/8" Type X gypsum wallboard, attached with 1 1/4"-long Type S buglehead screws spaced 12" on center. Cavity is to be filled with 5" of 4 pcf (nominal) mineral fiber batts. GFRC has 1 1/2" returns packed with mineral fiber and caulked on the exterior.	—	—	—	6 1/8
15-1.12 ^q	2" x 6" wood studs at 16" with double top plates, single bottom plate; interior and exterior sides covered with 5/8" Type X gypsum wallboard, 4' wide, applied horizontally or vertically with vertical joints over studs, and fastened with 2 1/4" Type S drywall screws, spaced 12" on center. Cavity to be filled with 5 1/2" mineral wool insulation.	—	—	—	6 3/4
15-1.13 ^q	2" x 6" wood studs at 16" with double top plates, single bottom plate; interior and exterior sides covered with 5/8" Type X gypsum wallboard, 4' wide, applied vertically with all joints over framing or blocking and fastened with 2 1/4" Type S drywall screws, spaced 12" on center. R-19 mineral fiber insulation installed in stud cavity.	—	—	—	6 3/4
15-1.14 ^q	2" x 6" wood studs at 16" with double top plates, single bottom plate; interior and exterior sides covered with 5/8" Type X gypsum wallboard, 4' wide, applied horizontally or vertically with vertical joints over studs, and fastened with 2 1/4" Type S drywall screws, spaced 7" on center.	—	—	—	6 3/4
15-1.15 ^q	2" x 4" wood studs at 16" with double top plates, single bottom plate; interior and exterior sides covered with 5/8" Type X gypsum wallboard and sheathing, respectively, 4' wide, applied horizontally or vertically with vertical joints over studs, and fastened with 2 1/4" Type S drywall screws, spaced 12" on center. Cavity to be filled with 3 1/2" mineral wool insulation.	—	—	—	4 3/4
15-1.16 ^q	2" x 6" wood studs at 24" centers with double top plates, single bottom plate; interior and exterior side covered with two layers of 5/8" Type X gypsum wallboard, 4' wide, applied horizontally with vertical joints over studs. Base layer fastened with 2 1/4" Type S drywall screws, spaced 24" on center and face layer fastened with Type S drywall screws, spaced 8" on center, wallboard joints covered with paper tape and joint compound, fastener heads covered with joint compound. Cavity to be filled with 5 1/2" mineral wool insulation.	—	—	8	—
15-2.1 ^d	3 5/8" No. 16 gage steel studs at 24" on center or 2" x 4" wood studs at 24" on center. Metal lath attached to the exterior side of studs with minimum 1" long No. 6 drywall screws at 6" on center and covered with minimum 3/4" thick Portland cement plaster. Thin veneer brick units of clay or shale complying with C1157/C1157M—2017, Grade TBS or better, installed in running bond in accordance with Section 1404.10. Combined total thickness of the Portland cement plaster, mortar and thin veneer brick units shall be not less than 1 3/4". Interior side covered with one layer of 5/8"-thick Type X gypsum wallboard attached to studs with 1" long No. 6 drywall screws at 12" on center.	—	—	—	6
15-2.2 ^d	3 5/8" No. 16 gage steel studs at 24" on center or 2" x 4" wood studs at 24" on center. Metal lath attached to the exterior side of studs with minimum 1" long No. 6 drywall screws at 6" on center and covered with minimum 3/4" thick Portland cement plaster. Thin veneer brick units of clay or shale complying with C1157/C1157M—2017, Grade TBS or better, installed in running bond in accordance with Section 1404.10. Combined total thickness of the Portland cement plaster, mortar and thin veneer brick units shall be not less than 2". Interior side covered with two layers of 5/8"-thick Type X gypsum wallboard. Bottom layer attached to studs with 1"-long No. 6 drywall screws at 24" on center. Top layer attached to studs with 1 5/8"-long No. 6 drywall screws at 12" on center.	—	—	6 7/8	—
	3 5/8" No. 16 gage steel studs at 16" on center or 2" x 4" wood studs at 16" on center. Where metal lath is used, attach to the exterior side of studs with minimum 1"-long No. 6				

	15-2.3 ^d	drywall screws at 6" on center. Brick units of clay or shale not less than 2 ⁵ / ₈ " thick complying with C270—14a installed in accordance with Section 1404.6 with a minimum 1" airspace. Interior side covered with one layer of 5/8"-thick Type X gypsum wallboard attached to studs with 1"-long No. 6 drywall screws at 12" on center.	—	—	—	7 ⁷ / ₈
	15-2.4 ^d	3 ⁵ / ₈ " No. 16 gage steel studs at 16" on center or 2" x 4" wood studs at 16" on center. Where metal lath is used, attach to the exterior side of studs with minimum 1"-long No. 6 drywall screws at 6" on center. Brick units of clay or shale not less than 2 ⁵ / ₈ " thick complying with C270—14a installed in accordance with Section 1404.6 with a minimum 1" airspace. Interior side covered with two layers of 5/8"-thick Type X gypsum wallboard. Bottom layer attached to studs with 1"-long No. 6 drywall screws at 24" on center. Top layer attached to studs with 1 ⁵ / ₈ "-long No. 6 drywall screws at 12" on center.	—	—	8 ¹ / ₂	—
16. Exterior walls rated for fire resistance from the inside only in accordance with Section 705.5.	16-1.1 ^q	2" x 4" wood studs at 16" centers with double top plates, single bottom plate; interior side covered with 5/8" Type X gypsum wallboard, 4' wide, applied horizontally unblocked, and fastened with 2 ¹ / ₄ " Type S drywall screws, spaced 12" on center, wallboard joints covered with paper tape and joint compound, fastener heads covered with joint compound. Exterior covered with 3/8" wood structural panels, applied vertically, horizontal joints blocked and fastened with 6d common nails (bright)—12" on center in the field, and 6" on center panel edges. Cavity to be filled with 3 ¹ / ₂ " mineral wool insulation. Rating established for exposure from interior side only.	—	—	—	4 ¹ / ₂
	16-1.2 ^q	2" x 6" wood studs at 16" centers with double top plates, single bottom plate; interior side covered with 5/8" Type X gypsum wallboard, 4' wide, applied horizontally or vertically with vertical joints over studs and fastened with 2 ¹ / ₄ " Type S drywall screws, spaced 12" on center, wallboard joints covered with paper tape and joint compound, fastener heads covered with joint compound, exterior side covered with 7/16" wood structural panels fastened with 6d common nails (bright) spaced 12" on center in the field and 6" on center along the panel edges. Cavity to be filled with 5 ¹ / ₂ " mineral wool insulation. Rating established from the gypsum-covered side only.	—	—	—	6 ⁹ / ₁₆
	16-1.3 ^q	2" x 6" wood studs at 16" centers with double top plates, single bottom plates; interior side covered with 5/8" Type X gypsum wallboard, 4' wide, applied vertically with all joints over framing or blocking and fastened with 2 ¹ / ₄ " Type S drywall screws spaced 7" on center. Joints to be covered with tape and joint compound. Exterior covered with 3/8" wood structural panels, applied vertically with edges over framing or blocking and fastened with 6d common nails (bright) at 12" on center in the field and 6" on center on panel edges. R-19 mineral fiber insulation installed in stud cavity. Rating established from the gypsum-covered side only.	—	—	—	6 ¹ / ₂

For SI: 1 inch = 25.4 mm, 1 square inch = 645.2 mm², 1 cubic foot = 0.0283 m³.

- a. Staples with equivalent holding power and penetration shall be permitted to be used as alternate fasteners to nails for attachment to wood framing.
- b. Thickness shown for brick and clay tile is nominal thicknesses unless plastered, in which case thicknesses are net. Thickness shown for concrete masonry and clay masonry is equivalent thickness defined in Section 722.3.1 for concrete masonry and Section 722.4.1.1 for clay masonry. Where all cells are solid grouted or filled with silicone-treated perlite loose-fill insulation; vermiculite loose-fill insulation; or expanded clay, shale or slate lightweight aggregate, the equivalent thickness shall be the thickness of the block or brick using specified dimensions as defined in Chapter 21. Equivalent thickness shall include the thickness of applied plaster and lath or gypsum wallboard, where specified.
- c. For units in which the net cross-sectional area of cored brick in any plane parallel to the surface containing the cores is not less than 75 percent of the gross cross-sectional area measured in the same plane.
- d. Shall be used for nonbearing purposes only.
- e. For all of the construction with gypsum wallboard described in this table, gypsum base for veneer plaster of the same size, thickness and core type shall be permitted to be substituted for gypsum wallboard, provided that attachment is identical to that specified for the wallboard, and the joints on the face layer are reinforced and the entire surface is covered with not less than 1/16-inch gypsum veneer plaster.
- f. The fire-resistance time period for concrete masonry units meeting the equivalent thicknesses required for a 2-hour fire-resistance rating in Item 3, and having a thickness of not less than 7⁵/₈ inches is 4 hours where cores that are not grouted are filled with silicone-treated perlite loose-fill insulation; vermiculite loose-fill insulation; or expanded clay, shale or slate lightweight aggregate, sand or slag having a maximum particle size of 3/8 inch.
- g. The fire-resistance rating of concrete masonry units composed of a combination of aggregate types or where plaster is applied directly to the concrete masonry shall be determined in accordance with ACI 216.1/TMS 0216. Lightweight aggregates shall have a maximum combined density of 65 pounds per cubic foot.

- h. See Note b. The equivalent thickness shall be permitted to include the thickness of cement plaster or 1.5 times the thickness of gypsum plaster applied in accordance with the requirements of Chapter 25.
- i. Concrete walls shall be reinforced with horizontal and vertical temperature reinforcement as required by Chapter 19.
- j. Studs are welded truss wire studs with 0.18 inch (No. 7 B.W. gage) flange wire and 0.18 inch (No. 7 B.W. gage) truss wires.
- k. Nailable metal studs consist of two channel studs spot welded back to back with a crimped web forming a nailing groove.
- l. Wood structural panels shall be permitted to be installed between the fire protection and the wood studs on either the interior or exterior side of the wood frame assemblies in this table, provided that the length of the fasteners used to attach the fire protection is increased by an amount not less than the thickness of the wood structural panel.
- m. For studs with a slenderness ratio, l_e/d , greater than 33, the design stress shall be reduced to 78 percent of allowable F_c . For studs with a slenderness ratio, l_e/d , not exceeding 33, the design stress shall be reduced to 78 percent of the adjusted stress F_c calculated for studs having a slenderness ratio l_e/d of 33.
- n. For properties of cooler or wallboard nails, see ASTM C514, ASTM C547 or ASTM F1667.
- o. Generic fire-resistance ratings (those not designated as PROPRIETARY* in the listing) in the GA 600 shall be accepted as if herein specified.
- p. NCMA TEK 5-8A shall be permitted for the design of fire walls.
- q. The design stress of studs shall be equal to not more than 100 percent of the allowable F_c calculated in accordance with Section 2306.



For SI: 1 inch = 25.4 mm, 1 foot = 305 mm.

1. Structural steel column, either wide flange or tubular shapes.
2. Type X gypsum board or gypsum panel products in accordance with ASTM C1177, C1178, C1278, C1396 or C1658. The total thickness of gypsum board or gypsum panel products calculated as h in Section 722.5.1.2 shall be applied vertically to an individual column using one of the following methods:
 1. As a single layer without horizontal joints.
 2. As multiple layers with horizontal joints not permitted in any layer.
 3. As multiple layers with horizontal joints staggered not less than 12 inches vertically between layers and not less than 8 feet vertically in any single layer. The total required thickness of gypsum board or gypsum panel products shall be determined on the basis of the specified fire-resistance rating and the weight-to-heated-perimeter ratio (W/D) of the column. For fire-resistance ratings of 2 hours or less, one of the required layers of gypsum board or gypsum panel product ~~may~~ shall be permitted to be applied to the exterior of the sheet steel column covers with 1-inch long Type S screws spaced 1 inch from the wallboard edge and 8 inches on center. For such installations, 0.0149-inch minimum thickness galvanized steel corner beads with 1 $\frac{1}{2}$ -inch legs shall be attached to the wallboard with Type S screws spaced 12 inches on center.
3. For fire-resistance ratings of 3 hours or less, the column covers shall be fabricated from 0.0239-inch minimum thickness galvanized or stainless steel. For 4-hour fire-resistance ratings, the column covers shall be fabricated from 0.0239-inch minimum thickness stainless steel. The column covers shall be erected with the Snap Lock or Pittsburgh joint details. For fire-resistance ratings of 2 hours or less, column covers fabricated from 0.0269-inch minimum thickness galvanized or stainless steel shall be permitted to be erected with lap joints. The lap joints shall be permitted to be located anywhere around the perimeter of the column cover. The lap joints shall be secured with $\frac{1}{2}$ -inch-long No. 8 sheet metal screws spaced 12 inches on center. The column covers shall be provided with a minimum expansion clearance of $\frac{1}{8}$ inch per linear foot between the ends of the cover and any restraining construction.

FIGURE 722.5.1(2)
GYPSUM-PROTECTED STRUCTURAL STEEL COLUMNS WITH SHEET STEEL COLUMN COVERS

FS97-21 Part II

IFC: 5704.2.9.7.5.1, TABLE 6109.12

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org); Michael O'Brian, representing FCAC (fcac@iccsafe.org)

2021 International Fire Code

Revise as follows:

5704.2.9.7.5.1 Information signs. A permanent sign shall be provided at the fill point for the tank, documenting the filling procedure and the tank calibration chart.

Exception:

Where climatic conditions are such that the sign ~~may be~~ has the potential to be obscured by ice or snow, or weathered beyond readability or otherwise impaired, said procedures and chart shall be located in the office window, lock box or other area available to the person filling the tank.

**TABLE 6109.12
SEPARATION FROM EXPOSURES OF LP-GAS CONTAINERS AWAITING USE, RESALE OR EXCHANGE STORED OUTSIDE OF
BUILDINGS**

QUANTITY OF LP-GAS STORED (pounds)	MINIMUM SEPARATION DISTANCE FROM STORED LP-GAS CYLINDERS TO (feet):						
	Nearest important building or group of buildings or line of adjoining property that <u>may be has the potential to be built on</u>	Line of adjoining property occupied by schools, places of religious worship, hospitals, athletic fields or other points of public gathering; busy thoroughfares; or sidewalks	LP-gas dispensing station	Doorway or opening to a building with two or more means of egress	Doorway or opening to a building with one means of egress	Combustible materials	Motor vehicle fuel dispenser
720 or less	0	0	5	5	10	10	20
721–2,500	0	10	10	5	10	10	20
2,501–6,000	10	10	10	10	10	10	20
6,001–10,000	20	20	20	20	20	10	20
Over 10,000	25	25	25	25	25	10	20

For SI: 1 foot = 304.8 mm, 1 pound = 0.454 kg.

FS97-21 Part III

IZC: 302.1, 305.1, 1004.4, 1008.1.1, 1008.2.4, 1008.2.6, 1009.2, 1301.1, 1302.2

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org); Michael O'Brian, representing FCAC (fcac@iccsafe.org)

2021 International Zoning Code

Revise as follows:

302.1 Minimum areas. The minimum areas that ~~may~~ constitute a separate or detached part of any of the following zoning districts on the zoning map or subsequent amendments to said zoning map shall be as shown in Table 302.1. Where a nonresidential district is directly across the street from or abuts the district with the same or less restrictive classification, the area of the land directly across the street or abutting the property ~~may~~ shall be permitted to be included in the calculations in meeting the minimum district size requirements.

305.1 General. The principal objective of this zoning code is to provide for an orderly arrangement of compatible buildings and land uses, and for the property location of all types of uses required for the social and economic welfare of the community. To accomplish this objective, each type and kind of use is classified as permitted in one or more of the various use districts established by this code. However, in addition to those uses specifically classified and permitted in each district, there are certain additional uses that it ~~may be~~ is necessary to allow because of the unusual characteristics of the service they provide the public. These *conditional uses* require particular considerations as to their proper location to adjacent, established or intended uses, or to the planned growth of the community. The conditions controlling the locations and operation of such special uses are established by the applicable sections of this code.

1004.4 Traffic visibility. Signs or sign structures shall not be erected at the intersection of any street in such a manner as to obstruct free and clear vision, nor at any location where by its position, shape or color it ~~may interfere~~ interferes with or obstruct the view of or be confused with any authorized traffic sign, signal or device.

1008.1.1 Wall signs. Every single-family residence, multiple-family residential complex, commercial or *industrial* building, and every separate nonresidential building in a residential zone ~~may~~ shall be permitted to display wall signs per street frontage subject to the limiting standards set forth in Table 1008.1.1(1). For shopping centers, planned *industrial parks* or other multiple-occupancy nonresidential buildings, the building face or wall shall be calculated separately for each separate occupancy, but in no event will the allowed area for any separate occupancy be less than [JURISDICTION TO INSERT NUMBER] square feet.

1008.2.4 Special event signs in public ways. Signs advertising a special community event shall not be prohibited in or over public rights-of-way, subject to approval by the code official as to the size, location and method of erection. The code official ~~may~~ shall be permitted to not approve any special event signage that would impair the safety and convenience of use of public rights-of-way, or obstruct traffic visibility.

1008.2.6 Political signs. Political signs shall be permitted in all zoning districts, subject to the following limitations:

1. Such signs shall not exceed a height of [JURISDICTION TO INSERT NUMBER] feet nor an area of [JURISDICTION TO INSERT NUMBER] square feet.
2. Such signs for election candidates or ballot propositions shall be displayed only for a period of 60 days preceding the election and shall be removed within 10 days after the election, provided that signs promoting successful candidates or ballot propositions in a primary election ~~may~~ shall be permitted to remain displayed until not more than 10 days after the general election.
3. Such signs shall not be placed in any public right-of-way or obstruct traffic visibility.

1009.2 Development complex sign. In addition to the freestanding business identification signs otherwise allowed by this ordinance, every multiple-occupancy development complex shall be entitled to one free-standing sign per street front, at the maximum size permitted for business identification free-standing signs, to identify the development complex. Business identification shall not be permitted on a development complex sign. Any free-standing sign otherwise permitted under this ordinance ~~may~~ shall identify the name of the development complex.

1301.1 Approval. *Planned unit developments* (PUDs) shall be allowed by planning commission approval in any zoning district. Such *planned unit development* permit shall not be granted unless such development will meet the use limitations of the zoning district in which it is located and meet the *density* and other limitations of such districts, except as such requirements ~~may~~ shall be lawfully modified as provided by this code. Compliance with the regulations of this code in no way excuses the developer from the applicable requirements of a subdivision ordinance, except as modifications thereof are specifically authorized in the approval of the application for the planned unit development.

1302.2 Uses. *Aplanned unit development* that will contain uses not permitted in the zoning district in which it is to be located will require a change of zoning district and shall be accompanied by an application for a zoning amendment, except that any residential use shall be considered to be a permitted use in a *planned unit development*, which allows residential uses and shall be governed by *density*, design and other requirements of the *planned unit development* permit.

Where a site is situated in more than one use district, the permitted uses applicable to such property in one district ~~may~~ shall be permitted to be extended into the adjacent use district.

Reason Statement: The term 'may' is subjective. The proposal is to bring the text into enforceable language by using the ICC preferred language as often as possible. Similar proposals will be submitted for the Group B cycle for IRC, IECC and IEBC.

This is a joint proposal submitted by the ICC Building Code Action Committee (BCAC) and the ICC Fire Code Action Committee (FCAC).

BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

The FCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes with regard to fire and life safety in new and existing buildings and facilities as well as the protection of life and property in wildland urban interface areas. In 2020 and 2021 the Fire-CAC held multiple virtual meetings that were open to any interested party. In addition, there were numerous virtual specific working group meetings that were also open to any interested parties, to develop, discuss and debate the proposed changes. Related documentation and reports are posted on the FCAC website at:

FCAC.

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

These changes are only changing verbiage.

G1-21 Part I

PART I - IBC: SECTION 202 (New), 703.5, 1607.9.1, 1607.14.4.4, 1704.2.2, 2111.3.1, 2113.9.2, 2405.3, 2406.4.3, 3008.9, F101.5.1, H110.1; IPMC: [BF] 703.3

PART II - IFC: SECTION 202, 504.1, 509.2, 701.6, 2309.5.2.1, 3206.10.1.1, D102.1, L104.6, L104.14.1; IBC: [F] 415.11.7.4, [F] 914.1.1; ICCPC: [F] 2001.3.6

PART III - IFGC: 403.11.7, 404.8.2, 404.14.2, 409.5.3, 409.6, 411.1.6, 501.7.3, 503.5.9, 503.12.6

PART IV - IPC: 1302.9; IBC: [P]1210.2.2; ICCPC: [P]1204.3.3

PART V - IMC: 306.1, 506.3.2.2; IFGC: [M]306.1; ICCPC: SECTION 202 (New)

PART VI - ISPSC: [A]110.1, SECTION 202, SECTION 202 (New), 303.1.1, 306.9, 313.4, 314.5, 324.2, 409.4.3, 504.1, 603.2, 612.5.1, 704.7.3, 704.7.2, 1001.6

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org); Michael O'Brian, representing FCAC (fcac@iccsafe.org); Joseph J Summers, Chair, representing Plumbing, Mechanical and Fuel Gas Code Action Committee (pmgac@iccsafe.org)

THIS IS AN 6 PART CODE CHANGE. PART I WILL BE HEARD BY THE GENERAL CODE COMMITTEE. PART II WILL BE HEARD BY THE FIRE CODE COMMITTEE. PART III WILL BE HEARD BY THE FUEL GAS CODE COMMITTEE. PART IV WILL BE HEARD BY THE PLUMBING CODE COMMITTEE. PART V WILL BE HEARD BY THE MECHANICAL CODE COMMITTEE. PART VI WILL BE HEARD BY THE SWIMMING POOL AND SPA CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Building Code

Add new definition as follows:

ACCESS (TO). That which enables a device, appliance or equipment to be reached by ready access or by a means that first requires the removal or movement of a panel or similar obstruction [see also Ready access (to)].

READY ACCESS (TO). That which enables a device, appliance or equipment to be directly reached, without requiring the removal or movement of any panel or similar obstruction [see Access (to)].

Revise as follows:

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

1. Be located within 15 feet (4572 mm) of the end of each wall and at intervals not exceeding 30 feet (9144 mm) measured horizontally along the wall or partition.
2. Include lettering not less than 3 inches (76 mm) in height with a minimum $\frac{3}{8}$ -inch (9.5 mm) stroke in a contrasting color incorporating the suggested wording, "FIRE AND/OR SMOKE BARRIER—PROTECT ALL OPENINGS," or other wording.

1607.9.1 Handrails and guards. *Handrails* and *guards* shall be designed to resist a linear *load* of 50 pounds per linear foot (plf) (0.73 kN/m) in accordance with Section 4.5.1.1 of ASCE 7. Glass *handrail* assemblies and *guards* shall comply with Section 2407.

Exceptions:

1. For one- and two-family dwellings, only the single concentrated *load* required by Section 1607.9.1.1 shall be applied.
2. In Group I-3, F, H and S occupancies, for areas that are not ~~accessible to for use by~~ the general public and that have an *occupant load* less than 50, the minimum *load* shall be 20 pounds per foot (0.29 kN/m).

1607.14.4.4 Ground-mounted photovoltaic (PV) panel systems, or modules installed as an independent structure. Ground-mounted photovoltaic (PV) panel systems that are independent structures and do not have ~~accessible/ an easily accessed or~~ occupied space underneath are not required to accommodate a roof photovoltaic *live load*. Other *loads* and combinations in accordance with Section 1605 shall be accommodated.

1704.2.2 Access for special inspection. The construction or work for which *special inspection* or testing is required shall remain ~~accessible and~~ exposed and with access for special inspection or testing purposes until completion of the required *special inspections* or tests.

2111.3.1 Ash dump cleanout. Cleanout openings, located within foundation walls below fireboxes, where provided, shall be equipped with ferrous metal or masonry doors and frames constructed to remain tightly closed, except when in use. Provide access to cleanouts ~~Cleanouts shall be accessible~~ and located the clean outs so that ash removal will not create a hazard to combustible materials.

2113.9.2 Spark arrestors. Where a spark arrestor is installed on a masonry chimney, the spark arrestor shall meet all of the following requirements:

1. The net free area of the arrestor shall be not less than four times the net free area of the outlet of the chimney flue it serves.

2. The arrestor screen shall have heat and *corrosion resistance* equivalent to 19-gage galvanized steel or 24-gage stainless steel.
3. Openings shall not permit the passage of spheres having a diameter greater than $\frac{1}{2}$ inch (12.7 mm) nor block the passage of spheres having a diameter less than $\frac{3}{8}$ inch (9.5 mm).
4. The spark arrestor shall ~~be accessible~~ provide access for cleaning and the screen or chimney cap shall be removable to allow for cleaning of the chimney flue.

2405.3 Screening. Where used in monolithic glazing systems, annealed, heat-strengthened, fully tempered and wired glass shall have broken glass retention screens installed below the glazing material. The screens and their fastenings shall be: capable of supporting twice the weight of the glazing; firmly and substantially fastened to the framing members; and installed within 4 inches (102 mm) of the glass. The screens shall be constructed of a noncombustible material not thinner than No. 12 B&S gage (0.0808 inch) with mesh not larger than 1 inch by 1 inch (25 mm by 25 mm). In a corrosive atmosphere, structurally equivalent noncorrosive screen materials shall be used. Annealed, heat-strengthened, fully tempered and wired glass, where used in multiple-layer glazing systems as the bottom glass layer over the walking surface, shall be equipped with screening that conforms to the requirements for monolithic glazing systems.

Exception: In monolithic and multiple-layer sloped glazing systems, the following applies:

1. Fully tempered glass installed without protective screens where glazed between intervening floors at a slope of 30 degrees (0.52 rad) or less from the vertical plane shall have the highest point of the glass 10 feet (3048 mm) or less above the walking surface.
2. Screens are not required below any glazing material, including annealed glass, where the walking surface below the glazing material is permanently protected from the risk of falling glass or the area below the glazing material is not a walking surface.
3. Any glazing material, including annealed glass, is permitted to be installed without screens in the sloped glazing systems of commercial or detached noncombustible *greenhouses* used exclusively for growing plants and not open to the public, provided that the height of the *greenhouse* at the ridge does not exceed 30 feet (9144 mm) above grade.
4. Screens shall not be required in individual *dwelling units* in Groups R-2, R-3 and R-4 where fully tempered glass is used as single glazing or as both panes in an insulating glass unit, and the following conditions are met:
 - 4.1. Each pane of the glass is 16 square feet (1.5 m²) or less in area.
 - 4.2. The highest point of the glass is 12 feet (3658 mm) or less above any walking surface ~~or other accessible area~~.
 - 4.3. The glass thickness is $\frac{3}{16}$ inch (4.8 mm) or less.
5. Screens shall not be required for laminated glass with a 15-mil (0.38 mm) polyvinyl butyral (or equivalent) interlayer used in individual *dwelling units* in Groups R-2, R-3 and R-4 within the following limits:
 - 5.1. Each pane of glass is 16 square feet (1.5 m²) or less in area.
 - 5.2. The highest point of the glass is 12 feet (3658 mm) or less above a walking surface ~~or other accessible area~~.

2406.4.3 Glazing in windows. Glazing in an individual fixed or operable panel that meets all of the following conditions shall be considered to be a hazardous location:

1. The exposed area of an individual pane is greater than 9 square feet (0.84 m²).
2. The bottom edge of the glazing is less than 18 inches (457 mm) above the floor.
3. The top edge of the glazing is greater than 36 inches (914 mm) above the floor.
4. One or more walking surface(s) are within 36 inches (914 mm), measured horizontally and in a straight line, of the plane of the glazing.

Exceptions:

1. Decorative glazing.
2. Where a horizontal rail is installed on the ~~accessible~~ walking surface side(s) of the glazing adjacent to and 34 to 38 inches (864 to 965 mm) above the walking surface. The rail shall be capable of withstanding a horizontal *load* of 50 pounds per linear foot (730 N/m) without contacting the glass and be not less than $1\frac{1}{2}$ inches (38 mm) in cross-sectional height.
3. Outboard panes in insulating glass units or multiple glazing where the bottom exposed edge of the glass is 25 feet (7620 mm) or more above any grade, roof, walking surface or other horizontal or sloped (within 45 degrees of horizontal) (0.79 rad) surface adjacent to the glass exterior.

3008.9 Emergency voice/alarm communication system. The building shall be provided with an *emergency voice/alarm communication system*. The *emergency voice/alarm communication system* shall ~~be accessible to~~ allow access for the fire department. The system shall be provided in

accordance with Section 907.5.2.2.

F101.5.1 Rodent-accessible attainable openings. Windows and other openings for the purpose of light and ventilation in the *exterior walls* not covered in this chapter, ~~accessible-attainable~~ to rodents by way of exposed pipes, wires, conduits and other appurtenances, shall be covered with wire cloth of at least 0.035-inch (0.89 mm) wire. In lieu of wire cloth covering, said pipes, wires, conduits and other appurtenances shall be blocked from rodent usage by installing solid sheet metal guards 0.024 inch (0.61 mm) thick or heavier. Guards shall be fitted around pipes, wires, conduits or other appurtenances. In addition, they shall be fastened securely to and shall extend perpendicularly from the *exterior wall* for not less than 12 inches (305 mm) beyond and on either side of pipes, wires, conduits or appurtenances.

H110.1 General. Roof signs shall be constructed entirely of metal or other approved noncombustible material except as provided for in Sections H106.1.1 and H107.1. Provisions shall be made for electric grounding of metallic parts. Where combustible materials are permitted in letters or other ornamental features, wiring and tubing shall be kept free and insulated therefrom. Roof signs shall be so constructed as to leave a clear space of not less than 6 feet (1829 mm) between the roof level and the lowest part of the sign and shall have not less than 5 feet (1524 mm) clearance between the vertical supports thereof. Roof sign structures shall not project beyond an *exterior wall*.

Exception: Signs on flat roofs with every part of the roof ~~accessible-allowing access~~.

2021 International Property Maintenance Code

Revise as follows:

[BF] 703.3 Maintenance. The required fire-resistance rating of fire-resistance-rated construction, including walls, firestops, shaft enclosures, partitions, smoke barriers, floors, fire-resistive coatings and sprayed fire-resistant materials applied to structural members and joint systems, shall be maintained. Such elements shall be visually inspected annually by the *owner* and repaired, restored or replaced where damaged, altered, breached or penetrated. Records of inspections and repairs shall be maintained. Where concealed, such elements shall not be required to be visually inspected by the *owner* unless the concealed space ~~is accessible~~ has access by the removal or movement of a panel, access door, ceiling tile or entry to the space. Openings made therein for the passage of pipes, electrical conduit, wires, ducts, air transfer and any other reason shall be protected with *approved* methods capable of resisting the passage of smoke and fire. Openings through fire-resistance-rated assemblies shall be protected by self- or automatic-closing doors of *approved* construction meeting the fire protection requirements for the assembly.

G1-21 Part II

PART II - IFC: SECTION 202, 504.1, 509.2, 701.6, 2309.5.2.1, 3206.10.1.1, D102.1, L104.6, L104.14.1; IBC: [F] 415.11.7.4, [F] 914.1.1; ICCPC: [F] 2001.3.6

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org); Michael O'Brian, representing FCAC (fcac@iccsafe.org); Joseph J. Summers, representing Plumbing, Mechanical and Fuel Gas Code Action Committee (pmgcac@iccsafe.org)

2021 International Fire Code

Revise as follows:

MULTIPLE-LEVEL BOOTH. An exhibit that has a second level or tier constructed on top of the exhibit or portion of the exhibit that is ~~accessible~~ open to the public, or includes a live load above the exhibit area floor level.

504.1 Required access. Exterior doors and openings required by this code or the *International Building Code* shall be maintained ~~readily accessible~~ with ready access for emergency access by the fire department. An *approved* access walkway leading from fire apparatus access roads to exterior openings shall be provided where required by the *fire code official*.

509.2 Equipment access. *Approved* access shall be provided and maintained for all *fire protection system* equipment to permit immediate safe operation and maintenance of such equipment. Storage, trash and other materials or objects shall not be placed or kept in such a manner that would prevent such equipment from ~~being readily accessible~~ ready access.

701.6 Owner's responsibility. The *owner* shall maintain an inventory of all required *fire-resistance-rated* construction, construction installed to resist the passage of smoke and the construction included in Sections 703 through 707 and Sections 602.4.1 and 602.4.2 of the *International Building Code*. Such construction shall be visually inspected by the *owner* annually and properly repaired, restored or replaced where damaged, altered, breached or penetrated. Records of inspections and repairs shall be maintained. Where concealed, such elements shall not be required to be visually inspected by the *owner* unless the concealed space is ~~accessible~~ available by the removal or movement of a panel, access door, ceiling tile or similar movable entry to the space.

2309.5.2.1 Identification. Manual emergency shutoff valves shall be identified and the location shall be clearly visible, ~~accessible~~ have access and be indicated by means of a sign.

3206.10.1.1 Sprinklered buildings. Aisles in sprinklered buildings shall be not less than 44 inches (1118 mm) wide. Aisles shall be not less than 96 inches (2438 mm) wide in *high-piled storage areas* exceeding 2,500 square feet (232 m²) in area, that are ~~accessible~~ open to the public and designated to contain high-hazard commodities.

Aisles shall be not less than 96 inches (2438 mm) wide in areas open to the public where mechanical stocking methods are used.

Exceptions:

1. Aisles in *high-piled storage areas* exceeding 2,500 square feet (232 m²) in area, that are open to the public and designated to contain high-hazard commodities, and that are protected by a sprinkler system designed for multiple-row racks of high-hazard commodities, shall be not less than 44 inches (1118 mm) wide.
2. Aisles that are in *high-piled storage areas* exceeding 2,500 square feet (232 m²) in area, not open to the public and protected by a sprinkler system designed for multiple-row racks, shall be not less than 24 inches (610 mm) wide.

D102.1 Access and loading. Facilities, buildings or portions of buildings hereafter constructed shall ~~be accessible to~~ allow access for the fire department apparatus by way of an *approved* fire apparatus access road with an asphalt, concrete or other *approved* driving surface capable of supporting the imposed load of fire apparatus weighing up to 75,000 pounds (34 050 kg).

L104.6 Isolation valves. System isolation valves that ~~are accessible to~~ have access for the fire department shall be installed on the system riser to allow piping beyond any air cylinder refill panel to be blocked.

L104.14.1 Location. The location of the external mobile air connection shall ~~be accessible to~~ have access for mobile air apparatus and *approved* by the *fire code official*.

2021 International Building Code

Revise as follows:

[F] 415.11.7.4 Installations in corridors and above other occupancies. The installation of HPM piping and tubing within the space defined by the walls of corridors and the floor or roof above, or in concealed spaces above other occupancies, shall be in accordance with Sections 415.11.7.1 through 415.11.7.3 and the following conditions:

1. Automatic sprinklers shall be installed within the space unless the space is less than 6 inches (152 mm) in the least dimension.

2. *Ventilation* not less than six air changes per hour shall be provided. The space shall not be used to convey air from any other area.
3. Where the piping or tubing is used to transport HPM liquids, a receptor shall be installed below such piping or tubing. The receptor shall be designed to collect any discharge or leakage and drain it to an *approved* location. The 1-hour enclosure shall not be used as part of the receptor.
4. HPM supply piping and tubing and nonmetallic waste lines shall be separated from the corridor and from occupancies other than Group H-5 by *fire barriers* or by an approved method or assembly that has a *fire-resistance rating* of not less than 1 hour. Access openings into the enclosure shall be protected by approved fire-protection-rated assemblies.
5. ~~Readily accessible manual~~ Ready access to manual or automatic remotely activated fail-safe emergency shutoff valves shall be installed on piping and tubing other than waste lines at the following locations:
 - 5.1. At branch connections into the *fabrication area*.
 - 5.2. At entries into *corridors*.

Exception: Transverse crossings of the *corridors* by supply piping that is enclosed within a ferrous pipe or tube for the width of the *corridor* need not comply with Items 1 through 5.

[F] 914.1.1 Exterior access to shaftways. Outside openings ~~accessible with access~~ to the fire department and that open directly on a hoistway or shaftway communicating between two or more floors in a building shall be plainly marked with the word "SHAFTWAY" in red letters not less than 6 inches (152 mm) high on a white background. Such warning signs shall be placed so as to be readily discernible from the outside of the building.

2021 International Code Council Performance Code

Revise as follows:

[F] 2001.3.6 Water supply. Water supply for fire department operations shall be from a reliable, ~~readily accessible~~ source with ready access acceptable to the fire department and capable of supporting fire-fighting operations.

G1-21 Part III

PART III - IFGC: 403.11.7, 404.8.2, 404.14.2, 409.5.3, 409.6, 411.1.6, 501.7.3, 503.5.9, 503.12.6

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org); Michael O'Brian, representing FCAC (fcac@iccsafe.org); Joseph J. Summers, representing Plumbing, Mechanical and Fuel Gas Code Action Committee (pmgcac@iccsafe.org)

2021 International Fuel Gas Code

Revise as follows:

403.11.7 Lapped flanges. Lapped flanges shall be used only above ground or in exposed locations ~~accessible~~ with access for inspection.

404.8.2 Conduit with both ends terminating indoors. Where the conduit originates and terminates within the same building, the conduit shall originate and terminate in ~~an accessible~~ a portion of the building with access and shall not be sealed. The conduit shall extend not less than 2 inches (51 mm) beyond the point where the pipe emerges from the floor.

404.14.2 Conduit with both ends terminating indoors. Where the conduit originates and terminates within the same building, the conduit shall originate and terminate in ~~an accessible~~ a portion of the building with access and shall not be sealed. The conduit shall extend not less than 2 inches (51 mm) beyond the point where the pipe emerges from the floor.

409.5.3 Located at manifold. Where the *appliance* shutoff valve is installed at a manifold, such shutoff valve shall be located within 50 feet (15 240 mm) of the *appliance* served and shall ~~be readily accessible~~ have ready access and be permanently identified. The *pipng* from the manifold to within 6 feet (1829 mm) of the *appliance* shall be designed, sized and installed in accordance with Sections 401 through 408.

409.6 Shutoff valve for laboratories. Where provided with two or more fuel gas outlets, including table-, bench- and hood-mounted outlets, each laboratory space in educational, research, commercial and industrial *occupancies* shall be provided with a single dedicated shutoff valve through which all such gas outlets shall be supplied. The dedicated shutoff valve shall ~~be readily accessible~~ have ready access, be located within the laboratory space served, be located adjacent to the egress door from the space and shall be identified by *approved* signage stating "Gas Shutoff."

411.1.6 Unions. A union fitting shall be provided for *appliances* connected by rigid metallic pipe. Such unions shall ~~be accessible~~ have access and be located within 6 feet (1829 mm) of the *appliance*.

501.7.3 Connection to masonry fireplace flue. A connector shall extend from the *appliance* to the flue serving a masonry *fireplace* such that the flue gases are exhausted directly into the flue. The connector shall ~~be accessible~~ have access or be removable for inspection and cleaning of both the connector and the flue. *Listed* direct connection devices shall be installed in accordance with their listing.

503.5.9 Cleanouts. Where a chimney that formerly carried flue products from liquid or solid fuel-burning appliances is used with an *appliance* using fuel gas, ~~an accessible~~ a cleanout with access shall be provided. The cleanout shall have a tight-fitting cover and shall be installed so its upper edge is not less than 6 inches (152 mm) below the lower edge of the lowest chimney inlet opening.

503.12.6 Positioning. Draft hoods and draft regulators shall be installed in the position for which they were designed with reference to the horizontal and vertical planes and shall be located so that the relief opening is not obstructed by any part of the *appliance* or adjacent construction. The *appliance* and its draft hood shall be located so that the relief opening ~~is accessible~~ has access for checking vent operation.

G1-21 Part IV

PART IV - IPC: 1302.9; IBC: [P]1210.2.2; ICCPC: [P]1204.3.3

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org); Michael O'Brian, representing FCAC (fcac@iccsafe.org); Joseph J. Summers, representing Plumbing, Mechanical and Fuel Gas Code Action Committee (pmgcac@iccsafe.org)

2021 International Plumbing Code

Revise as follows:

1302.9 Pumping and control system. Mechanical equipment including pumps, valves and filters shall be ~~easily accessible~~ have easy access and removable in order to perform repair, maintenance and cleaning. The minimum flow rate and flow pressure delivered by the pumping system shall be appropriate for the application and in accordance with Section 604 .

2021 International Building Code

Revise as follows:

[P] 1210.2.2 Walls and partitions. Walls and partitions within 2 feet (610 mm) of service sinks, urinals and water closets shall have a smooth, hard, nonabsorbent surface, to a height of not less than 4 feet (1219 mm) above the floor, and except for structural elements, the materials used in such walls shall be of a type that is not adversely affected by moisture.

Exception: This section does not apply to the following buildings and spaces:

1. Dwelling units and *sleeping units*.
2. Toilet rooms that are not ~~accessible to the~~ for use by the general public and that have not more than one water closet.

Accessories such as grab bars, towel bars, paper dispensers and soap dishes, provided on or within walls, shall be installed and sealed to protect structural elements from moisture.

2021 International Code Council Performance Code

Revise as follows:

[P] 1204.3.3 ~~Accessibility Access.~~ The drainage system shall be ~~accessible~~ have access for maintenance and clearing of blockages.

G1-21 Part V

PART V - IMC: 306.1, 506.3.2.2; IFGC: [M]306.1; ICCPC: SECTION 202 (New)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org); Michael O'Brian, representing FCAC (fcac@iccsafe.org); Joseph J. Summers, representing Plumbing, Mechanical and Fuel Gas Code Action Committee (pmgcac@iccsafe.org)

2021 International Mechanical Code

Revise as follows:

306.1 Access. *Appliances*, controls devices, heat exchangers and HVAC system components that utilize energy shall ~~be accessible~~ provide access for inspection, service, repair and replacement without disabling the function of a fire-resistance-rated assembly or removing permanent construction, other appliances, venting systems or any other piping or ducts not connected to the *appliance* being inspected, serviced, repaired or replaced. A level working space not less than 30 inches deep and 30 inches wide (762 mm by 762 mm) shall be provided in front of the control side to service an *appliance*.

506.3.2.2 Duct-to-hood joints. Duct-to-hood joints shall be made with continuous internal or external liquid-tight welded or brazed joints. Such joints shall be smooth, ~~accessible~~ available for inspection, and without grease traps.

Exceptions: This section shall not apply to:

1. A vertical duct-to-hood collar connection made in the top plane of the hood in accordance with all of the following:
 - 1.1. The hood duct opening shall have a 1-inch-deep (25 mm), full perimeter, welded flange turned down into the hood interior at an angle of 90 degrees (1.57 rad) from the plane of the opening.
 - 1.2. The duct shall have a 1-inch-deep (25 mm) flange made by a 1-inch by 1-inch (25 mm by 25 mm) angle iron welded to the full perimeter of the duct not less than 1 inch (25 mm) above the bottom end of the duct.
 - 1.3. A gasket rated for use at not less than 1,500°F (816°C) is installed between the duct flange and the top of the hood.
 - 1.4. The duct-to-hood joint shall be secured by stud bolts not less than 1/4 inch (6.4 mm) in diameter welded to the hood with a spacing not greater than 4 inches (102 mm) on center for the full perimeter of the opening. The bolts and nuts shall be secured with lockwashers.
2. *Listed and labeled* duct-to-hood collar connections installed in accordance with Section 304.1.

2021 International Fuel Gas Code

Revise as follows:

[M] 306.1 Access for maintenance and replacement. Appliances, control devices, heat exchangers and HVAC components that utilize energy shall ~~be accessible~~ have access for inspection, service, repair and replacement without disabling the function of a fire-resistance-rated assembly or removing permanent construction, other appliances, or any other *piping* or ducts not connected to the *appliance* being inspected, serviced, repaired or replaced. A level working space not less than 30 inches (762 mm) deep and 30 inches (762 mm) wide shall be provided in front of the control side to service an *appliance*.

2021 International Code Council Performance Code

Add new definition as follows:

ACCESS (TO). That which enables a device, appliance or equipment to be reached by ready access or by a means that first requires the removal or movement of a panel or similar obstruction [see also Ready access (to)].

READY ACCESS (TO). That which enables a device, appliance or equipment to be directly reached, without requiring the removal or movement of any panel or similar obstruction [see Access (to)].

G1-21 Part VI

PART VI - ISPCS: [A]110.1, SECTION 202, SECTION 202 (New), 303.1.1, 306.9, 313.4, 314.5, 324.2, 409.4.3, 504.1, 603.2, 612.5.1, 704.7.3, 704.7.2, 1001.6

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org); Michael O'Brian, representing FCAC (fcac@iccsafe.org); Joseph J. Summers, representing Plumbing, Mechanical and Fuel Gas Code Action Committee (pmgcac@iccsafe.org)

2021 International Swimming Pool and Spa Code

Add new definition as follows:

ACCESS (TO). That which enables a device, appliance or equipment to be reached by ready access or by a means that first requires the removal or movement of a panel or similar obstruction [see also Ready access (to)].

Delete without substitution:

ACCESSIBLE. ~~Signifies access that requires the removal of an access panel or similar removable obstruction.~~

Add new definition as follows:

READY ACCESS (TO). That which enables a device, appliance or equipment to be directly reached, without requiring the removal or movement of any panel or similar obstruction [see Access (to)].

Revise as follows:

[A] 110.1 General. Construction or work for which a permit is required shall be subject to inspection by the *code official* and such construction or work shall remain visible and able to be accessed for inspection purposes until *approved*. Approval as a result of an inspection shall not be construed to be an approval of a violation of the provisions of this code or of other ordinances of the jurisdiction. Inspections presuming to give authority to violate or cancel the provisions of this code or of other ordinances of the jurisdiction shall not be valid. It shall be the duty of the permit applicant to cause the work to remain ~~accessible~~ available and exposed for inspection purposes. Neither the *code official* nor the jurisdiction shall be liable for expense entailed in the removal or replacement of any material required to allow inspection.

303.1.1 Heaters. The electric power to heaters shall be controlled by ~~a readily accessible~~ an on-off switch with ready access that is an integral part of the heater, mounted on the exterior of the heater or external to and within 3 feet (914 mm) of the heater. Operation of such switch shall not change the setting of the heater thermostat. Such switches shall be in addition to a circuit breaker for the power to the heater. Gas-fired heaters shall not be equipped with continuously burning ignition pilots.

306.9 Valves under decks. Valves installed in or under decks shall be ~~accessible~~ provided access or operation, service, and maintenance. Where access through the deck walking surface is required, an access cover shall be provided for the opening in the deck. Such access covers shall be slip resistant and secured.

313.4 Location. Provide access to pumps

~~Pumps and motors shall be accessible~~ for inspection and service in accordance with the manufacturer's specifications.

314.5 Vacuum fittings. Where installed, provide access to submerged vacuum fittings ~~shall be accessible~~ and such fittings shall be located not greater than 12 inches (305 mm) below the water level.

324.2 Requirements. The equipment area or room floor shall be of concrete or other suitable material having a smooth slip-resistant finish and have positive drainage, including a sump drain pump, if necessary. Floors shall have a slope toward the floor drain or sump drain pump adequate to prevent standing water at all times. The opening to the equipment room or area shall be designed to provide access for all anticipated equipment. At least one hose bibb with backflow preventer shall be located in the equipment room or ~~be accessible~~ allow for access within an adequate distance of the equipment room so that a hose can service the entire room.

409.4.3 Emergency response units. Pools covered by this chapter shall be provided with first aid equipment, including a first aid kit. First aid equipment and kits shall be located in ~~an accessible location to allow access~~.

504.1 Emergency shutoff switch. One emergency shutoff switch shall be provided to disconnect power to circulation and jet system pumps and air blowers. Provide access to emergency ~~Emergency~~ shutoff switches ~~shall be accessible~~. Such switches shall be located within sight of the spa and shall be located not less than 5 feet (1524 mm) but not greater than 10 feet (3048 mm) horizontally from the inside walls of the spa.

603.2 Class D-2 pools. Where a Class D-2 pool has a bather ~~accessible~~ depth greater than 4¹/₂ feet (1372 mm), the floor shall have a distinctive marking at the 4¹/₂ feet (1372 mm) water depth.

612.5.1 Water collection and treatment tank. Interactive water play features shall drain to a collection and treatment tank. The inside of the tank shall ~~be accessible~~ provide access for cleaning and inspection. The access hatch or lid shall be locked or require a tool to open. The tank capacity shall be not less than 1000 gallons or ten times the number of gallons in a minute when all nozzles are operating simultaneously, whichever is greater. The volume water in the tank, at the design water level, shall not decrease more than 15% of that volume when all pumps and

discharge piping fill with water to the discharge points of all nozzles.

Tanks shall be provided with a means to empty all water in the tank for the purposes of servicing or cleaning.

704.7.2 Accessible Access to pumps and motors. Pumps and motors shall be ~~accessible~~ provided access for inspection and service in accordance with the pump and motor manufacturer's instructions.

704.7.3 Pump shutoff valves. An ~~accessible~~ available means of ~~shut~~ shutting off of the suction and discharge piping for the pump shall be provided for maintenance and removal of the pump and be located with access.

1001.6 Access. Electrical components that require placement or servicing shall be ~~accessible~~ located with access.

Reason Statement: This effort was started by the CACs in 2015/16 code change cycle, and continued in 2018/19. This proposal is to provide coordination with the action taken with -P84-15, M2-15, RB2-16, F12-16, CE137-16 Part 1, CE29-19 Part 1 and 2. Because the term 'accessible' is most commonly understood as requiring access for persons with disabilities we are making the changes to delete the word accessible from the remaining codes and replace it with other words, defined terms or phrases that are not attributed to requiring access for the physically disabled. Many of the codes use the defined term 'access (to)' or 'ready access (to)' for access by maintenance and service personnel or fire departments. This proposal provides clarity and consistency in the remaining codes where those coordination modifications missed or came in as part of new code changes.

Similar proposals will be submitted for the Group B cycle for IRC, IECC and IEBC.

This proposal is submitted by the ICC Building Code Action Committee (BCAC), ICC Fire Code Action Committee (BCAC), and ICC Plumbing/Mechanical/Gas Code Action Committee (PMGCAC).

BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

The PMG CAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020, the PMG CAC has held several virtual meetings open to any interested party. Numerous interested parties attended the committee meetings and offered their input. Related documentation and reports are posted on the PMG CAC website at: PMGCAC.

The FCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes with regard to fire and life safety in new and existing buildings and facilities as well as the protection of life and property in wildland urban interface areas. In 2020 and 2021 the Fire-CAC held multiple virtual meetings that were open to any interested party. In addition, there were numerous virtual specific working group meetings that were also open to any interested parties, to develop, discuss and debate the proposed changes. Related documentation and reports are posted on the FCAC website at: FCAC.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. There is no change to any of the requirements. This is only a clarification in terminology.

G10-21

IBC: SECTION 202 (IFC[BE] SECTION 202)

Proponents: Jeffrey S. Grove, P.E. FSFPE, Jensen Hughes, representing Jensen Hughes (jgrove@jensenhughes.com)

THIS CODE CHANGE WILL BE HEARD BY THE MEANS OF EGRESS CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Building Code

Revise as follows:

[BE] FLOOR AREA, NET. The actual occupied area not including unoccupied accessory areas such as *corridors, stairways, ramps*, toilet rooms, elevator lobbies, mechanical rooms and closets.

Reason Statement: Elevator lobbies are used in some buildings to provide the hoistway protection required by 3006.2. Additionally, fire service access elevator lobbies are required in certain high-rise buildings by IBC 403.6.1 and 3007.6. Occupant evacuation elevator lobbies may be provided in accordance with IBC 403.5.2 (exception 1) and 3008.6.

In uses for which the occupant load is calculated using the gross floor area (such as business or residential), the area of elevator lobbies must be included in the gross floor area. However, in uses for which the occupant load is calculated using the net floor area (such as assembly), it is not necessary to include the area of elevator lobbies in the net floor area. Elevator lobbies are only occupied on a transient basis as people move to or from their destination. As such, the area of elevator lobbies should not be included in the net floor area, just like the area of stairs, corridors and bathrooms are currently excluded from the net floor area.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This code change proposal is submitted to clarify requirements. No cost impact is anticipated.

G12-21

IBC: SECTION 202

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@icc-safe.org)

2021 International Building Code

Revise as follows:

[BG] HIGH-RISE BUILDING. A building with the floor of an occupied ~~floor~~ story located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access.

Staff note: G12-21, G14-21, G15-21, G16-21 addresses requirements in a different or contradicting manner. G14-21, G15-21 and G16-21 addresses similar requirements in a different manner to those found in current IBC Section 503.1.4. The committee is urged to make their intentions clear with their actions on these proposals.

Reason Statement: The intent of this proposal is to clarify that an occupied roof that is over 75' where the floor is below 75' does not make this building a high-rise. Also thinking into the future, changing an unoccupied roof to an occupied roof should not change the building requirements to this extent. An open to the air occupied roof does not increase the hazard the same as a story.

If you make this a high-rise what could be added is additional alarm systems requirements, additional requirements for sprinklers, additional special inspections, luminous egress markings in the stairways, a fire command center, standpipes, secondary water supply, smoke detection systems, separation between stairway enclosures, smokeproof enclosures, etc. A justification or need for these systems for just an occupied roof has not been demonstrated.

This would be consistent with the change to Section 503.1.4 –

503.1.4 Occupied roofs. A roof level or portion thereof shall be permitted to be used as an occupied roof provided the occupancy of the roof is an occupancy that is permitted by Table 504.4 for the story immediately below the roof. The area of the occupied roofs shall not be included in the building area as regulated by Section 506. An occupied roof shall not be included in the building height or number of stories as regulated by Section 504, provided the penthouses and other enclosed roof structures comply with Section 1511.

Exceptions:

1. The occupancy located on an occupied roof shall not be limited to the occupancies allowed on the story immediately below the roof where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and occupant notification in accordance with Section 907.5 Sections 907.5.2.1 and 907.5.2.3 is provided in the area of the occupied roof. Emergency voice/alarm communication system notification per Section 907.5.2.2 shall also be provided in the area of the occupied roof where such system is required elsewhere in the building.

2. (no change to this exception)

A floor is a floor & a roof is a roof. Just because a roof is an "occupied" roof, does not make it a floor. The code has had provisions related to adequate egress from "occupied" roofs for years without classifying the roof as an occupancy for purposes of other code issues including height/area limitations, mixed uses, sprinklers, or type of construction.

The IBC currently requires a minimum of one standpipe hose connection needs to be extended to the roof (Section 905.4 – 2021 IBC).

It should be noted that there are new provisions in the 2015 IBC (Section 903.2.1.6) which addresses sprinkler protection due to an occupied roof and in the 2018 IBC (Section 503.1.4) which address occupied roofs based on the floor immediately below the roof. In both cases, if sprinkler protection is provided throughout the building, whether the roof is an occupied roof has no bearing on height/area limitations, occupancy separation requirements or the classification of the building as a high-rise.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

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

The technical criteria for high-rises would not change. This is a clarification. The opposite interpretation could have a significant increase in building costs because of the additional system indicated in the reason.

G13-21

IBC: 503.1.4

Proponents: Bill McHugh, The McHugh Company, representing National Fireproofing Contractors Association (bill@mc-hugh.us)

2021 International Building Code

Revise as follows:

503.1.4 Occupied roofs. A roof level or portion thereof shall be permitted to be used as an occupied roof provided the occupancy of the roof is an occupancy that is permitted by Table 504.4 for the *story* immediately below the roof. The area of the occupied roofs shall not be included in the *building area* as regulated by Section 506. An occupied roof shall not be included in the *building height* or number of *stories* as regulated by Section 504, provided that the *penthouses* and other enclosed *rooftop structures* comply with Section 1511.

Exceptions:

1. The occupancy located on an occupied roof shall not be limited to the occupancies allowed on the *story* immediately below the roof where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2 and occupant notification in accordance with Sections 907.5.2.1 and 907.5.2.3 is provided ~~in the area of~~ throughout the occupied roof. *Emergency voice/alarm communication* system notification per Section 907.5.2.2 shall also be provided ~~in the area of~~ throughout the ~~occupied~~ roof where such system is required elsewhere in the building.
2. Assembly occupancies shall be permitted on roofs of open parking spaces of Type I or Type II construction, in accordance with the exception to Section 903.2.1.6.

Reason Statement: The purpose of this code proposal is to bring what really happens in the world after the certificate of occupancy is issued to the code that regulates occupied or occupiable roofs. Will the size of the occupiable roof space expand and change after certificate of occupancy is issued? What about those that might wander on an outside the emergency voice/alarm communication system area? This proposal brings coverage for the alarm system and also includes the area as another story. The reason why this is needed is to tie the definition of occupiable space to technical requirements in Chapter 5. When a rooftop is occupied for a small number of people, its safety features need to be the same as if they were on the floor below - an assumed larger number of people. At new construction, we do not know how many people will be on that rooftop at any given time, hence the requirements.

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

However, alarm sound coverage needs to occur where people might be if on an occupied roof. What if they want privacy for a phone call and wander out of range with a headset on? Or, what if they go to relax privately in an area other than the 'occupied roof area'? While it increases costs, it also reflects what might occur in the real world.

G15-21

IBC: SECTION 202

Proponents: Stephen Thomas, Colorado Code Consulting, a Shums Coda Assoc Company, representing Colorado Chapter ICC (stthomas@coloradocode.net); Timothy Pate, representing Colorado Chapter Code Change Committee (tpate@broomfield.org)

2021 International Building Code

Revise as follows:

[BG] HIGH-RISE BUILDING. A building with an occupied floor or occupied roof located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access.

Staff note: G12-21, G14-21, G15-21, G16-21 addresses requirements in a different or contradicting manner. G14-21, G15-21 and G16-21 addresses similar requirements in a different manner to those found in current IBC Section 503.1.4. The committee is urged to make their intentions clear with their actions on these proposals.

Reason Statement: The existing language refers to a floor that is more than 75 feet above the lowest level of fire department vehicle access. It is our opinion that an occupied roof is also a floor. A floor is something you walk on and people walk on an occupied floor. Therefore, we are proposing to provide clarifying language to include occupied roofs above 75 feet to classify the building as a high-rise building. The presence of occupants and combustible furnishings add to the difficulty of performing ground-based fire fighting. It also limits the ability of the firefighters to perform rescue operations from the ground. By classifying an occupied roof over 57 feet, additional safety provisions are required in the building.

This proposal will have an impact on the application of the Existing Building Code. If someone wants to convert an existing roof to an occupied roof and the roof is more than 75 feet above the lowest level of fire department vehicle access, the building will need to be upgraded to comply with the high rise building provisions in IBC Section 403. The addition of floor area would make the building less code complying that it was prior to constructing the occupied roof.

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

If a jurisdiction did not previously classify an occupied roof as a floor, the increased safety requirements for high-rise buildings will increase the cost of construction. However, if they are already looking at the occupied roof as an occupied floor, the cost of construction would not increase.

G16-21

IBC: SECTION 202

Proponents: Lee Kranz, City of Bellevue, WA, representing Washington Association of Building Officials Technical Code Development Committee (lkranz@bellevuewa.gov)

2021 International Building Code

Revise as follows:

[BG] HIGH-RISE BUILDING. A building with an occupied roof having an occupant load of 50 or more, or an occupied floor, located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access.

Staff note: G12-21, G14-21, G15-21, G16-21 addresses requirements in a different or contradicting manner. G14-21, G15-21 and G16-21 addresses similar requirements in a different manner to those found in current IBC Section 503.1.4. The committee is urged to make their intentions clear with their actions on these proposals.

Reason Statement: In an October, 2019 article titled 'Through the roof: Occupied roofs in the 2018 IBC', Kim Paarlberg writes that "What has not been clarified is if an occupied roof is considered an occupied floor when determining does or does not have to meet the high-rise provisions in the code (definition of "high-rise building" and Section 403)". This code change is intended to address this lack of clarity. High-rise buildings utilizing the new regulations in the 2021 IBC for occupied roofs are gaining in popularity with building owners and designers. In the current definition of *High-rise building*, we measure from the lowest level of fire department vehicle access to the highest 'occupied floor' and if located more than 75 feet above this point then it is considered a *high-rise building*. What is not clear is if an occupied roof is considered the same as an occupied floor. This code change corrects this ambiguity by adding an occupied roof with an occupant load of 50 or more to the definition. The proposal includes a threshold of 50 people before the occupied roof is applicable to the definition because it was felt that less than 50 is not considered to be assembly and with less than 50 people, it would be manageable in terms of meeting a timed egress analysis to get the occupants to a safe location.

The standard for determining if a building should be provided with all the additional safety measures required for a high-rise building has historically been based on the location of the highest occupied floor. This is due to the limitations of most fire department ladder trucks to reach occupants on the upper portions of the building. Occupied roofs are not considered to be a 'Story' for determining the maximum height of a building but regardless, these areas are occupied and would not be within the reach limitations of a fire department ladder truck if located more than 75 feet above the lowest level of fire department vehicle access. Based on this concept, occupied roofs should be considered the same as any other occupied floor of a building.

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

The current definition of High-Rise Building is measured from the lowest level of fire department vehicle access to the highest occupied floor. If approved, this code change will define some buildings with an occupied roof as High-Rise which under the current definition, would be considered to be mid-rise. High-Rise buildings are more expensive to build because of the added life safety systems required in Section 403.

G19-21

IBC: 202 (New)

Proponents: Joseph H. Cain, P.E., Solar Energy Industries Association (SEIA), representing SEIA (JoeCainPE@gmail.com)

2021 International Building Code

Add new definition as follows:

OCCUPIABLE. Capable of being occupied by humans or fit for human occupancy.

Reason Statement: The purpose of this proposal is to open an opportunity to create an IBC definition of the single word "occupiable." The word "occupiable" is used in many locations throughout the IBC without a definition.

Section 201.4 of the 2021 IBC states: "Where terms are not defined through the methods authorized by this section, such terms shall have ordinarily accepted meanings such as the context implies." In the 2021 International Fire Code, Section 201.4 includes an additional sentence: "*Merriam Webster's Collegiate Dictionary, 11th Edition*, shall be considered as providing ordinarily accepted meanings."

The Merriam Webster's 11th Edition definition of the word "occupiable" is: "capable of being occupied or fit for occupancy (for example, 'an occupiable room')"

Notice that one word that is missing from the Merriam Webster definition is the word "human." While creating other proposals to respond to questions about fire concerns for overhead photovoltaic support structures, the topic repeatedly came up about definitions. Occupiable is used throughout the IBC. Occupiable space is defined but is too restrictive and does not apply to any use case that is not "a room or enclosed space."

The existing definition of "occupiable space" is included here for reference only.

[BG] OCCUPIABLE SPACE. A room or enclosed space designed for human occupancy in which individuals congregate for amusement, educational or similar purposes or in which occupants are engaged at labor, and which is equipped with *means of egress* and light and ventilation facilities meeting the requirements of this code.

Note that stakeholders will encounter proposals that seek to create or revise definitions for:

- * Occupiable
- * Occupiable space
- * Occupiable space, exterior
- * Occupiable space, rooftop

This proponent is open to suggestions from other stakeholders as to best solutions to create, revise, and correct these definitions so they work for all stakeholders.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This proposal creates a new definition only. It does not create or revise any technical requirements.

G20-21 Part I

PART I - IBC: SECTION 202 (New), 302.1, 503.1.4, 503.1.4.1, 1004.7, 1006.1, 1006.3, 1006.3.1, 1006.3.2, 1006.3.3, 1006.3.4, 1009.2.1, 1011.12, 1011.12.2, 1011.14, 1011.15, 1011.16, 1019.3, 1104.4; (IFC[BE]1004.7, 1006.1, 1006.3, 1006.3.1, 1006.3.2, 1006.3.4, 1006.3.3, 1009.2.1, 1011.12, 1011.12.2, 1011.14, 1011.15, 1011.16, 1019.3, 1104.4)

PART II - IFC: SECTION 202 (New), 903.2.1.6 (IBC[F] 903.2.1.6)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org); Michael O'Brian, representing FCAC (fcac@iccsafe.org)

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY THE GENERAL CODE COMMITTEE. PART II WILL BE HEARD BY THE FIRE CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Building Code

Add new definition as follows:

OCCUPIABLE ROOF. An exterior space on a roof that is designed for human occupancy, other than maintenance, and which is equipped with a means of egress system meeting the requirements of this code.

Revise as follows:

[BG] PENTHOUSE. An enclosed, ~~unoccupiable-unoccupied~~ rooftop structure used for sheltering mechanical and electrical equipment, tanks, elevators and related machinery, *stairways*, and vertical *shaft* openings.

302.1 Occupancy classification. Occupancy classification is the formal designation of the primary purpose of the building, structure or portion thereof. Structures shall be classified into one or more of the occupancy groups specified in this section based on the nature of the hazards and risks to building occupants generally associated with the intended purpose of the building or structure. An area, room or space that is intended to be occupied at different times for different purposes shall comply with all applicable requirements associated with such potential multipurpose. Structures containing multiple occupancy groups shall comply with Section 508 . Where a structure is proposed for a purpose that is not specified in this section, such structure shall be classified in the occupancy it most nearly resembles based on the fire safety and relative hazard. Occupiable ~~Occupied~~ roofs shall be classified in the group that the occupancy most nearly resembles, according to the fire safety and relative hazard, and shall comply with Section 503.1.4 .

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

503.1.4 Occupiable~~Occupied~~ roofs. A roof level or portion thereof shall be permitted to be used as an occupiable-occupied roof provided the occupancy of the roof is an occupancy that is permitted by Table 504.4 for the *story* immediately below the roof. The area of the occupiable-occupied roofs shall not be included in the *building area* as regulated by Section 506. An occupiable-occupied roof shall not be included in the *building height* or number of *stories* as regulated by Section 504, provided that the *penthouses* and other enclosed *rooftop structures* comply with Section 1511.

Exceptions:

1. The occupancy located on an occupiable-occupied roof shall not be limited to the occupancies allowed on the *story* immediately below the roof where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2 and occupant notification in accordance with Sections 907.5.2.1 and 907.5.2.3 is provided in the area of the occupiable-occupied roof. *Emergency voice/alarm communication* system notification per Section 907.5.2.2 shall also be provided in the area of the occupiable-occupied roof where such system is required elsewhere in the building.

2. Assembly occupancies shall be permitted on roofs of open parking spaces of Type I or Type II construction, in accordance with the exception to Section 903.2.1.6.

503.1.4.1 Enclosures over ~~occupiable-occupied~~ roof areas. Elements or structures enclosing the ~~occupiable-occupied~~ roof areas shall not extend more than 48 inches (1220 mm) above the surface of the ~~occupiable-occupied~~ roof.

Exception: *Penthouses* constructed in accordance with Section 1511.2 and towers, domes, spires and cupolas constructed in accordance with Section 1511.5.

1004.7 Outdoor areas. *Yards, patios, ~~occupiable-occupied~~ roofs, courts* 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.

1006.1 General. The number of *exits* or *exit access doorways* required within the *means of egress* system shall comply with the provisions of Section 1006.2 for spaces, including *mezzanines*, and Section 1006.3 for *stories* or ~~occupiable-occupied~~ roofs.

1006.3 Egress from stories or ~~occupiable-occupied~~ roofs. The *means of egress* system serving any *story* or ~~occupiable-occupied~~ roof shall be provided with the number of separate and distinct *exits* or access to *exits* based on the aggregate *occupant load* served in accordance with this section.

1006.3.1 Occupant load. Where *stairways* serve more than one *story*, or more than one *story* and an ~~occupiable-occupied~~ roof, only the *occupant load* of each *story* or ~~occupiable-occupied~~ roof, considered individually, shall be used when calculating the required number of *exits* or access to *exits* serving that *story*.

1006.3.2 Path of egress travel. The path of egress travel to an *exit* shall not pass through more than one adjacent *story*.

Exception: The path of egress travel to an *exit* shall be permitted to pass through more than one adjacent *story* in any of the following:

1. In Group R-1, R-2 or R-3 occupancies, *exit access stairways* and *ramps* connecting four stories or less serving and contained within an individual dwelling unit, sleeping unit or live/work unit.
2. *Exit access stairways* serving and contained within a Group R-3 congregate residence or a Group R-4 facility.
3. *Exit access stairways* and *ramps* within an *atrium* complying with Section 404.
4. *Exit access stairways* and *ramps* in *open parking garages* that serve only the parking garage.
5. *Exit access stairways* and *ramps* serving *open-air assembly seating* complying with the exit access travel distance requirements of Section 1030.7.
6. *Exit access stairways* and *ramps* between the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, *places of religious worship*, auditoriums and sports facilities.
7. Exterior *exit access stairways* and *ramps* between ~~occupiable-occupied~~ roofs.

1006.3.3 Egress based on occupant load. Each *story* and ~~occupiable-occupied~~ roof shall have the minimum number of separate and distinct *exits*, or access to *exits*, as specified in Table 1006.3.3. A single *exit* or access to a single *exit* shall be permitted in accordance with Section 1006.3.4. The required number of *exits*, or *exit access stairways* or *ramps* providing access to *exits*, from any *story* or ~~occupiable-occupied~~ roof shall be maintained until arrival at the *exit discharge* or a *public way*.

1006.3.4 Single exits. A single *exit* or access to a single *exit* shall be permitted from any *story* or ~~occupiable-occupied~~ roof where one of the following conditions exists:

1. The *occupant load*, number of *dwelling units* and exit access travel distance do not exceed the values in Table 1006.3.4(1) or 1006.3.4(2).
2. Rooms, areas and spaces complying with Section 1006.2.1 with *exits* that discharge directly to the exterior at the *level of exit discharge*, are permitted to have one *exit* or access to a single *exit*.
3. Parking garages where vehicles are mechanically parked shall be permitted to have one *exit* or access to a single *exit*.
4. Group R-3 and R-4 occupancies shall be permitted to have one *exit* or access to a single *exit*.

5. Individual single-story or multistory *dwelling units* shall be permitted to have a single *exit* or access to a single *exit* from the *dwelling unit* provided that both of the following criteria are met:

5.1. The *dwelling unit* complies with Section 1006.2.1 as a space with one *means of egress*.

5.2. Either the exit from the *dwelling unit* discharges directly to the exterior at the *level of exit discharge*, or the *exit access* outside the *dwelling unit's* entrance door provides access to not less than two *approved independent exits*.

1009.2.1 Elevators required. In buildings where a required accessible floor or ~~occupiable-occupied~~ roof is four or more stories above or below a *level of exit discharge*, not less than one required *accessible means of egress* shall be an elevator complying with Section 1009.4.

Exceptions:

1. In buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a *horizontal exit* and located at or above the *levels of exit discharge*.
2. In buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a *ramp* conforming to the provisions of Section 1012.

1011.12 Stairway to roof. In buildings four or more stories above grade plane, one *stairway* shall extend to the roof surface unless the roof has a slope steeper than four units vertical in 12 units horizontal (33-percent slope).

Exception: Other than where required by Section 1011.12.1, in buildings without an ~~occupiable-occupied~~ roof access to the roof from the top *story* shall be permitted to be by an *alternating tread device*, a ships ladder or a permanent ladder.

1011.12.2 Roof access. Where a *stairway* is provided to a roof, access to the roof shall be provided through a *penthouse* complying with Section 1511.2.

Exception: In buildings without an ~~occupiable-occupied~~ roof, access to the roof shall be permitted to be a roof hatch or trap door not less than 16 square feet (1.5 m²) in area and having a minimum dimension of 2 feet (610 mm).

1011.14 Alternating tread devices. *Alternating tread devices* are limited to an element of a *means of egress* in buildings of Groups F, H and S from a *mezzanine* not more than 250 square feet (23 m²) in area and that serves not more than five occupants; in buildings of Group I-3 from a guard tower, observation station or control room not more than 250 square feet (23 m²) in area and for access to ~~unoccupiable-unoccupied~~ roofs. *Alternating tread devices* used as a *means of egress* shall not have a rise greater than 20 feet (6096 mm) between floor levels or landings.

1011.15 Ship's ladders. Ship's ladders are permitted to be used in Group I-3 as a component of a *means of egress* to and from control rooms or elevated facility observation stations not more than 250 square feet (23 m²) with not more than three occupants and for access to ~~unoccupiable-unoccupied~~ roofs. The minimum clear width at and below the *handrails* shall be 20 inches (508 mm). Ship's ladders shall be designed for the live loads indicated in Section 1607.17.

1011.16 Ladders. Permanent ladders shall not serve as a part of the *means of egress* from occupied spaces within a building. Permanent ladders shall be constructed in accordance with Section 306.5 of the International Mechanical Code and designed for the live loads indicated in Section 1607.17. Permanent ladders shall be permitted to provide access to the following areas:

1. Spaces frequented only by personnel for maintenance, repair or monitoring of equipment.
2. Nonoccupiable spaces accessed only by catwalks, crawl spaces, freight elevators or very narrow passageways.
3. Raised areas used primarily for purposes of security, life safety or fire safety including, but not limited to, observation galleries, prison guard towers, fire towers or lifeguard stands.
4. Elevated levels in Group U not open to the general public.
5. ~~Nonoccupiable Nonoccupied~~ roofs that are not required to have *stairway* access in accordance with Section 1011.12.1.
6. Where permitted to access equipment and appliances in accordance with Section 306.5 of the International Mechanical Code.

1019.3 Occupancies other than Groups I-2 and I-3. In other than Group I-2 and I-3 occupancies, floor openings containing *exit access stairways* or *ramps* shall be enclosed with a shaft enclosure constructed in accordance with Section 713.

Exceptions:

1. *Exit access stairways* and *ramps* that serve or atmospherically communicate between only two adjacent stories. Such interconnected stories shall not be open to other stories.

2. In Group R-1, R-2 or R-3 occupancies, *exit access stairways* and *ramps* connecting four stories or less serving and contained within an individual dwelling unit or sleeping unit or live/work unit.
3. *Exit access stairways* serving and contained within a Group R-3 congregate residence or a Group R-4 facility are not required to be enclosed.
4. *Exit access stairways* and *ramps* in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, where the area of the vertical opening between stories does not exceed twice the horizontal projected area of the stairway or *ramp* and the opening is protected by a draft curtain and closely spaced sprinklers in accordance with NFPA 13. In other than Group B and M occupancies, this provision is limited to openings that do not connect more than four stories.
5. *Exit access stairways* and *ramps* within an *atrium* complying with the provisions of Section 404.
6. *Exit access stairways* and *ramps* in *open parking garages* that serve only the parking garage.
7. *Exit access stairways* and *ramps* serving smoke-protected or *open-air assembly seating* complying with the exit access travel distance requirements of Section 1030.7.
8. *Exit access stairways* and *ramps* between the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, *places of religious worship*, auditoriums and sports facilities.
9. Exterior *exit access stairways* or *ramps* between occupiable ~~occupied~~ roofs.

1104.4 Multistory buildings and facilities. At least one *accessible* route shall connect each accessible *story*, *mezzanine* and occupiable ~~occupied~~ roofs in multilevel buildings and *facilities*.

Exceptions:

1. An *accessible* route is not required to *stories*, *mezzanines* and occupiable ~~occupied~~ roofs that have an aggregate area of not more than 3,000 square feet (278.7 m²) and are located above and below accessible levels. This exception shall not apply to:
 - 1.1. Multiple tenant facilities of Group M occupancies containing five or more tenant spaces used for the sales or rental of goods and where at least one such tenant space is located on a floor level above or below the accessible levels.
 - 1.2. *Stories* or *mezzanines* containing offices of health care providers (Group B or I).
 - 1.3. Passenger transportation facilities and airports (Group A-3 or B).
 - 1.4. Government buildings.
 - 1.5. Structures with four or more dwelling units.
2. *Stories*, *mezzanines* or occupiable ~~occupied~~ roofs that do not contain accessible elements or other spaces as determined by Section 1108 or 1109 are not required to be served by an accessible route from an *accessible* level.
3. In air traffic control towers, an *accessible route* is not required to serve the cab and the floor immediately below the cab.
4. Where a two-story building or facility has one *story* or *mezzanine* with an *occupant load* of five or fewer persons that does not contain *public use* space, that *story* or *mezzanine* shall not be required to be connected by an *accessible route* to the *story* above or below.

Staff Note: G20-21, G21-21 and G22-21 addresses requirements in a different or contradicting manner. The committee is urged to make their intentions clear with their actions on these proposals.

G20-21 Part II

PART II - IFC: SECTION 202 (New), 903.2.1.6 (IBC[F] 903.2.1.6)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org); Michael O'Brian, representing FCAC (fcac@iccsafe.org)

2021 International Fire Code

Add new definition as follows:

OCCUPIABLE ROOF. An exterior space on a roof that is designed for human occupancy, other than maintenance, and which is equipped with a means of egress system meeting the requirements of this code.

Revise as follows:

903.2.1.6 Assembly occupancies on roofs. Where an ~~occupied~~ occupiable roof has an assembly occupancy with an *occupant load* exceeding 100 for Group A-2 and 300 for other Group A occupancies, all floors between the ~~occupied~~ occupiable roof and the *level of exit discharge* shall be equipped with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2.

Exception: Open parking garages of Type I or Type II construction.

Staff Note: G20-21, G21-21 and G22-21 addresses requirements in a different or contradicting manner. The committee is urged to make their intentions clear with their actions on these proposals.

Reason Statement: Over the last several cycles, code provisions have been added to address issues related to occupied/occupiable, vegetative and landscaped roofs. In some cases, the terms have been used interchangeably, in others applying to specific types of roof systems. With the increasing number of provisions, a definition is needed. A proposal last cycle (G7-19) attempted to add a definition for occupiable roof but was disapproved for several reasons including the fact it did not correlate with the fact the code uses "occupied roof" in some sections and "occupiable roof" in others.

This code proposal both adds a definition for "occupiable roof" and changes terminology throughout the code to be consistent with use of "occupiable roof" rather than "occupied roof". The definition is intended to parallel the existing code definition for occupiable space:

[BG] OCCUPIABLE SPACE. A room or enclosed space designed for human occupancy in which individuals congregate for amusement, educational or similar purposes or in which occupants are engaged at labor, and which is equipped with means of egress and light and ventilation facilities meeting the requirements of this code.

The proposed definition is different in a few key ways: The laundry list of uses is left out, and the one clarification made that access for maintenance of rooftop mechanical equipment or other maintenance does not trigger assembly live load requirements or other provisions related to occupiable roofs. The references to light and ventilation are left out as occupiable roofs are exterior spaces. No mechanical ventilation is necessary, and the code does not require lighting for exterior spaces other than portions of the means of egress.

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

BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

The FCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes with regard to fire and life safety in new and existing buildings and facilities as well as the protection of life and property in wildland urban interface areas. In 2020 and 2021 the Fire-CAC held multiple virtual meetings that were open to any interested party. In addition, there were numerous virtual specific working group meetings that were also open to any interested parties, to develop, discuss and debate the proposed changes. Related documentation and reports are posted on the FCAC website at: FCAC.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. The code change is purely editorial and does not affect how occupiable roofs are designed or constructed.

G21-21

IBC: SECTION 202

Proponents: Bill McHugh, The McHugh Company, representing National Fireproofing Contractors Association (bill@mc-hugh.us)

2021 International Building Code

Revise as follows:

[BG] OCCUPIABLE SPACE. A room, roof or enclosed space designed for human occupancy in which individuals congregate for amusement, educational or similar purposes or in which occupants are engaged at labor, and which is equipped with *means of egress* and light and *ventilation* facilities meeting the requirements of this code.

Staff Note: G20-21, G21-21 and G22-21 addresses requirements in a different or contradicting manner. The committee is urged to make their intentions clear with their actions on these proposals.

Reason Statement: This proposal is meant to clarify the definition for "occupiable space". When reviewing the 2021 IBC, it seems that an occupiable roof is not included in the definition of occupiable space. There has been a trend in recent years that the roof is now a place to have an event, amusement, or similar purpose. Without including the roof in the occupiable space definition, it does not get the same protection as the occupiable floor below it. The rationale might be, 'it's not as many people', or some other reason. During the 2008 recession, floors in office buildings had reduced occupant loads. Did we remove code required protection of that floor because there were less occupants? No. Adding the word 'roof' to the definition of occupiable space will mean building safety requirements become required for the occupiable roof, with the exceptions that currently exist. However, when an 'amusement' takes place of any kind, people on the roof deserve the same protection as if they were on the floor below.

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

If the interpretation that protection on an occupied roof is needed in only a few places, or not equal to the floor below, then this will increase the cost of construction.

G22-21

IBC: SECTION 202

Proponents: Joseph H. Cain, P.E., Solar Energy Industries Association (SEIA), representing SEIA (JoeCainPE@gmail.com)

2021 International Building Code

Revise as follows:

[BG] OCCUPIABLE SPACE. A room or enclosed space designed for human occupancy, ~~in which individuals congregate for amusement, educational or similar purposes or in which occupants are engaged at labor, and which is~~ equipped with *means of egress* and light and *ventilation* facilities meeting the requirements of this code.

Staff Note: G20-21, G21-21 and G22-21 addresses requirements in a different or contradicting manner. The committee is urged to make their intentions clear with their actions on these proposals.

Reason Statement: It is important to note the word "occupiable" is used in many locations within the IBC, without an IBC definition. It is also important to note the terms "occupiable" and "occupiable space" are generally understood to have the meaning that humans could be there. The existing definition of "occupiable space" in the 2021 IBC is inadequate because it is constrained to "rooms or enclosed spaces." Therefore, the term "occupiable space" does not adequately or correctly represent any space that is designed for human occupancy but is not interior to a building in "a room or enclosed space."

For example, the current definition of "occupiable space" is not suitable to "occupiable roofs" or other outdoor spaces where humans can congregate.

The definition of "exterior occupiable space" is addressed in a separate but related proposal. Further, another proposal for "occupiable PV support structures" could make use of a new definition for exterior occupiable space if successful, but is not dependent on approval of that definition. Yet another proposal seeks to define the single word "occupiable."

The proponent is open to suggestion, and hopes that several related proposal related to "occupiable" will trigger some collaboration among stakeholders to solve multiple problems.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This proposal is for revision of an existing definition only. It does not create nor modify any technical requirements.

G23-21

IBC: SECTION 202 (New)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

THIS CODE CHANGE WILL BE HEARD BY THE MEANS OF EGRESS CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Building Code

Add new definition as follows:

OVERHEAD DOOR STOP. Door hardware mounted at the top of the door and / or to the door frame which limits the opening of the door.

Reason Statement: Proposal E41-18 revised the 2021 IBC to permit installation of overhead door stops where the overhead door stop encroaches into the door opening at the top of the opening. See the exception to 2021 IBC Section 1010.1.1.1. During review of the changes to the 2021 IBC, it was noted a definition (and picture) of an overhead door stop would be helpful with differentiating this door hardware item from the stop of the door frame at the top of the door opening. An “overhead door stop” is door hardware mounted at the top of a swinging door and / or to the door frame which limits opening of the door. Overhead door stops are an alternative to door stops screwed to the floor or to the wall. Most overhead door stops encroach slightly into the top of the doorway opening. Overhead door stops may also incorporate friction or damping to dampen the swinging of a door. An overhead door stop may have a “catch” to help hold the door in an open position.



Overhead door stop.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This is not a change in requirements - just a definition for a term already used in the code.

G28-21

IBC: SECTION 202

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

THIS CODE CHANGE WILL BE HEARD BY THE MEANS OF EGRESS CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Building Code

Revise as follows:

[BE] PUBLIC-USE AREAS. Interior or exterior rooms or spaces that are made available to the general public. A public entrance may be a door, or two or more doors in one opening such as a pair of doors or a bank of doors.

[BE] RESTRICTED ENTRANCE. An entrance that is made available for common use on a controlled basis, but not public use, and that is not a service entrance. A service entrance may be a door, or two or more doors in one opening such as a pair of doors or a bank of doors.

[BE] SERVICE ENTRANCE. An entrance intended primarily for delivery of goods or services. A restricted entrance may be a door, or two or more doors in one opening such as a pair of doors or a bank of doors.

Reason Statement: The intent of this proposal is to clarify that an entrance may be a door, or may be multiple adjacent doors. This is done by adding to the definitions of public entrance, service entrance, and restricted entrance to address entrances which are a pair of doors or a bank of doors.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

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

G34-21

IBC: 305.2.2, 305.2.3, 308.5.3, 308.5.4, 310.4.1

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

SECTION 305 EDUCATIONAL GROUP E.

305.2 Group E, day care facilities. This group includes buildings and structures or portions thereof occupied by more than five children older than 2¹/₂ years of age who receive educational, supervision or *personal care services* for fewer than 24 hours per day.

305.2.1 Within places of religious worship. Rooms and spaces within *places of religious worship* providing such day care during religious functions shall be classified as part of the primary occupancy.

Revise as follows:

305.2.2 Five or fewer children. A facility having five or fewer children receiving such day care shall be classified as part of the primary occupancy. Such a facility, located within a dwelling unit that is within the scope of the International Residential Code, shall be permitted to be constructed in accordance with this code or the International Residential Code.

Delete without substitution:

~~**305.2.3 Five or fewer children in a dwelling unit.** A facility such as the above within a *dwelling unit* and having five or fewer children receiving such day care shall be classified as a Group R-3 occupancy or shall comply with the *International Residential Code*.~~

SECTION 308 INSTITUTIONAL GROUP I.

308.5 Institutional Group I-4, day care facilities. Institutional Group I-4 occupancy shall include buildings and structures occupied by more than five persons of any age who receive *custodial care* for fewer than 24 hours per day by persons other than parents or guardians; relatives by blood, marriage or adoption; and in a place other than the home of the person cared for. This group shall include, but not be limited to, the following:

- Adult day care
- Child day care

308.5.1 Classification as Group E. A child day care facility that provides care for more than five but not more than 100 children 2¹/₂ years or less of age, where the rooms in which the children are cared for are located on a *level of exit discharge* serving such rooms and each of these child care rooms has an *exit* door directly to the exterior, shall be classified as Group E.

308.5.2 Within a place of religious worship. Rooms and spaces within *places of religious worship* providing such care during religious functions shall be classified as part of the primary occupancy.

Revise as follows:

308.5.3 Five or fewer persons receiving care. A facility having five or fewer persons receiving *custodial care* shall be classified as part of the primary occupancy. Such a facility, located within a dwelling unit that is within the scope of the International Residential Code, shall be permitted to be constructed in accordance with this code or the International Residential Code.

Delete without substitution:

~~**308.5.4 Five or fewer persons receiving care in a dwelling unit.** A facility such as the above within a *dwelling unit* and having five or fewer persons receiving *custodial care* shall be classified as a Group R-3 occupancy or shall comply with the *International Residential Code*.~~

SECTION 310 RESIDENTIAL GROUP R.

Revise as follows:

~~**310.4.1**~~**310.1.1 Care facilities within a dwelling.** Care facilities for five or fewer persons receiving care or a day care that are located within a single-family dwelling unit are permitted to comply that is within the scope of the *International Residential Code*, shall be permitted to be constructed in accordance with this code or with the *International Residential Code*, provided facilities constructed using the *International Residential Code* shall be protected by an automatic sprinkler system is installed in accordance with Section 903.3.1.3 or Section P2904 of the *International Residential Code*.

Reason Statement: The purpose of this change is to remove a technical glitch for where Group R-2 townhouses or apartments may also have a small day care facility. Day care facilities can occur in apartments, townhouses and single family homes. By allowing for 5 or fewer to match the main occupancy, this would still allow for those Group R-3 as a classification in single-family, duplex and Group R-3 townhouses – which is permitted in the current text. This change will also allow for similar facilities in apartments or Group R-2 townhouses. The literal text in 305.2.3 and 308.5.4 says a day care in a dwelling unit make this an R-3 even though the building may be Group R-2.

For facilities that meet the scoping of the IRC (single family, duplex and townhouse), the day care and small care facilities can continue to be constructed under the IRC.

The move of 310.4.1 is because this is no longer just a Group R-3 consideration.

This is one of a group of proposals intended to coordinate the scoping items in IBC Section 101.2 and IRC 101.2. While the proposals work together, then also work separately. The proposal for coordination will be in Group B.

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

BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

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

This is basically a coordination item for what facilities can use IRC. This should not change construction requirements.

G36-21

IBC: [F]TABLE 307.1(1), [F]TABLE 307.1(2), [F]307.1.1, [F]TABLE 307.1.1 (New), [F]414.1, [F]415.1; IFC: 5001.1, TABLE 5001.1 (New), TABLE 5003.1.1(1), TABLE 5003.1.1(2)

Proponents: Jeffrey Shapiro, representing Self (jeff.shapiro@intlcodeconsultants.com)

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

2021 International Building Code

Revise as follows:

[F] TABLE 307.1(1)

MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS POSING A PHYSICAL HAZARD^{a, c, i, m, n, p}

MATERIAL	CLASS	GROUP WHEN THE MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED	STORAGE ^b			USE-CLOSED SYSTEMS ^b			USE-OPEN SYSTEMS ^b	
			Solid pounds(cubic feet)	Liquid gallons (pounds)	Gas (cubic feet at NTP)	Solid pounds(cubic feet)	Liquid gallons (pounds)	Gas (cubic feet at NTP)	Solid pounds(cubic feet)	Liquid gallons (pounds)
Combustible dust	NA	H-2	See Note q	NA	NA	See Note q	NA	NA	See Note q	NA
Combustible fiber ^q	Loose	H-3	(100)	NA	NA	(100)	NA	NA	(20)	NA
	Baled ^e		(1,000)			(1,000)			(200)	
Combustible liquid ^{e, r}	II	H-2 or H-3	NA	120 ^{d, e}	NA	NA	NA	NA	120 ^d	30 ^d
	IIIA	H-2 or H-3		330 ^{d, e}					330 ^d	80 ^d
	IIIB	NA		13,200 ^{e, f}					13,200 ^f	3,300 ^f
Cryogenic flammable	NA	H-2	NA	45 ^d	NA	NA	45 ^d	NA	NA	10 ^d
Cryogenic inert	NA	NA	NA	NA	NL	NA	NA	NL	NA	NA
Cryogenic oxidizing	NA	H-3	NA	45 ^d	NA	NA	45 ^d	NA	NA	10 ^d
Explosives	Division 1.1	H-1	1 ^{e, g}	(1) ^{e, g}	NA	0.25 ^g	(0.25) ^g	NA	0.25 ^g	(0.25) ^g
	Division 1.2	H-1	1 ^{e, g}	(1) ^{e, g}		0.25 ^g	(0.25) ^g		0.25 ^g	(0.25) ^g
	Division 1.3	H-1 or H-2	5 ^{e, g}	(5) ^{e, g}		1 ^g	(1) ^g		1 ^g	(1) ^g
	Division 1.4	H-3	50 ^{e, g}	(50) ^{e, g}		50 ^g	(50) ^g		NA	NA
	Division 1.4G	H-3	125 ^{e, l}	NA		NA	NA		NA	NA
	Division 1.5	H-1	1 ^{e, g}	(1) ^{e, g}		0.25 ^g	(0.25) ^g		0.25 ^g	(0.25) ^g
	Division 1.6	H-1	1 ^{e, g}	NA		NA	NA		NA	NA
Flammable gas	Gaseous	H-2	NA	NA	1,000 ^{d, e}	NA	NA	1,000 ^{d, e}	NA	NA
	Liquefied			(150) ^{d, e}	NA		(150) ^{d, e}	NA		
Flammable liquid ^{e, o}	IA	H-2 or H-3	NA	30 ^{d, e}	NA	NA	30 ^d	NA	NA	10 ^d
	IB and IC			120 ^{d, e}			120 ^d		30 ^d	
Flammable liquid, combination (IA, IB, IC) ^{e, o}	NA	H-2 or H-3	NA	120 ^{d, e, h}	NA	NA	120 ^{d, h}	NA	NA	30 ^{d, h}
Flammable solid	NA	H-3	125 ^{d, e}	NA	NA	125 ^d	NA	NA	25 ^d	NA
Inert gas	Gaseous	NA	NA	NA	NL	NA	NA	NL	NA	NA
	Liquefied	NA	NA	NA	NL	NA	NA	NL	NA	NA
Organic peroxide	UD	H-1	1 ^{e, g}	(1) ^{e, g}	NA	0.25 ^g	(0.25) ^g	NA	0.25 ^g	(0.25) ^g
	I	H-2	5 ^{d, e}	(5) ^{d, e}		1 ^d	(1) ^d		1 ^d	(1) ^d
	II	H-3	50 ^{d, e}	(50) ^{d, e}		50 ^d	(50) ^d		10 ^d	(10) ^d
	III	H-3	125 ^{d, e}	(125) ^{d, e}		125 ^d	(125) ^d		25 ^d	(25) ^d
	IV	NA	NL	NL		NL	NL		NL	NL

	V	NA	NL	NL		NL	NL		NL	NL
Oxidizer	4	H-1	1 ^g	(1) ^{e, g}	NA	0.25 ^g	(0.25) ^g	NA	0.25 ^g	(0.25) ^g
	3 ^k	H-2 or H-3	10 ^{d, e}	(10) ^{d, e}		2 ^d	(2) ^d		2 ^d	(2) ^d
	2	H-3	250 ^{d, e}	(250) ^{d, e}		250 ^d	(250) ^d		50 ^d	(50) ^d
	1	NA	4,000 ^{e, f}	(4,000) ^{e, f}		4,000 ^f	(4,000) ^f		1,000 ^f	(1,000) ^f
Oxidizing gas	Gaseous	H-3	NA	NA	1,500 ^{d, e}	NA	NA	1,500 ^{d, e}	NA	NA
	Liquefied			(150) ^{d, e}	NA		(150) ^{d, e}	NA		
Pyrophoric	NA	H-2	4 ^{e, g}	(4) ^{e, g}	50 ^{e, g}	1 ^g	(1) ^g	10 ^{e, g}	0	0
Unstable (reactive)	4	H-1	1 ^{e, g}	(1) ^{e, g}	10 ^{e, g}	0.25 ^g	(0.25) ^g	2 ^{e, g}	0.25 ^g	(0.25) ^g
	3	H-1 or H-2	5 ^{d, e}	(5) ^{d, e}	50 ^{d, e}	1 ^d	(1) ^d	10 ^{d, e}	1 ^d	(1) ^d
	2	H-3	50 ^{d, e}	(50) ^{d, e}	750 ^{d, e}	50 ^d	(50) ^d	750 ^{d, e}	10 ^d	(10) ^d
	1	NA	NL	NL	NL	NL	NL	NL	NL	NL
Water reactive	3	H-2	5 ^{d, e}	(5) ^{d, e}	NA	5 ^d	(5) ^d	NA	1 ^d	(1) ^d
	2	H-3	50 ^{d, e}	(50) ^{d, e}		50 ^d	(50) ^d		10 ^d	(10) ^d
	1	NA	NL	NL		NL	NL		NL	NL

For SI: 1 cubic foot = 0.028 m³, 1 pound = 0.454 kg, 1 gallon = 3.785 L.

NL = Not Limited; NA = Not Applicable; UD = Unclassified Detonable.

- a. For use of control areas, see Section 414.2.
- b. The aggregate quantity in use and storage shall not exceed the quantity specified for storage.
- c. ~~For hazardous materials in Group B higher education laboratory occupancies, See Section 428 and Chapter 38 of the International Fire Code. The quantities of alcoholic beverages in retail and wholesale sales occupancies shall not be limited provided the liquids are packaged in individual containers not exceeding 1.3 gallons. In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs or consumer products, and cosmetics containing not more than 50 percent by volume of water miscible liquids with the remainder of the solutions not being flammable, shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.~~
- d. Maximum allowable quantities shall be increased 100 percent in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. Where Note e also applies, the increase for both notes shall be applied accumulatively.
- e. Maximum allowable quantities shall be increased 100 percent when stored in approved storage cabinets, day boxes, gas cabinets, gas rooms or exhausted enclosures or in listed safety cans in accordance with Section 5003.9.10 of the International Fire Code. Where Note d also applies, the increase for both notes shall be applied accumulatively.
- f. Quantities shall not be limited in a building equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
- g. Allowed only in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
- h. Containing not more than the maximum allowable quantity per control area of Class IA, IB or IC flammable liquids.
- i. ~~The maximum allowable quantity shall not apply to fuel oil storage complying with Section 605.4.2 of the International Fire Code.~~
- j. Quantities in parentheses indicate quantity units in parentheses at the head of each column.
- k. A maximum quantity of 220 pounds of solid or 22 gallons of liquid Class 3 oxidizers is allowed when such materials are necessary for maintenance purposes, operation or sanitation of equipment when the storage containers and the manner of storage are approved.
- l. Net weight of the pyrotechnic composition of the fireworks. Where the net weight of the pyrotechnic composition of the fireworks is not known, 25 percent of the gross weight of the fireworks, including packaging, shall be used.
- m. For gallons of liquids, divide the amount in pounds by 10 in accordance with Section 5003.1.2 of the International Fire Code.
- n. ~~For storage and display quantities oxidizers, unstable (reactive) materials, and water reactive materials stored or displayed in Group M occupancies and storage quantities or stored in Group S occupancies, see section 414.2.5.1 complying with Section 414.2.5, see Tables 414.2.5(1) and 414.2.5(2).~~
- o. ~~For flammable and combustible liquid storage in Group M occupancy wholesale and retail sales uses, see Section 414.2.5.2. Densely packed baled cotton that complies with the packing requirements of ISO 8115 shall not be included in this material class.~~

- p. ~~The following shall not be included in determining the maximum allowable quantities:~~
1. ~~Liquid or gaseous fuel in fuel tanks on vehicles.~~
 2. ~~Liquid or gaseous fuel in fuel tanks on motorized equipment operated in accordance with the *International Fire Code*.~~
 3. ~~Gaseous fuels in piping systems and fixed appliances regulated by the *International Fuel Gas Code*.~~
 4. ~~Liquid fuels in piping systems and fixed appliances regulated by the *International Mechanical Code*.~~
 5. ~~Alcohol-based hand rubs classified as Class I or II liquids in dispensers that are installed in accordance with Sections 5705.5 and 5705.5.1 of the *International Fire Code*. The location of the alcohol-based hand rub (ABHR) dispensers shall be provided in the construction documents.~~
- q. Where manufactured, generated or used in such a manner that the concentration and conditions create a fire or explosion hazard based on information prepared in accordance with Section 414.1.3.

[F] TABLE 307.1(2)

MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS POSING A HEALTH HAZARD^{a, c, f, h, i}

MATERIAL	STORAGE ^b			USE-CLOSED SYSTEMS ^b			USE-OPEN SYSTEMS ^b	
	Solid pounds ^{d, e, f}	Liquid gallons (pounds) ^{d, e, f}	Gas cubic feet at NTP (pounds) ^d	Solid pounds ^d	Liquid gallons (pounds) ^d	Gas cubic feet at NTP (pounds) ^d	Solid pounds ^d	Liquid gallons (pounds) ^d
Corrosives	5,000	500	Gaseous 810 ^e	5,000	500	Gaseous 810 ^e	1,000	100
			Liquefied (150)			Liquefied (150)		
Highly Toxic	10	(10)	Gaseous 20 ^g	10	(10)	Gaseous 20 ^g	3	(3)
			Liquefied (4) ^g			Liquefied (4) ^g		
Toxic	500	(500)	Gaseous 810 ^e	500	(500)	Gaseous 810 ^e	125	(125)
			Liquefied (150) ^e			Liquefied (150) ^e		

For SI: 1 cubic foot = 0.028 m³, 1 pound = 0.454 kg, 1 gallon = 3.785 L.

- a. For use of control areas, see Section 414.2.
- b. The aggregate quantity in use and storage shall not exceed the quantity specified for storage.
- c. ~~For hazardous materials in Group B higher education laboratory occupancies, see Section 428 and Chapter 38 of the International Fire Code. In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs or consumer products, and cosmetics containing not more than 50 percent by volume of water-miscible liquids and with the remainder of the solutions not being flammable, shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.~~
- d. Maximum allowable quantities shall be increased 100 percent in buildings equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1. Where Note e also applies, the increase for both notes shall be applied accumulatively.
- e. Maximum allowable quantities shall be increased 100 percent where stored in approved storage cabinets, gas cabinets or exhausted enclosures as specified in the *International Fire Code*. Where Note d also applies, the increase for both notes shall be applied accumulatively.
- f. ~~For corrosive, highly toxic and toxic materials, stored or displayed in Group M occupancies or stored in Group S occupancies, see Section 414.2.5.1. For storage and display quantities in Group M and storage quantities in Group S occupancies complying with Section 414.2.5, see Tables 414.2.5(1) and 414.2.5(2).~~
- g. Allowed only where stored in approved exhausted gas cabinets or exhausted enclosures as specified in the *International Fire Code*.
- h. Quantities in parentheses indicate quantity units in parentheses at the head of each column.
- i. For gallons of liquids, divide the amount in pounds by 10 in accordance with Section 5003.1.2 of the *International Fire Code*.

[F] 307.1.1 Occupancy Exemptions~~Uses other than Group H.~~ Storage, use and handling of hazardous materials in accordance with Table 307.1.1 shall not be counted as contributing to Maximum Allowable Quantities and shall not cause classification of an occupancy to be Group H. Such storage, use and handling shall comply with applicable provisions of the *International Fire Code*.

~~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 storage battery systems installed in accordance with the *International Fire 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 product storage, aerosol cooking spray products or plastic aerosol products 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. ~~Stationary fuel cell power systems installed in accordance with the *International Fire Code*.~~
16. ~~Capacitor energy storage systems in accordance with the *International Fire Code*.~~
17. ~~Group B higher education laboratory occupancies complying with Section 428 and Chapter 38 of the *International Fire Code*.~~
18. ~~Distilling or brewing of beverages conforming to the requirements of the *International Fire Code*.~~
19. ~~The storage of beer, distilled spirits and wines in barrels and casks conforming to the requirements of the *International Fire Code*.~~

Add new text as follows:

**TABLE 307.1.1
HAZARDOUS MATERIAL EXEMPTIONS^a**

Material Classification	Occupancy or Application	Exemption
Combustible fiber	<u>Baled Cotton</u>	<u>Densely packed baled cotton shall not be classified as combustible fiber, provided that the bales comply with the packing requirements of ISO 8115</u>
	<u>Building materials</u>	<u>The quantity of commonly used building materials that are classified as corrosive materials is not limited</u>
Corrosive	<u>Personal and household products</u>	<u>The quantity of personal and household products that are classified as corrosive materials is not limited in retail displays, provided that the products are in original packaging</u>
	<u>Retail and wholesale sales occupancies</u>	<u>The quantity of medicines, foodstuffs or consumer products, and cosmetics containing not more than 50 percent by volume of water-miscible liquids with the remainder of the solutions not being flammable, is not limited.</u> <u>To qualify for this allowance, such materials shall be packaged in individual containers not exceeding 1.3 gallons.</u>
Explosives	<u>Groups B, F, M and S</u>	<u>Storage of special industrial explosive devices are not limited</u>
	<u>Groups M and R-3</u>	<u>Storage of black powder, smokeless propellant, and small arms primers are not limited</u>
Flammable and combustible liquids and gases	<u>Aerosols</u>	<u>Buildings and structures occupied for aerosol product storage, aerosol cooking spray products or plastic aerosol 3 products shall be classified as Group S-1</u>
	<u>Alcoholic beverages</u>	<u>The quantity of alcoholic beverages in liquor stores and distributors without bulk storage is not limited</u>
		<u>The quantity of alcoholic beverages in distilling or brewing of beverages is not limited</u>
		<u>The storage quantity of beer, distilled spirits and wines in barrels and casks is not limited</u>
		<u>The quantity of alcoholic beverages in retail and wholesale sales occupancies is not limited. To qualify for this allowance, beverages shall be packaged in individual containers not exceeding 1.3 gallons</u>
	<u>Cleaning establishments with combustible liquid solvents</u>	<u>The quantity of combustible liquid solvents used in closed systems and having a flash point at or above 140° F (60° C) is not limited. To qualify for this allowance, equipment shall be listed by an approved testing agency and the occupancy shall be 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</u>
		<u>The quantity of combustible liquid solvents having a flash point at or above 200° F (93° C) is not limited</u>
	<u>Closed piping systems</u>	<u>The quantity of flammable and combustible liquids and gases utilized for the operation of machinery or equipment is not limited</u>
	<u>Fuel</u>	<u>The quantity of liquid or gaseous fuel in fuel tanks on vehicles or motorized equipment is not limited</u>
		<u>The quantity of gaseous fuels in piping systems and fixed appliances regulated by the International Fuel Gas Code is not limited</u>
		<u>The quantity of liquid fuels in piping systems and fixed appliances regulated by the International Mechanical Code is not limited</u>
	<u>Fuel oil</u>	<u>The quantity of fuel oil storage complying with Section 603.3.2 of the International Fire Code is not limited</u>
	<u>Flammable finishing operations using flammable and combustible liquids</u>	<u>Buildings and structures occupied for the application of flammable finishes. Such buildings and areas shall comply with Section 416</u>
	<u>Hand sanitizer</u>	<u>The quantity of alcohol-based hand rubs classified as Class I or II liquids in dispensers installed in accordance with Sections 5705.5 and 5705.5.1 of the International Fire Code is not limited. The location of the alcohol-based hand rub (ABHR) dispensers shall be provided in the construction documents</u>
<u>Retail and wholesale sales occupancies with flammable and combustible liquids</u>	<u>The quantity of medicines, foodstuffs or consumer products, and cosmetics containing not more than 50 percent by volume of water-miscible liquids with the remainder of the solutions not being flammable, is not limited</u> <u>To qualify for this allowance, such materials shall be packaged in individual containers not exceeding 1.3 gallons.</u>	

Highly toxic and toxic materials	Retail and wholesale sales occupancies	<p>The quantity of medicines, foodstuffs or consumer products, and cosmetics containing not more than 50 percent by volume of water-miscible liquids with the remainder of the solutions not being flammable, is not limited.</p> <p>To qualify for this allowance, such materials shall be packaged in individual containers not exceeding 1.3 gallons.</p>
Any	Agricultural materials	The quantity of agricultural materials stored or utilized for agricultural purposes on the premises is not limited
	Energy storage	The quantity of hazardous materials in stationary storage battery systems is not limited
		The quantity of hazardous materials in stationary fuel cell power systems is not limited
		The quantity of hazardous materials in capacitor energy storage systems is not limited
Refrigeration systems	The quantity of refrigerants in refrigeration systems is not limited. To qualify for this allowance, such systems shall comply with Section 608 of the International Fire Code and Chapter 11 of the International Mechanical Code	

a. Exempted materials and conditions listed in this table are required to comply with applicable provisions of the *International Fire Code*.

Revise as follows:

[F] 414.1 General. ~~The provisions of Sections 414.1 through 414.6 shall apply to b~~
Buildings and structures occupied for the manufacturing, processing, dispensing, use or storage of hazardous materials shall comply with Sections 414.1 through 414.6.

Exception: Exemptions listed in Table 307.1.1 shall not be required to comply with Section 414.

[F] 415.1 General. Occupancies classified as Group H-1, H-2, H-3, H-4 and H-5 in accordance with Section 307 shall comply with ~~The provisions of Sections 415.1 through 415.11 shall apply to the storage and use of hazardous materials in excess of the maximum allowable quantities per control area listed in Section 307.1.~~

2021 International Fire Code

Revise as follows:

5001.1 Scope.

Prevention, control and mitigation of dangerous conditions related to storage, dispensing, use and handling of hazardous materials shall be in accordance with this chapter.

This chapter shall apply to all hazardous materials, other than those materials and conditions listed in Table 5001.1, including those materials regulated elsewhere in this code, except that where specific requirements are provided in other chapters, those specific requirements shall apply in accordance with the applicable chapter. Where a material has multiple hazards, all hazards shall be addressed.

Exceptions:

1. In retail or wholesale sales occupancies, medicines, foodstuff, cosmetics and commercial or institutional products containing not more than 50 percent by volume of water-miscible liquids and with the remainder of the solutions not being flammable, provided that such materials are packaged in individual containers not exceeding 1.3 gallons (5 L).
2. Alcoholic beverages in retail or wholesale sales occupancies, provided that the liquids are packaged in individual containers not exceeding 1.3 gallons (5 L).
3. Application and release of pesticide and agricultural products and materials intended for use in weed abatement, erosion control, soil amendment or similar applications where applied in accordance with the manufacturer's instructions and label directions.
4. The off-site transportation of hazardous materials where in accordance with Department of Transportation (DOTn) regulations.
5. Building materials not otherwise regulated by this code.
6. Refrigeration systems (see Section 608).
7. Stationary storage battery systems regulated by Section 1207.
8. The display, storage, sale or use of fireworks and *explosives* in accordance with Chapter 56.
9. *Corrosives* utilized in personal and household products in the manufacturer's original consumer packaging in Group M occupancies.
10. The storage of beer, distilled spirits and wines in barrels and casks.

11. The use of wall-mounted dispensers containing alcohol-based hand rubs classified as Class I or II liquids where in accordance with Section 5705.5.
12. Specific provisions for flammable liquids in motor fuel-dispensing facilities, repair garages, airports and marinas in Chapter 23.
13. Storage and use of fuel oil in tanks and containers connected to oil-burning equipment. Such storage and use shall be in accordance with Section 605. For abandonment of fuel oil tanks, Chapter 57 applies.
14. Storage and display of aerosol products complying with Chapter 51.
15. Storage and use of *flammable* or *combustible liquids* that do not have a fire point when tested in accordance with ASTM D92, not otherwise regulated by this code.
16. *Flammable* or *combustible liquids* with a *flash point* greater than 95° F (35° C) in a water-miscible solution or dispersion with a water and inert (noncombustible) solids content of more than 80 percent by weight, which do not sustain combustion, not otherwise regulated by this code.
17. Commercial cooking oil storage tank systems located within a building and designed and installed in accordance with Section 607 and NFPA 30.

Add new text as follows:

TABLE 5001.1
HAZARDOUS MATERIAL EXEMPTIONS^a

Material Classification	Occupancy or Application	Exemption
Combustible fiber	<u>Baled Cotton</u>	<u>Densely packed baled cotton shall not be classified as combustible fiber, provided that the bales comply with the packing requirements of ISO 8115</u>
	<u>Building materials</u>	<u>The quantity of commonly used building materials that are classified as corrosive materials is not limited</u>
Corrosive	<u>Personal and household products</u>	<u>The quantity of personal and household products that are classified as corrosive materials is not limited in retail displays, provided that the products are in original packaging</u>
	<u>Retail and wholesale sales occupancies</u>	<u>The quantity of medicines, foodstuffs or consumer products, and cosmetics containing not more than 50 percent by volume of water-miscible liquids with the remainder of the solutions not being flammable, is not limited.</u> <u>To qualify for this allowance, such materials shall be packaged in individual containers not exceeding 1.3 gallons.</u>
Explosives	<u>Groups B, F, M and S</u>	<u>Storage of special industrial explosive devices are not limited</u>
	<u>Groups M and R-3</u>	<u>Storage of black powder, smokeless propellant, and small arms primers are not limited</u>
Flammable and combustible liquids and gases	<u>Aerosols</u>	<u>Buildings and structures occupied for aerosol product storage, aerosol cooking spray products or plastic aerosol 3 products shall be classified as Group S-1</u>
	<u>Alcoholic beverages</u>	<u>The quantity of alcoholic beverages in liquor stores and distributors without bulk storage is not limited</u>
		<u>The quantity of alcoholic beverages in distilling or brewing of beverages is not limited</u>
		<u>The storage quantity of beer, distilled spirits and wines in barrels and casks is not limited</u>
		<u>The quantity of alcoholic beverages in retail and wholesale sales occupancies is not limited. To qualify for this allowance, beverages shall be packaged in individual containers not exceeding 1.3 gallons</u>
	<u>Cleaning establishments with combustible liquid solvents</u>	<u>The quantity of combustible liquid solvents used in closed systems and having a flash point at or above 140° F (60° C) is not limited. To qualify for this allowance, equipment shall be listed by an approved testing agency and the occupancy shall be 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</u>
		<u>The quantity of combustible liquid solvents having a flash point at or above 200° F (93° C) is not limited</u>
	<u>Closed piping systems</u>	<u>The quantity of flammable and combustible liquids and gases utilized for the operation of machinery or equipment is not limited</u>
	<u>Fuel</u>	<u>The quantity of liquid or gaseous fuel in fuel tanks on vehicles or motorized equipment is not limited</u>
		<u>The quantity of gaseous fuels in piping systems and fixed appliances regulated by the International Fuel Gas Code is not limited</u>
		<u>The quantity of liquid fuels in piping systems and fixed appliances regulated by the International Mechanical Code is not limited</u>
	<u>Fuel oil</u>	<u>The quantity of fuel oil storage complying with Section 603.3.2 of the International Fire Code is not limited</u>
	<u>Flammable finishing operations using flammable and combustible liquids</u>	<u>Buildings and structures occupied for the application of flammable finishes. Such buildings and areas shall comply with Section 416</u>
	<u>Hand sanitizer</u>	<u>The quantity of alcohol-based hand rubs classified as Class I or II liquids in dispensers installed in accordance with Sections 5705.5 and 5705.5.1 of the International Fire Code is not limited. The location of the alcohol-based hand rub (ABHR) dispensers shall be provided in the construction documents</u>
<u>Retail and wholesale sales occupancies with flammable and combustible liquids</u>	<u>The quantity of medicines, foodstuffs or consumer products, and cosmetics containing not more than 50 percent by volume of water-miscible liquids with the remainder of the solutions not being flammable, is not limited</u> <u>To qualify for this allowance, such materials shall be packaged in individual containers not exceeding 1.3 gallons.</u>	

Highly toxic and toxic materials	<u>Retail and wholesale sales occupancies</u>	<p>The quantity of medicines, foodstuffs or consumer products, and cosmetics containing not more than 50 percent by volume of water-miscible liquids with the remainder of the solutions not being flammable, is not limited.</p> <p>To qualify for this allowance, such materials shall be packaged in individual containers not exceeding 1.3 gallons.</p>
Any	<u>Agricultural materials</u>	The quantity of agricultural materials stored or utilized for agricultural purposes on the premises is not limited
	<u>Energy storage</u>	The quantity of hazardous materials in stationary storage battery systems is not limited
		The quantity of hazardous materials in stationary fuel cell power systems is not limited
		The quantity of hazardous materials in capacitor energy storage systems is not limited
<u>Refrigeration systems</u>	The quantity of refrigerants in refrigeration systems is not limited. To qualify for this allowance, such systems shall comply with Section 608 of the International Fire Code and Chapter 11 of the International Mechanical Code	

a. Exempted materials and conditions listed in this table are required to comply with applicable provisions of the *International Fire Code*.

Revise as follows:

TABLE 5003.1.1(1)

MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS POSING A PHYSICAL HAZARD^{a,c,i,m,n,p}

MATERIAL	CLASS	GROUP WHEN THE MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED	STORAGE ^b			USE-CLOSED SYSTEMS ^b			USE-OPEN SYSTEMS ^b				
			Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas (cubic feet at NTP)	Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas (cubic feet at NTP)	Solid pounds (cubic feet)	Liquid gallons (pounds)			
Combustible dust	NA	H-2	See Note q	NA	NA	See Note q	NA	NA	See Note q	NA			
Combustible fibers ^q	Loose	H-3	(100)	NA	NA	(100)	NA	NA	(20)	NA			
	Baled ^q		(1,000)			(1,000)			(200)				
Combustible liquid ^{c,r}	II	H-2 or H-3	NA	120 ^{d,e}	NA	NA	NA	NA	NA	30 ^d			
	IIIA	H-2 or H-3		330 ^{d,e}						80 ^d			
	IIIB	NA		13,200 ^{e,f}						3,300 ^f			
CryogenicFlammable	NA	H-2	NA	45 ^d	NA	NA	45 ^d	NA	NA	10 ^d			
CryogenicInert	NA	NA	NA	NA	NL	NA	NA	NL	NA	NA			
CryogenicOxidizing	NA	H-3	NA	45 ^d	NA	NA	45 ^d	NA	NA	10 ^d			
Explosives	Division 1.1	H-1	1 ^{e,g}	(1) ^{e,g}	NA	NA	NA	NA	NA	0.25 ^g	(0.25) ^g		
	Division 1.2	H-1	1 ^{e,g}	(1) ^{e,g}						0.25 ^g	(0.25) ^g	0.25 ^g	(0.25) ^g
	Division 1.3	H-1 or H-2	5 ^{e,g}	(5) ^{e,g}						1 ^g	(1) ^g	1 ^g	(1) ^g
	Division 1.4	H-3	50 ^{e,g}	(50) ^{e,g}						50 ^g	(50) ^g	NA	NA
	Division 1.4G	H-3	125 ^{e,l}	NA						NA	NA	NA	NA
	Division 1.5	H-1	1 ^{e,g}	(1) ^{e,g}						0.25 ^g	(0.25) ^g	0.25 ^g	(0.25) ^g
	Division 1.6	H-1	1 ^{e,g}	NA						NA	NA	NA	NA
Flammable gas	Gaseous	H-2	NA	NA	1,000 ^{d,e}	NA	NA	1,000 ^{d,e}	NA	NA			
	Liquefied			(150) ^{d,e}	NA		(150) ^{d,e}	NA					
Flammable liquid ^{e,o}	IA	H-2 or H-3	NA	30 ^{d,e}	NA	NA	NA	NA	NA	10 ^d			
	IB and IC			120 ^{d,e}						120 ^d	30 ^d		
Flammable liquid, combination (IA, IB, IC) ^o	NA	H-2 or H-3	NA	120 ^{d,e,h}	NA	NA	120 ^{d,h}	NA	NA	30 ^{d,h}			
Flammable solid	NA	H-3	125 ^{d,e}	NA	NA	125 ^d	NA	NA	25 ^d	NA			
Inert gas	Gaseous	NA	NA	NA	NL	NA	NA	NL	NA	NA			
	Liquefied	NA	NA	NA	NL	NA	NA	NL	NA	NA			
Organic peroxide	UD	H-1	1 ^{e,g}	(1) ^{e,g}	NA	NA	NA	NA	NA	0.25 ^g	(0.25) ^g		
	I	H-2	5 ^{d,e}	(5) ^{d,e}						1 ^d	(1) ^d	1 ^d	(1) ^d
	II	H-3	50 ^{d,e}	(50) ^{d,e}						50 ^d	(50) ^d	10 ^d	(10) ^d
	III	H-3	125 ^{d,e}	(125) ^{d,e}						125 ^d	(125) ^d	25 ^d	(25) ^d
	IV	NA	NL	NL						NL	NL	NL	NL
	V	NA	NL	NL						NL	NL	NL	NL

Oxidizer	4	H-1	1 ^y	(1) ^{e,y}	NA	0.25 ^y	(0.25) ^y	NA	0.25 ^y	(0.25) ^y
	3 ^k	H-2 or H-3	10 ^{d,e}	(10) ^{d,e}		2 ^d	(2) ^d		2 ^d	(2) ^d
	2	H-3	250 ^{d,e}	(250) ^{d,e}		250 ^d	(250) ^d		50 ^d	(50) ^d
	1	NA	4,000 ^{e,f}	(4,000) ^{e,f}		4,000 ^f	(4,000) ^f		1,000 ^f	(1,000) ^f
Oxidizing gas	Gaseous	H-3	NA	NA	1,500 ^{d,e}	NA	NA	1,500 ^{d,e}	NA	NA
	Liquefied			(150) ^{d,e}	NA	(150) ^{d,e}	NA	NA	NA	NA
Pyrophoric	NA	H-2	4 ^{e,g}	(4) ^{e,g}	50 ^{e,g}	1 ^g	(1) ^g	10 ^{e,g}	0	0
Unstable (reactive)	4	H-1	1 ^{e,g}	(1) ^{e,g}	10 ^{e,g}	0.25 ^g	(0.25) ^g	2 ^{e,g}	0.25 ^g	(0.25) ^g
	3	H-1 or H-2	5 ^{d,e}	(5) ^{d,e}	50 ^{d,e}	1 ^d	(1) ^d	10 ^{d,e}	1 ^d	(1) ^d
	2	H-3	50 ^{d,e}	(50) ^{d,e}	750 ^{d,e}	50 ^d	(50) ^d	750 ^{d,e}	10 ^d	(10) ^d
	1	NA	NL	NL	NL	NL	NL	NL	NL	NL
Water reactive	3	H-2	5 ^{d,e}	(5) ^{d,e}	NA	5 ^d	(5) ^d	NA	1 ^d	(1) ^d
	2	H-3	50 ^{d,e}	(50) ^{d,e}		50 ^d	(50) ^d		10 ^d	(10) ^d
	1	NA	NL	NL		NL	NL		NL	NL

For SI: 1 cubic foot = 0.02832 m³, 1 pound = 0.454 kg, 1 gallon = 3.785 L.

NA = Not Applicable, NL = Not Limited, UD = Unclassified Detonable.

- a. For use of control areas, see Section 5003.8.3.
- b. The aggregate quantity in use and storage shall not exceed the quantity listed for storage.
- c. For hazardous materials in Group B higher education laboratory occupancies, see Section 428 of the International Building Code and Chapter 38.
~~The quantities of alcoholic beverages in retail and wholesale sales occupancies shall not be limited providing the liquids are packaged in individual containers not exceeding 1.3 gallons. In retail and wholesale sales occupancies, the quantities of medicines, foodstuff or consumer products and cosmetics containing not more than 50 percent by volume of water-miscible liquids with the remainder of the solutions not being flammable shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.~~
- d. Maximum allowable quantities shall be increased 100 percent in buildings equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1. Where Note e applies, the increase for both notes shall be applied accumulatively.
- e. Maximum allowable quantities shall be increased 100 percent where stored in approved storage cabinets, day boxes, gas cabinets, gas rooms, exhausted enclosures or in listed safety cans in accordance with Section 5003.9.10. Where Note d applies, the increase for both notes shall be applied accumulatively.
- f. Quantities shall not be limited in a building equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1.
- g. Allowed only in buildings equipped throughout with an approved automatic sprinkler system.
- h. Containing not more than the maximum allowable quantity per control area of Class IA, Class IB or Class IC flammable liquids.
- i. ~~The maximum allowable quantity shall not apply to fuel oil storage complying with Section 605.4.2.~~
- j. Quantities in parenthesis indicate quantity units in parenthesis at the head of each column.
- k. A maximum quantity of 220 pounds of solid or 22 gallons of liquid Class 3 oxidizers is allowed where such materials are necessary for maintenance purposes, operation or sanitation of equipment where the storage containers and the manner of storage are approved.
- l. Net weight of pyrotechnic composition of the fireworks. Where the net weight of the pyrotechnic composition of the fireworks is not known, 25 percent of the gross weight of the fireworks including packaging shall be used.
- m. For gallons of liquids, divide the amount in pounds by 10 in accordance with Section 5003.1.2.
- n. ~~For storage and display quantities oxidizers, unstable (reactive) materials, and water reactive materials stored or displayed in Group M occupancies and storage quantities or stored in Group S occupancies, see Section 5003.11, see Table 5003.11.1.~~
- o. For flammable and combustible liquid storage in Group M occupancy wholesale and retail sales uses, see Section 5704.3.6

~~Densely packed baled cotton that complies with the packing requirements of ISO 8115 shall not be included in this material class.~~

- p. ~~The following shall not be included in determining the maximum allowable quantities:~~
1. ~~Liquid or gaseous fuel in fuel tanks on vehicles.~~
 2. ~~Liquid or gaseous fuel in fuel tanks on motorized equipment operated in accordance with this code.~~
 3. ~~Gaseous fuels in piping systems and fixed appliances regulated by the *International Fuel Gas Code*.~~
 4. ~~Liquid fuels in piping systems and fixed appliances regulated by the *International Mechanical Code*.~~
 5. ~~Alcohol based hand rubs classified as Class I or II liquids in dispensers that are installed in accordance with Sections 5705.5 and 5705.5.1. The location of the alcohol based hand rub (ABHR) dispensers shall be provided in the construction documents.~~
- q. Where manufactured, generated or used in such a manner that the concentration and conditions create a fire or explosion hazard based on information prepared in accordance with Section 104.8.2.

TABLE 5003.1.1(2)

MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS POSING A HEALTH HAZARD^{a, e, f, h, i}

MATERIAL	STORAGE ^b			USE-CLOSED SYSTEMS ^b			USE-OPEN SYSTEMS ^b	
	Solid pounds ^{d, e, f}	Liquid gallons (pounds) ^{d, e, f}	Gas cubic feet at NTP (pounds) ^d	Solid pounds ^d	Liquid gallons (pounds) ^d	Gas cubic feet at NTP (pounds) ^d	Solid pounds ^d	Liquid gallons (pounds) ^d
Corrosives	5,000	500	Gaseous 810 ^e Liquefied (150)	5,000	500	Gaseous 810 ^e Liquefied (150)	1,000	100
Highly toxics	10	(10)	Gaseous 20 ^g Liquefied (4) ^g	10	(10)	Gaseous 20 ^g Liquefied (4) ^g	3	(3)
Toxics	500	(500)	Gaseous 810 ^e Liquefied (150) ^e	500	(500)	Gaseous 810 ^e Liquefied (150) ^e	125	(125)

For SI: 1 cubic foot = 0.02832 m³, 1 pound = 0.454 kg, 1 gallon = 3.785 L.

- a. For use of control areas, see Section 5003.8.3.
 - b. The aggregate quantity in use and storage shall not exceed the quantity listed for storage.
 - c. ~~In retail and wholesale sales occupancies, the quantities of medicines, foodstuff or consumer products and cosmetics, containing not more than 50 percent by volume of water-miscible liquids and with the remainder of the solutions not being flammable, shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.~~
 - d. Maximum allowable quantities shall be increased 100 percent in buildings equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1. Where Note e also applies, the increase for both notes shall be applied accumulatively.
 - e. Maximum allowable quantities shall be increased 100 percent where stored in approved storage cabinets, gas cabinets or exhausted enclosures. Where Note d applies, the increase for both notes shall be applied accumulatively.
 - f. For corrosive, highly toxic and toxic materials stored or displayed in Group M occupancies or stored in Group S occupancies, See Section 5003.11.1.
- ~~For storage and display quantities in Group M and storage quantities in Group S occupancies complying with Section 5003.11, see Table 5003.11.1.~~
- g. Allowed only where stored in approved exhausted gas cabinets or exhausted enclosures.
 - h. Quantities in parentheses indicate quantity units in parentheses at the head of each column.
 - i. For gallons of liquids, divide the amount in pounds by 10 in accordance with Section 5003.1.2.

Reason Statement: This proposal attempts to clean up what has become a colossal mess of special exceptions to hazardous materials regulations and Group H occupancy classification and clarify that the special exceptions generally fall into two categories: 1) Outright exclusions to Group H with no quantity limit, or 2) Major increases of MAQ amounts beyond what is provided in the general application MAQ tables. The first group has appeared in a list of exceptions to Group H in IBC Section 307.1.1, and these materials/conditions were generally considered to be exempt from ever being Group H or having to comply with any of the general hazardous materials regulations in the IBC or IFC. The second group clearly gets its own MAQ allowances, but were not specifically exempted from having to follow general hazardous materials safety requirements that are otherwise applicable to quantities that do not exceed MAQ amounts. Even in the original Group H requirements, and particularly footnotes to the MAQ tables, the "special conditions" were somewhat haphazardly organized, and the situation has only gotten worse over the past three-plus decades.

Trying to pull all of this information together into a more organized presentation was a massive undertaking and in some cases involved interpreting intent of provisions for which application wasn't 100-percent clearly conveyed by existing text. Being involved in this topic for more than 30 years, I feel reasonably confident that my understanding of how the provisions apply is accurate, and certainly, there was no intent to deliberately gore someone's ox. My advice to anyone who is impacted by these portions of the codes is to read the rewrite closely to make sure that there were no unintended consequences from the work that was done. Given the scope of this project and less 3rd party review of the proposal prior to submittal than I would have preferred, it is certainly possible that mistakes may have been made, and in such cases, I will be happy to work on a floor modification for committee consideration to fix these. Note that, for the new Table 307.1.1 and the companion IFC table, I included an extra column showing the original source location for each row/exemption to assist reviewers. It is intended that this information will not be carried into the final version that appears in the code, but may be useful for staff to retain for inclusion in the commentary books.

TABLE 307.1.1
HAZARDOUS MATERIAL EXEMPTIONS*

Material Classification	Occupancy or Application	Exemption	2021 Source (column to be deleted prior to publication)
Combustible fiber	<u>Baled Cotton</u>	<u>Densely packed baled cotton shall not be classified as combustible fiber, provided that the bales comply with the packing requirements of ISO 8115</u>	<u>Table 307.1(1) note "o"</u>
Corrosive	<u>Building materials</u>	<u>The quantity of commonly used building materials that are classified as corrosive materials is not limited</u>	<u>Section 307.1.1 Item 11</u>
	<u>Personal and household products</u>	<u>The quantity of personal and household products that are classified as corrosive materials is not limited in retail displays, provided that the products are in original packaging.</u>	<u>Section 307.1.1 Item 10</u>
	<u>Retail and wholesale sales occupancies</u>	<u>The quantity of medicines, foodstuffs or consumer products, and cosmetics containing not more than 50 percent by volume of water-miscible liquids with the remainder of the solutions not being flammable, is not limited.</u> <u>To qualify for this allowance, such materials shall be packaged in individual containers not exceeding 1.3 gallons.</u>	<u>Table 307.1(2) note "c"</u>
Explosives	<u>Groups B, F, M and S</u>	<u>Storage of special industrial explosive devices are not limited</u>	<u>Section 307.1.1 Item 14</u>
	<u>Groups M and R-3</u>	<u>Storage of black powder, smokeless propellant, and small arms primers are not limited</u>	<u>Section 307.1.1 Item 14</u>
Flammable and combustible liquids and gases	<u>Aerosols</u>	<u>Buildings and structures occupied for aerosol product storage, aerosol cooking spray products or plastic aerosol 3 products shall be classified as Group S-1</u>	<u>Section 307.1.1 Item 12</u>
	<u>Alcoholic beverages</u>	<u>The quantity of alcoholic beverages in liquor stores and distributors without bulk storage is not limited</u>	<u>Section 307.1.1 Item 6</u>
		<u>The quantity of alcoholic beverages in distilling or brewing of beverages is not limited</u>	<u>Section 307.1.1 Item 18</u>
		<u>The storage quantity of beer, distilled spirits and wines in barrels and casks is not limited</u>	<u>Section 307.1.1 Item 19</u>
		<u>The quantity of alcoholic beverages in retail and wholesale sales occupancies is not limited. To qualify for this allowance, beverages shall be packaged in individual containers not exceeding 1.3 gallons</u>	<u>Table 307.1(1) note "c"</u>

	<u>Cleaning establishments with combustible liquid solvents</u>	<u>The quantity of combustible liquid solvents used in closed systems and having a flash point at or above 140°F (60°C) is not limited. To qualify for this allowance, equipment shall be listed by an approved testing agency and the occupancy shall be 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</u>	<u>Section 307.1.1 Item 4</u>
		<u>The quantity of combustible liquid solvents having a flash point at or above 200°F (93°C) is not limited</u>	<u>Section 307.1.1 Item 5</u>
	<u>Closed piping systems</u>	<u>The quantity of flammable and combustible liquids and gases utilized for the operation of machinery or equipment is not limited</u>	<u>Section 307.1.1 Item 3</u>
	<u>Fuel</u>	<u>The quantity of liquid or gaseous fuel in fuel tanks on vehicles or motorized equipment is not limited</u>	<u>Table 307.1(1) note "p" #1 & 2</u>
		<u>The quantity of gaseous fuels in piping systems and fixed appliances regulated by the International Fuel Gas Code is not limited</u>	<u>Table 307.1(1) note "p" #3</u>
		<u>The quantity of liquid fuels in piping systems and fixed appliances regulated by the International Mechanical Code is not limited</u>	<u>Table 307.1(1) note "p" #4</u>
	<u>Fuel oil</u>	<u>The quantity of fuel oil storage complying with Section 603.3.2 of the International Fire Code is not limited</u>	<u>Table 307.1(1) note "i"</u>
	<u>Flammable finishing operations using flammable and combustible liquids</u>	<u>Buildings and structures occupied for the application of flammable finishes. Such buildings and areas shall comply with Section 416</u>	<u>Section 307.1.1 Item 1</u>
	<u>Hand sanitizer</u>	<u>The quantity of alcohol-based hand rubs classified as Class I or II liquids in dispensers installed in accordance with Sections 5705.5 and 5705.5.1 of the International Fire Code is not limited. The location of the alcohol-based hand rub (ABHR) dispensers shall be provided in the construction documents</u>	<u>Table 307.1(1) note "p" #5</u>
	<u>Retail and wholesale sales occupancies with flammable and combustible liquids</u>	<u>The quantity of medicines, foodstuffs or consumer products, and cosmetics containing not more than 50 percent by volume of water-miscible liquids with the remainder of the solutions not being flammable, is not limited</u> <u>To qualify for this allowance, such materials shall be packaged in individual containers not exceeding 1.3 gallons.</u>	<u>Table 307.1(1) note "c"</u>
Highly toxic and toxic materials	<u>Retail and wholesale sales occupancies</u>	<u>The quantity of medicines, foodstuffs or consumer products, and cosmetics containing not more than 50 percent by volume of water-</u>	<u>Table 307.1(2) note "c"</u>

		<p><u>miscible liquids with the remainder of the solutions not being flammable, is not limited.</u></p> <p><u>To qualify for this allowance, such materials shall be packaged in individual containers not exceeding 1.3 gallons.</u></p>	
Any	<u>Agricultural materials</u>	<u>The quantity of agricultural materials stored or utilized for agricultural purposes on the premises is not limited</u>	<u>Section 307.1.1 Item 8</u>
	<u>Energy storage</u>	<u>The quantity of hazardous materials in stationary storage battery systems is not limited</u>	<u>Section 307.1.1 Item 9</u>
		<u>The quantity of hazardous materials in stationary fuel cell power systems is not limited</u>	<u>Section 307.1.1 Item 15</u>
		<u>The quantity of hazardous materials in capacitor energy storage systems is not limited</u>	<u>Section 307.1.1 Item 16</u>
<u>Refrigeration systems</u>	<u>The quantity of refrigerants in refrigeration systems is not limited. To qualify for this allowance, such systems shall comply with Section 608 of the International Fire Code and Chapter 11 of the International Mechanical Code</u>	<u>Section 307.1.1 Item 7</u>	

Cost Impact: The code change proposal will not increase or decrease the cost of construction. The revision is intended to be a reorganization and edit that should not affect the cost of construction.

G38-21

IBC: [F] 307.1.1

Proponents: Stephen Thomas, Colorado Code Consulting, a Shums Coda Assoc Company, representing Colorado Chapter ICC (stthomas@coloradocode.net)

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

2021 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 storage battery systems installed in accordance with the *International Fire 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 product* storage, aerosol cooking spray products or plastic aerosol 3 products 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. Stationary fuel cell power systems installed in accordance with the *International Fire Code*.
16. Capacitor energy storage systems in accordance with the *International Fire Code*.
17. Group B *higher education laboratory* occupancies complying with Section 428 and Chapter 38 of the International Fire Code.
18. ~~Distilling or brewing of beverages conforming to the requirements of the *International Fire Code*.~~
19. 18. The storage of beer, ~~distilled spirits~~ and wines in barrels and casks conforming to the requirements of the *International Fire Code*.

Reason Statement: These two items were added to the 2021 IFC and IBC by the Fire Code Committee. We believe that the classification of occupancies should have been heard by the IBC General Committee. Distilleries can be a very hazardous occupancy depending on the size of the facility. We would agree that a small craft distillery may not be a major hazard. However, the change did not address that. It just lumped all these types of facilities in the same group. Therefore, a major manufacturer of distilled spirits with hundreds of thousands of gallons of flammable liquids would not be classified as a Group H occupancy. There have been fires at these facilities that have had a major impact on the local community and the owners. We believe that facilities that have amounts of flammable liquids in excess of the maximum allowable quantities.

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

A facility classified as a Group H occupancy has higher levels of life-safety provisions that will increase the cost of construction when not classified as a Group F-1 & S-1 occupancies.

G41-21

IBC: [F] 307.4, [F] 307.5

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

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

2021 International Building Code

Revise as follows:

[F] 307.4 High-hazard Group H-2. Buildings and structures containing materials that pose a deflagration hazard or a hazard from accelerated burning shall be classified as Group H-2. Such materials shall include, but not be limited to, the following:

- Class I, II or IIIA *flammable or combustible liquids* that are used or stored in normally open containers or systems, or in closed containers or systems pressurized at more than 15 pounds per square inch gauge (103.4 kPa).
- Combustible dusts* where manufactured, generated or used in such a manner that the concentration and conditions create a fire or explosion hazard based on information prepared in accordance with Section 414.1.3.
- Cryogenic fluids*, flammable.
- Category 1A Flammable gases.
- Category 1B Flammable gases having a burning velocity greater than 3.9 inches per second (10 cm/s).
- Organic peroxides*, Class I.
- Oxidizers*, Class 3, that are used or stored in normally open containers or systems, or in closed containers or systems pressurized at more than 15 pounds per square inch gauge (103 kPa).
- Pyrophoric liquids*, solids and gases, nondetonable.
- Unstable (reactive) materials*, Class 3, nondetonable.
- Water-reactive materials*, Class 3.

[F] 307.5 High-hazard Group H-3. Buildings and structures containing materials that readily support combustion or that pose a *physical hazard* shall be classified as Group H-3. Such materials shall include, but not be limited to, the following:

- Class I, II or IIIA *flammable or combustible liquids* that are used or stored in normally closed containers or systems pressurized at 15 pounds per square inch gauge (103.4 kPa) or less
- Combustible fibers*, other than densely packed *baled cotton*, where manufactured, generated or used in such a manner that the concentration and conditions create a fire or *explosion* hazard based on information prepared in accordance with Section 414.1.3
- Consumer *fireworks*, 1.4G (Class C, Common)
- Cryogenic fluids*, oxidizing
- Category 1B flammable gases having a burning velocity of 3.9 inches per second (10 cm/s) or less
- Flammable solids*
- Organic peroxides*, Class II and III
- Oxidizers*, Class 2
- Oxidizers*, Class 3, that are used or stored in normally closed containers or systems pressurized at 15 pounds per square inch gauge (103 kPa) or less
- Oxidizing gases*
- Unstable (reactive) materials*, Class 2
- Water-reactive materials*, Class 2

Reason Statement: This change coordinates the classification of high hazard with the change in definition to “flammable gas.” Category 1A flammable gases have an explosive component in that their deflagration index is extremely low. By comparison, Category 1B flammable gases with a burning velocity of 3.9 in/s or less have a very high deflagration index. Thus, there is a significant difference in the hazard level between the two flammable gas categories.

The more appropriate classification for a Category 1B flammable gas with a burning velocity of 3.9 in/s or less appears to be Use Group H-3. This classification can be supported by a comparison of level of hazard identified in the code change to the MAQ table for flammable gas. The minimum ignition energy varies by as much as 58,000 times. The heat of combustion is between 6 and 19 percent of these Category 1B flammable gases. Thus, Use Group H-3 is the proper classification for Category 1B flammable gas with a burning velocity of 3.9 in/s or less.

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

BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

The FCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes with regard to fire and life safety in new and existing buildings and facilities as well as the protection of life and property in wildland urban interface areas. In 2020 and 2021 the Fire-CAC held multiple virtual meetings that were open to any interested party. In addition, there were numerous virtual specific working group meetings that were also open to any interested parties, to develop, discuss and debate the proposed changes. Related documentation and reports are posted on the FCAC website at: FCAC.

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

This code change reduces the cost of construction. By modifying the Use Group for Category 1B flammable gas, the construction costs are also lowered. The construction costs for Category 1A flammable gas remain unchanged, neither increased nor decreased in the cost of construction.

G42-21

IBC: 308.2.4, 308.3.2, 310.4.1

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

SECTION 308 INSTITUTIONAL GROUP I.

Revise as follows:

308.2.4 Five or fewer persons receiving custodial care. A facility with five or fewer persons receiving *custodial care* shall be classified as Group R-2 or Group R-3 based on the primary occupancy of the building. ~~or shall comply. Such a facility, located within a dwelling unit that is within the scope of the *International Residential Code*, shall be permitted to be constructed in accordance with this code or with the *International Residential Code*.~~ provided Facilities constructed using the *International Residential Code* shall be protected by an automatic sprinkler system ~~is~~ installed in accordance with Section 903.3.1.3 or Section P2904 of the *International Residential Code*.

308.3.2 Five or fewer persons receiving medical care. A facility with five or fewer persons receiving *medical care* shall be classified as Group R-2 or Group R-3 based on the primary occupancy of the building. ~~or shall comply. Such a facility, located within a dwelling unit that is within the scope of the *International Residential Code*, shall be permitted to be constructed in accordance with this code or with the *International Residential Code*.~~ provided Facilities constructed using the *International Residential Code* shall be protected by an automatic sprinkler system ~~is~~ installed in accordance with Section 903.3.1.3 or Section P2904 of the *International Residential Code*.

SECTION 310 RESIDENTIAL GROUP R.

Revise as follows:

~~310.4.1~~ **310.1.1 Care facilities within a dwelling.** Care facilities for five or fewer persons receiving medical care or custodial care that are located within a single-family dwelling unit ~~are permitted to comply that is within the scope of the *International Residential Code*, shall be permitted to be constructed in accordance with this code or with the *International Residential Code*.~~ provided Facilities constructed using the *International Residential Code* shall be protected by an automatic sprinkler system ~~is~~ installed in accordance with Section 903.3.1.3 or Section P2904 of the *International Residential Code*.

Reason Statement: The intent of this proposal is to clarify the allowance for when a care facility fits into the residential requirements in the IBC or IRC.

Sticking with the current intent in the codes, these facilities should be permitted in a home environment – be it detached single family, townhouse or apartment – thus the reference to Group R-3 and R-2. The IRC reference allows for the facility to use IRC if the dwelling unit it is in is scoped to the IRC.

The relocation of Section 310.4.1 is because this is no longer just a Group R-3 consideration.

This proposal does not change what facilities can currently be constructed under the IRC, however, in the past there has been arguments that these facilities should not be permitted under the IRC. A facility of 5 or fewer persons could be in a detached dwelling, a townhouse or an apartment building. The Fair Housing Act does not allow for family to be defined by blood or marriage. Multiple court cases have confirmed that people have the right to live in a home environment instead of an institutional facility if they so choose. If this is a business, this small group home is most likely operating as a family; and would fall below the licensure rules of most states. However, in most cases, this will be couple with foster children or someone taking care of a friend who needs assistance - not a business. The IBC does not typically go into issues on licensure or who is paying what – we look at the use of the space.

This is one of a group of proposals intended to coordinate the scoping items in IBC Section 101.2 and IRC 101.2. While the proposals work together, then also work separately. The proposal for coordination will be in Group B.

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

BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is a clarification of use group, not a change to construction requirements.

G43-21

IBC: 310.2, 310.3, 310.4, 310.4.2

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

SECTION 310 RESIDENTIAL GROUP R.

310.1 Residential Group R. Residential Group R includes, among others, the use of a building or structure, or a portion thereof, for sleeping purposes when not classified as an Institutional Group I or when not regulated by the *International Residential Code*. Group R occupancies not constructed in accordance with the *International Residential Code* as permitted by Sections 310.4.1 and 310.4.2 shall comply with Section 420.

Revise as follows:

310.2 Residential Group R-1. Residential Group R-1 occupancies containing *sleeping units* where the occupants are primarily *transient* in nature, including:

- *Boarding houses (transient)* with more than 10 occupants
- *Congregate living facilities (transient)* with more than 10 occupants
- *Hotels (transient)*
- *Motels (transient)*
- Lodging houses with more than 5 guest rooms

310.3 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
- *Congregate living facilities (nontransient)* with more than 16 occupants
 - *Boarding houses (nontransient)*
 - Convents
 - *Dormitories*
 - Fraternities and sororities
 - Monasteries
- *Hotels (nontransient)* with more than 10 occupants
- *Live/work units*
- *Motels (nontransient)* with more than 10 occupants
- Vacation timeshare properties

310.4 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*
- 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 (transient)* with five or fewer *guest rooms* and 10 or fewer occupants~~
- *Hotels (nontransient)* with 10 or fewer occupants
- *Motels (nontransient)* with 10 or fewer occupants

310.4.1 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 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.

Revise as follows:

310.4.2 Lodging houses. Owner-occupied *lodging houses* with five or fewer *guest rooms* and ~~10 or fewer total occupants~~ shall be permitted to be constructed in accordance with the *International Residential Code*, provided that an *automatic sprinkler system* is installed in accordance with Section 903.3.1.3 or Section P2904 of the *International Residential Code*.

Reason Statement: The intent of this proposal is to separate large and small lodging houses and non-transient hotel/motel.

The definition for lodging house does not limit the size of the facility. To be consistent with what can use the IRC, the text in IBC cannot use the standard occupant load limitations. In addition, 5 guest rooms and a proprietors family is most likely to be more than 10 occupants, which is currently in the IBC. In addition, the whole lodging house is not transient.

For small non-transient hotels and motels, the maximum occupant load of 10 is consistent with the current limitations for transient boarding houses.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

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

This is a clarification of the divisions between large and small lodging houses and does not add any requirements for these facilities.

G45-21

IBC: 310.3, 310.4

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Revise as follows:

310.3 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
- *Congregate living facilities* (nontransient) with more than 16 occupants
 - *Boarding houses* (nontransient)
 - Convents
 - *Dormitories*
 - Fire station living quarters
 - Fraternities and sororities
 - Monasteries
- Hotels (nontransient)
- *Live/work units*
- Motels (nontransient)
- Vacation timeshare properties

310.4 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*
- 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*
 - Fire station living quarters
 - Fraternities and sororities
 - Monasteries
- *Congregate living facilities* (transient) with 10 or fewer occupants
 - *Boarding houses* (transient)
- *Lodging houses* (transient) with five or fewer *guest rooms* and 10 or fewer occupants

Reason Statement: Fire stations are often mixed use facilities, and sometime include living quarters. There is the question if this is a single family residence, Group R-3, regardless of the number of fireman using the living quarters. This proposal will clarify how these spaces should be classified.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is a clarification of the correct classification for fire stations.

G46-21

IBC: 310.4, 310.4.2

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

[BG] GUESTROOM. A room used or intended to be used by one or more guests for living or sleeping purposes.

[BG] LODGING HOUSE. A one-family dwelling where one or more occupants are primarily permanent in nature and rent is paid for guest rooms.

SECTION 310 RESIDENTIAL GROUP R.

Revise as follows:

310.4 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*
- 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 (transient) with five or fewer guest rooms and 10 or fewer occupants~~

310.4.2 Lodging houses. Owner-occupied *lodging houses* with five or fewer *guest rooms* and ~~10 or fewer total occupants~~ shall be permitted to be constructed in accordance with this code or the International Residential Code, ~~provided~~ Facilities constructed using the International Residential Code shall be protected by that an automatic sprinkler system is installed in accordance with Section 903.3.1.3 or Section P2904 of the *International Residential Code*.

Reason Statement: The intent of this change is to coordinate with IRC scoping for lodging houses. G40-12 added the defined term 'lodging house' and 'guestroom' and Section 310.4.2 for coordination with the scoping in the 2012 IRC. G40-15 added 'transient' and '10 or fewer occupants'. Since the owner or proprietor lives in the lodging house (see the definition), this is not 'transient', so that language should be deleted in Section 310.4. The reason given for adding "and 10 or fewer occupants" was consistency with the occupancy load for transient boarding houses. However, this does not take into consideration that owner's family as well as the 10 transient occupants. Occupant load is not addressed in the IRC, so this does not match the IRC Scoping in Section 101.2 Exception 2.

If the committee feels that 5 or fewer guestrooms is not a sufficient limitation, a maximum occupant load of either 10 transient occupants, or 16 total occupants could be considered.

The last change to Section 310.4.2 is to allow for a small bed-n-breakfast style hotel to be constructed in accordance with IBC if they so choose.

This is one of a group of proposals intended to coordinate the scoping items in IBC Section 101.2 and IRC 101.2. While the proposals work together, then also work separately. The proposal for coordination will be in Group B.

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

BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

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

This is a clarification of requirements, not a change to construction requirements. Removal of the 10 occupant load from Lodging house, might allow for some small additional B-n-B facilities to be constructed under the IRC.

G59-21

IBC: 403.5.3.1, 1009.8.1, UL Chapter 35 (New) [IFC[BE] 1009.8.1, UL Chapter 80 (New)]

Proponents: Jeffrey S. Grove, P.E. FSFPE, Jensen Hughes, representing Jensen Hughes (jgrove@jensenhughes.com)

THIS CODE CHANGE WILL BE HEARD BY THE MEANS OF EGRESS CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Building Code

SECTION 403 HIGH-RISE BUILDINGS.

Revise as follows:

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. Systems shall be listed to UL 2525 and installed per NFPA 72, or an equivalent standard acceptable to the authority having jurisdiction.

1009.8.1 System requirements. Two-way communication systems shall provide communication between each required location and the *fire command center* or a central control point location *approved* by the fire department. Where the central control point is not a *constantly attended location*, the two-way communication system shall have timed, automatic telephone dial-out capability that provides two-way communication with an approved supervising station or emergency services 9-1-1. The two-way communication system shall include both audible and visible signals. Systems shall be listed to UL 2525 and installed per NFPA 72, or an equivalent standard acceptable to the authority having jurisdiction

Add new standard(s) as follows:

UL

UL LLC
333 Pfingsten Road
Northbrook IL 60062

UL 2525-2020: UL STANDARD FOR SAFETY Two-Way Emergency Communications systems for Rescue Assistance

Staff Analysis: A review of the standard proposed for inclusion in the code, UL 2525-2020, 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 March 20, 2021.

Staff Note: E35-21, E36-21 and G59-21 addresses requirements in a different manner. The committee is urged to make their intentions clear with their actions on these proposals.

Reason Statement: A similar proposal was submitted during the 2018-2019 Group A Code Development Cycle (E35-18). This proposal intends to address questions that arose during that Committee Action Hearing and to include modifications to Section 403.5.3.1. NFPA 72 and UL 2525 are applicable to both code sections, hence a single code change proposal has been submitted.

As stated in the previous code change proposal, Section 1009.8 requires that a two-way communication system be installed at the landing serving each elevator or bank of elevators on an accessible floor that is one or more stories above or below the level of exit discharge. This system is vital for the accessible occupants of a building to communicate their need to be rescued in an emergency situation to the appropriate personnel. Currently, the IBC does not require these systems to be monitored for integrity. There is no way to ensure that these systems are operational if, and when, they are needed unless the systems are used at a non-required point in time and found to be in nonworking condition.

The first modification to Section 1009.8.1 is to address the term "emergency services" versus "9-1-1" as the latter is the colloquial term for emergency services in the USA. As this code may be utilized for international locations, and thus this verbiage modification is appropriate. A similar change is not proposed for Section 403.5.3.1 as high-rise buildings are required to be provided with fire command centers which either must be constantly attended, or the life safety systems are required to be monitored at approved constantly attended stations.

The NFPA 72 SIG-ECS committee recognized that the International Building Code (IBC) provided requirements for these systems, but installation requirements have not been correlated with the IBC to this point. This causes signification confusion on projects as to how these systems are to be designed and who should install these systems (e.g., fire alarm, electrician, low voltage, etc.?). The NFPA 72 committee has specifically addressed these concerns with an expanded section in the 2019 Edition of NFPA 72. By requiring this system to be designed and installed with these NFPA 72 requirements, the system's pathways will be monitored for integrity.

During the previous code development cycle, there was confusion as to the impacts of referencing NFPA 72, as well as the terms "area of rescue" vs. "area of rescue assistance". The NFPA 72 committee recognized these issues, hence the title of the referenced NFPA 72 has been expanded. Further, referencing NFPA 72 does not mean that any building with an accessible floor that is one or more stories above or below the level of exit discharge requires a fire alarm system nor does it necessarily require that the system must be provided with a specific level of pathway survivability. The reference to NFPA 72 is intended to confirm that a two-way communication system is required to be installed per the installation and pathway survivability requirements for two-way communication systems of NFPA 72 Chapter 24. This proposal will provide direction on how to

install these systems, and provide requirements for monitoring of the installed systems.

Further to pathway survivability, NFPA 72 outlines emergency communication systems installed in buildings of less than 2-hour fire-resistive construction may be provided with Level 1, 2 or 3 pathway survivability. Buildings of 2-hour fire-resistance or greater are to be provided with Level 2 or 3 pathway survivability. (This has been included in NFPA 72 since the 2013 edition, with the modification to allow Level 1 survivability included in the 2016 edition.)

Level 1 requirements consists of pathways that are located within fully sprinklered buildings in accordance with NFPA 13 with any interconnecting conductors, cables or other physical pathways protected by metal raceways or metal armored cables.

Level 2 requirements consists of 2-hour rated circuit integrity (CI) or fire resistive cable, 2-hour fire-rated cable system (electrical circuit protective system(s)), circuits located within 2-hour enclosures or protected areas, or performance alternatives approved by the AHJ.

Level 3 requirements meet Level 2 plus located within a fully sprinklered building in accordance with NFPA 13.

Example 1: A 3-story B occupancy of Type IIB construction that is fully sprinklered could utilize Level 1 survivability. As such, the conductors, cables or other physical pathways protected by metal raceways or metal armored cables would be acceptable. Further ratings of cables, conductors, etc., would not be required.

Example 2: A 5-story, R-1 occupancy of Type IB construction would require Level 2 or 3 pathway survivability as the building is of at least 2-hour fire-resistance.

Finally, this adds language to mandate compliance with the recently updated and released (June 12, 2020) edition of UL 2525 *Standard for Two-Way Emergency Communications Systems for Rescue Assistance*, which provides updated and adequate product listing requirements for these critical systems.

Bibliography: UL 2525 *Standard for Two-Way Emergency Communications Systems for Rescue Assistance*, 2020 Edition.

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

However, these cost increases are justified as the code requirements to date have not provided the means of designing and installing these systems.

G67-21

IBC: 406.3.1, 406.3.2 (New)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

SECTION 406 MOTOR-VEHICLE-RELATED OCCUPANCIES.

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.~~

Add new text as follows:

406.3.2 Allowable Area. 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. Where located in a mixed occupancy building, the allowable area of the building shall be determined by including the area of the private garages as part of the area for one of the other occupancies.

Reason Statement: This proposal is to re-instate a provision that G59-12 incidentally removed. Item 1 of Section 406.3.2 of the 2012 IBC provided a path to include the area of a private garage as part of the major occupancy of the building. This allowed for attached private garages in buildings where they are commonly located to not cause a significant reduction in the allowable area of the entire building. G59-12 removed that provision without providing another measure to address it. Not allowing this often creates an unnecessary and significant reduction in the allowable area of the building. For instance, where located in a Group B or M, as the private garage is classified as a U, the allowable area of the non-sprinklered building is 5,500 instead of 9,000. Section 406.3.2, which does address other occupancies, would require compliance with 508 and therefore require a 2-hour fire barrier to allow minimal additional area.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

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

This proposal will result in a reduction in cost of construction in cases where it will allow for a larger building without having to go to a more restrictive type of construction, or other method of area increase.

G68-21

IBC: 406.3.1, 406.3.1.1 (New), 406.6.2

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

2021 International Building Code

SECTION 406 MOTOR-VEHICLE-RELATED OCCUPANCIES.

Revise as follows:

406.3.1 Classification. *Private garages* and carports shall be classified as Group U occupancies. ~~Each A private garage shall be not greater than 1,000 3,000 square feet (93 m²) (279 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.~~ Private garages shall be atmospherically separated from enclosed parking garages or open parking garages.

Add new text as follows:

406.3.1.1 Multiple private garages. Multiple private garages are permitted in a building where each private garage has a floor area not greater than 1,000 square feet (93 m²) and is separated from the other parking garages or private garages by 1-hour fire barriers in accordance with Section 707, or 1-hour horizontal assemblies in accordance with Section 711, or both.

Revise as follows:

406.6.2 Ventilation. A mechanical *ventilation* system and exhaust system shall be provided in accordance with Chapters 4 and 5 of the International Mechanical Code.

Exception Exceptions:

1. Mechanical *ventilation* shall not be required for enclosed parking garages that are accessory to one- and two-family *dwellings*.
2. Mechanical *ventilation* shall not be required for enclosed private garages that have a floor area of 3,000 square feet (279 m²) or less.

Reason Statement: The proposed code change is submitted to address what may have been an error in the adoption of a reduction to the permitted area for private garages when amendments to the 2012 IBC were debated, and ultimately approved in Portland. While not apparent then, code application for projects today reveals that what seemed to be a benign code change is placing significant burdens on small residential mixed-use projects and small non-residential projects incorporating private garages for their tenants. The code change did not consider the impacts on covered common parking areas that the IBC does not exclude from a Group U private garage classification (see figures 1, 2 below).

Reason for code change: Many urban Cities in the United States, like San Diego, are working to solve housing affordability issues and encourage infill development to eliminate blight. Frequently these projects are proposed on constrained sites and on sites that previously accommodated one or two single family dwellings with alley access from a 15 ft or 20 ft wide alley; some alleys are 10 ft wide but they are less common. Additionally, and to encourage walkable communities zoning regulations require some street frontage of non-residential space so a token office or small retail space are incorporated. The proposed code change seeks to permit small projects to incorporate private garages classified as Group U that have an area up to 3,000 sq ft as was the case prior to publication of the 2015 IBC. This code change will provide the following benefit:

- Will allow configurations with Group U private garages accessed by common driveways that are located below upper levels of the building.
- Will allow small parking garages to serve a mixed use building without classifying the garage as Group S-2 public or open garages. This will reduce the cost of construction and the need for mechanical ventilation or non-combustible construction.
- If constructed with non rated construction, this code change may lessen fire separation burdens on the alley side where FSD may be 10 feet to the center line of a 20 ft alley, since many projects are of Type VB construction.
- Will prevent gaming of the system where the common driveway is classified as Group S-2 and the private garages as Group U with separation only provided between group U private garages. Table 508.4 does not require a separation between Group S-2 and U since it does not expect both to be located in the same building or even parking area.
- Will prevent the need to divide up a small garage with fire barriers to satisfy the 1,000 sq ft area limit and require the installation of overhead rolling fire doors that will not be maintained.

Many of the proposed private garages need to exceed 1,000 sq ft to accommodate accessible parking, spaces with required electric vehicle chargers as well as residential and non-residential parking.

- We see project configurations with attached private garages in 4- or 5-unit buildings that have private vehicular entry doors and are served by drive aisles that are covered by the building above. The garage area is also about 1,800 to 3,000 sq ft. The area of the drive aisle which is under the building above is also classified as Group U and is additive to the Group U area. When designed to comply with the 2021 IBC these projects need to be divided by 1 or more fire barriers and the fire barriers require one or more roll up fire doors to accommodate drive aisles passing through or need to be placed in front of the attached private garages. An unnecessary level of complexity and a reliance on homeowners to maintain fire doors associated with unit garages make the regulations ineffective.

- When parking requirements for residential and non-residential uses are compounded with required accessible parking spaces for both residential and non-residential uses as well as spaces for electric vehicle charging systems a small project has no room for the placement of the 1-hour fire barriers and as a result another option is necessary. Vehicle stacker lifts are becoming popular to accommodate small garages however accessible and EV parking cannot be stacked and drive aisles and turning spaces are also needed to access all three types of spaces. The attached Figure 1 shows a mixed use 2 story building with two R-3 dwellings above a Group B and private garage for the use of residential and non-residential tenants.
- Consistent application of the code is not possible since a garage classified as Group S-2 does not require a separation from a private garage classified as Group U so applicant have separated private garages from one another with a 1-hour fire barrier and classified the drive aisle as Group S-2 with entry points of the drive aisle providing ventilation. The Figure 2 attached shows a garage/driveway covered by an R-2 building above.

The main reason that a Group U parking garage is desirable are the two following requirements:

1. Mechanical ventilation is not required for private garages but is required for public garages if not complying as open parking garages (IMC Section 404.1).
2. Exterior wall opening area limitations applicable to S-2 enclosed parking garages are significantly more onerous than for Group U, since the latter have no limit at FSD of 10 ft (due to IBC Table 705.5 allowance for zero fire resistance for exterior wall in zero rated type B construction per IBC 705.8.1 Exc 2). Only open parking garages get this benefit, group U private garages do not require openness to omit ventilation.

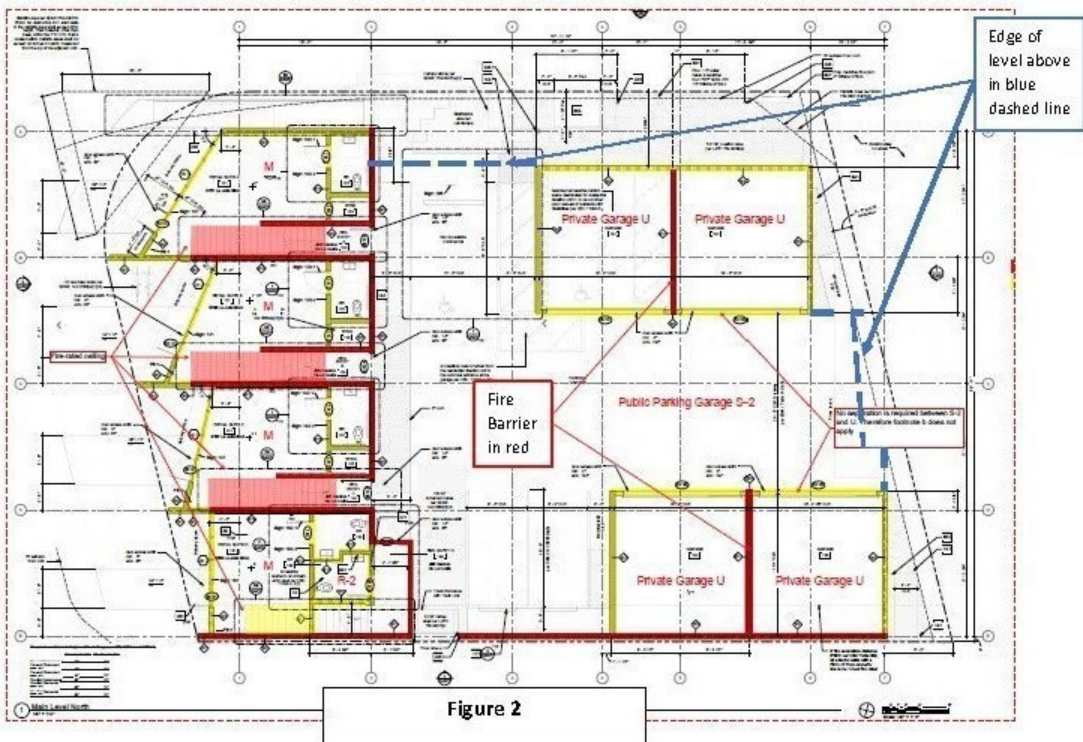
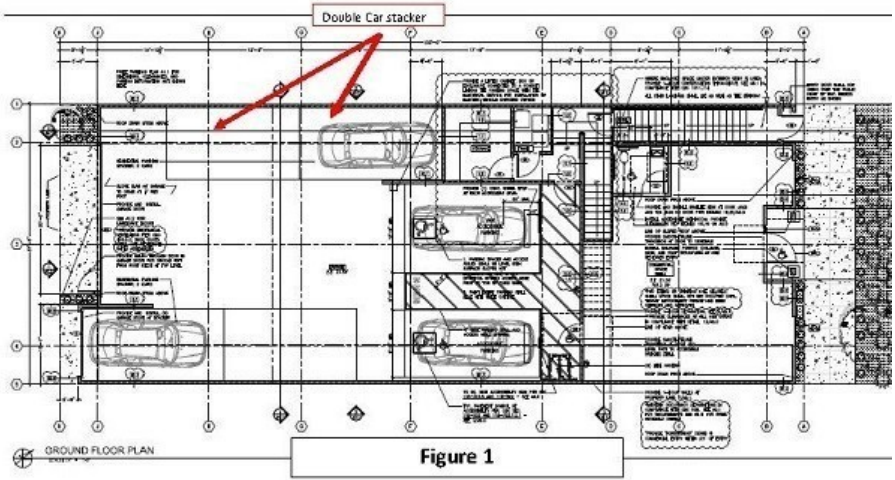
Code Change G59-12: The proposed code change provides a necessary update to the IBC to correct inadvertent issues that resulted from the adoption of G59-12 attached which was submitted by the Building Code Action Committee. The code changes revised Section 406 to complete regulations for private garages that somehow during the drafting of the 2000 IBC omitted necessary requirements for carports and the code change added definitions for private garages. Additionally, then Section 406.3.2 was deleted to not allow area increases to the then permitted 3,000 sq ft area limit. Section 406.3.1 was also revised to require a 1-hour fire barrier to separate private garages from one-another and most likely the building configuration envisioned was exterior driveways open to the sky providing access to a series of side by side double or tandem private garages that either had direct/indirect access to dwelling units.

- The code change lowered the area threshold to 1,000 from the 3,000 sq ft that has existed since the publication of the 1967 UBC but did not provide justification for why it was necessary to reduce the area from a fire risk perspective.
- The justification also discussed the area limit in the context of natural ventilation openings and cited Section 402.2 of the International Mechanical code that requires "The minimum openable area to the outdoors shall be 4 percent of the floor area being ventilated." exterior openings. Furthermore, an additional general requirement in the charging Section 401.2 to the chapter 4 requires that "Every occupied space shall be ventilated by natural means in accordance with Section 402 or by mechanical means in accordance with Section 403."
- If mechanical ventilation is not present the IMC requires natural ventilation for all uses and occupancies including private garages, and as a result there was no reason to reduce the area of garages due to ventilation concerns.

The proposed code change results in an option to allow a larger private garage that has been 3,000 sq ft for more than 45 years with no known issues due CO exposure or fire hazards. Additionally, auto emissions have improved significantly over the past 50 years and the prevalence of electric vehicles and hybrid vehicles further reduces vehicle emissions. Hazards in garages due to CO occur during long term exposure and where there is a constant flow of motor vehicles like in the case for example of below ground garages in regional shopping malls. The hazards are primarily to the parking toll taker when not automated.

Mixed use residential buildings are always protected at least with an NFPA 13-R system and the garages are protected with an NFPA 13 compliant system and this code change reasonably reinstates regulations that have existed for decades without lessening fire safety even with the increased hazards due to plastics in vehicles and difficulties in fighting fire in electric and hybrid vehicles due to batteries.

We request that the General Committee vote to approve this code change.



Cost Impact: The code change proposal will decrease the cost of construction. The proposal may reduce the need for mechanical ventilation systems in the garages and will reduce the need for fire barriers and opening protectives within them. The proposal also makes the projects more feasible.

G86-21 Part I

PART I - IBC: SECTION 202, 411.1, 411.5, 411.6, 411.6.1, 411.7, TABLE 903.2.11.6; ICCPC: [BG] A103.1.9.12

PART II - IFC: 105.5.3, SECTION 202 (New), TABLE 903.2.11.6, 907.2.12 (IBC[F]907.2.12), 907.2.12.1(IBC[F]907.2.12.1), 907.2.12.2(IBC[F]907.2.12.2), 907.2.12.3(IBC[F]907.2.12.3), 914.7, 914.7.2, 914.7.2.1 (New), 914.7.2.2 (New), 914.7.2.3 (New); IBC: [F]411.3, 411.3.1 (New), 411.3.2 (New), [F]411.4

Proponents: Jeffrey Shapiro, representing Self (jeff.shapiro@intlcodeconsultants.com)

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY THE GENERAL CODE COMMITTEE. PART II WILL BE HEARD BY THE FIRE CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Building Code

Revise as follows:

[BG] SPECIAL AMUSEMENT AREA. ~~A special amusement area is any~~ temporary or permanent building or portion thereof that is occupied for amusement, entertainment or educational purposes and is arranged in a manner that meets one or more of the following descriptions:

1. Makes the means of egress path not readily apparent due to visual or audio distractions.
2. Intentionally confounds identification of the means of egress path.
3. Otherwise makes the means of egress path not readily available because of the nature of the attraction or mode of conveyance through the building or structure.

[BG] PUZZLE ROOM. A puzzle room is a type of *special amusement area* in which occupants are encouraged to solve a challenge to escape from a room or series of rooms. A puzzle room is sometimes referred to as an escape room.

SECTION 411 SPECIAL AMUSEMENT AREAS.

Revise as follows:

411.1 General. *Special amusement areas* having an *occupant load* of 50 or more shall comply with the requirements for the appropriate Group A occupancy and Sections 411.1 through 411.7. *Special amusement areas* having an *occupant load* of less than 50 shall comply with the requirements for a Group B occupancy and Sections 411.1 through 411.7.

Exception Exceptions:

1. Special amusement areas that are without walls or a roof and constructed to prevent the accumulation of smoke ~~need~~ are not required to comply with this section.
2. Puzzle rooms provided with a means of egress that is unlocked, readily identifiable and always available are not required to comply with this section.

Delete without substitution:

411.5 Puzzle room exiting. ~~Puzzle room exiting shall comply with one of the following:~~

- ~~1. Exiting in accordance with Chapter 10.~~
- ~~2. An alternative design approved by the building official.~~
- ~~3. Exits shall be open and readily available upon activation by the automatic fire alarm system, automatic sprinkler system, and a manual control at a constantly attended location.~~

Revise as follows:

411.4 ~~411.6~~ **Exit marking.** Exit signs shall be installed at the required *exit* or *exit access doorways* serving *special amusement areas* in accordance with this section and Section 1013. *Approved* directional exit markings shall be provided. Where mirrors, mazes or other designs ~~are utilized that~~ disguise the path of egress travel such that ~~they are~~ the path of egress travel is not apparent, *approved* and *listed* low-level exit signs that comply with Section 1013.5, and directional path markings *listed* in accordance with UL 1994, shall be provided and located not more than 8 inches (203 mm) above the walking surface and on or near the path of egress travel. Such markings shall become visible in an emergency. The directional exit marking shall be activated by the *automatic smoke detection system* and the *automatic sprinkler system* in accordance with Section ~~411.3.2. 907.2.12.~~

~~411.6.1~~ **411.4.1 Photoluminescent exit signs.** Where *photoluminescent exit* signs are installed, such signs shall be listed, and the activating light source and viewing distance shall be in accordance with the listing and markings ~~one of the signs.~~

411.5 411.7 Interior finish. ~~The~~

~~interior. Interior wall and ceiling finish materials in special amusement areas shall be meet the flame spread index and smoke-developed index requirements for Class A in accordance with Section 803.1.~~

411.6 Flammable decorative materials. *Flammable decorative materials shall comply with Section 806.*

**TABLE 903.2.11.6
ADDITIONAL REQUIRED PROTECTION SYSTEMS**

Portions of table not shown remain unchanged.

SECTION	SUBJECT
411.3	Special amusement buildings areas

2021 International Code Council Performance Code

Revise as follows:

[BG] A103.1.9.12 SP-12, Special amusement area . A temporary or permanent building or portion thereof that is occupied for amusement, entertainment or educational purposes and is arranged in a manner that meets one or more of the following descriptions:

1. Makes the means of egress path not readily apparent due to visual or audio distractions.
2. Intentionally confounds identification of the means of egress path.
3. Otherwise makes the means of egress path not readily available because of the nature of the attraction or mode of conveyance through the building or structure.

~~A temporary, permanent or mobile area, building or structure that is occupied for amusement, entertainment or educational purposes and that contains a device or system that conveys passengers or provides a walkway along, around or over a course, in any direction, so arranged that means of egress are not readily apparent because of visual or audible distractions, or are intentionally confounded, or are not readily available because of the nature of the attraction or the mode of conveyance through the building or structure.~~

It shall be assumed that:

1. Occupants, visitors and employees are awake, alert, predominantly able to exit without the assistance of others and unfamiliar with the area, building or structure.
2. Risk of injury and risk to health assumed by occupants, visitors and employees during their use of the area, building or structure are predominantly involuntary and high.
3. Public expectations regarding the protection afforded those occupying, visiting or working in such an area, building or structure are high.

G86-21 Part II

PART II - IFC: 105.5.3, SECTION 202 (New), TABLE 903.2.11.6, 907.2.12 (IBC[F]907.2.12), 907.2.12.1(IBC[F]907.2.12.1), 907.2.12.2(IBC[F]907.2.12.2), 907.2.12.3(IBC[F]907.2.12.3), 914.7, 914.7.2, 914.7.2.1 (New), 914.7.2.2 (New), 914.7.2.3 (New); IBC: [F]411.3, 411.3.1 (New), 411.3.2 (New), [F]411.4

Proponents: Jeffrey Shapiro, representing Self (jeff.shapiro@intlcodeconsultants.com)

2021 International Fire Code

Add new definition as follows:

PUZZLE ROOM. A puzzle room is a type of special amusement area in which occupants are encouraged to solve a challenge to escape from a room or series of rooms. A puzzle room is sometimes referred to as an escape room.

Delete and substitute as follows:

SPECIAL AMUSEMENT BUILDING. A building that is temporary, permanent or mobile that contains a device or system that conveys passengers or provides a walkway along, around or over a course in any direction as a form of amusement arranged so that the egress path is not readily apparent due to visual or audio distractions or an intentionally confounded egress path, or is not readily available because of the mode of conveyance through the building or structure.

SPECIAL AMUSEMENT AREA. A temporary or permanent building or portion thereof that is occupied for amusement, entertainment or educational purposes and is arranged in a manner that meets one or more of the following descriptions:

1. Makes the means of egress path not readily apparent due to visual or audio distractions.
2. Intentionally confounds identification of the means of egress path.
3. Otherwise makes the means of egress path not readily available because of the nature of the attraction or mode of conveyance through the building or structure.

Revise as follows:

105.5.3 Amusement ~~areas~~ buildings. An operational permit is required to operate *aspecial amusement ~~area~~ building*.

**TABLE 903.2.11.6
ADDITIONAL REQUIRED FIRE PROTECTION SYSTEMS**

Portions of table not shown remain unchanged.

SECTION	SUBJECT
914.7.1	Special amusement areas buildings

907.2.12 Special amusement ~~areas~~ buildings. Fire detection and alarm systems shall be provided in *special amusement areas* in accordance with Section 914.7.2. ~~An automatic smoke detection system shall be provided in special amusement buildings in accordance with Sections 907.2.12.1 through 907.2.12.3.~~

Delete without substitution:

907.2.12.1 Alarm. ~~Activation of any single smoke detector, the *automatic sprinkler system* or any other automatic fire detection device shall immediately activate an audible and visible alarm at the building at a constantly attended location from which emergency action can be initiated, including the capability of manual initiation of requirements in Section 907.2.12.2.~~

907.2.12.2 System response. ~~The activation of two or more smoke detectors, a single smoke detector equipped with an alarm verification feature, the *automatic sprinkler system* or other *approved* fire detection device shall automatically do all of the following:~~

- ~~1. Cause illumination of the *means of egress* with light of not less than 1 footcandle (11 lux) at the walking surface level.~~
- ~~2. Stop any conflicting or confusing sounds and visual distractions.~~
- ~~3. Activate an *approved* directional *exit* marking that will become apparent in an emergency.~~
- ~~4. Activate a prerecorded message, audible throughout the special amusement building, instructing patrons to proceed to the nearest *exit*. Alarm signals used in conjunction with the prerecorded message shall produce a sound that is distinctive from other sounds used during normal operation.~~

907.2.12.3 Emergency voice/~~alarm communication system.~~ ~~An emergency voice/alarm communication system, which is allowed to serve as a public address system, shall be installed in accordance with Section 907.5.2.2 and be audible throughout the entire special amusement building.~~

Revise as follows:

914.7 Special amusement areas. Special amusement areas shall comply with Sections 914.7.1 and 914.7.2.

Exceptions:

1. Special amusement areas that are without walls or a roof and constructed to prevent the accumulation of smoke need are not required to comply with this section.
2. Puzzle rooms provided with a *means of egress* that is unlocked, readily identifiable and always available are not required to comply with this section.

914.7.1 Automatic sprinkler system. Buildings containing special amusement areas shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1. Where the special amusement area is temporary, the sprinkler water supply shall be of an *approved* temporary means.

Exception: Automatic sprinklers are not required where the total floor area of a temporary special amusement area is less than 1,000 square feet (93 m²) and the *exit access* travel distance from any point in the special amusement area to an *exit* is less than 50 feet (15 240 mm).

Revise as follows:

914.7.2 Detection and alarm systems. Automatic smoke detection. Buildings containing *special* special amusement areas shall be equipped throughout with an *automatic smoke detection system* and an *emergency voice/alarm communications system* in accordance with Section 907.2.12. ~~Pre-signal alarms and alarm activation shall comply with Sections 914.7.2.1 and 914.7.2.2, and *emergency voice/alarm communications* systems shall comply with Section 914.7.2.3.~~

914.7.2.1 Alarm pre-signal. Activation of any single smoke detector, the *automatic sprinkler system* or any other single automatic fire detection device shall immediately initiate an audible and visible alarm at a constantly attended location at the *special amusement area* from which emergency action can be initiated, including the capability of manual initiation of requirements in Section 914.7.2.2.

914.7.2.2 Alarm activation. Activation of two or more smoke detectors, a single smoke detector equipped with an alarm verification feature, two or more other *approved* fire detection devices, the *automatic sprinkler system*, or a manual control located at the constantly attended station required

by Section 914.7.2.1 shall automatically accomplish all of the following:

1. Automatically illuminate the means of egress with an illumination level not less than 1 footcandle (11 lux) at the walking surface level.
2. Stop conflicting or confusing sounds and visual distractions.
3. Activate approved directional exit markings.
4. Activate a prerecorded message, audible throughout the special amusement area, instructing occupants to proceed to the nearest exit. Alarm signals used in conjunction with the prerecorded message shall produce a sound that is distinct from other sounds used during normal operation of the special amusement area.

914.7.2.3 Emergency voice/alarm communications system. An emergency voice/alarm communications system complying with Section 907.5.2.2 shall be installed in and audible throughout special amusement areas. The emergency voice/alarm communications system is allowed to also serve as a public address system.

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[F] **411.2 Automatic sprinkler system.** Buildings containing *special amusement areas* shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1. Where the *special amusement area* is temporary, the sprinkler water supply shall be of an *approved* temporary means.

Exception: *Automatic* sprinklers are not required where the total floor area of a temporary *special amusement area* is less than 1,000 square feet (93 m²) and the *exit access* travel distance from any point in the *special amusement area* to an exit is less than 50 feet (15 240 mm).

Revise as follows:

411.3 Detection and alarm systems Fire alarm system. Buildings containing *special amusement areas* shall be equipped throughout with an *automatic smoke detection system* and an *emergency voice/alarm communications system* in accordance with Section ~~907.907.2-13~~. Pre-signal alarms and alarm activation shall comply with Sections 411.3.1 and 411.3.2, and emergency voice/alarm communications systems shall comply with Section 411.3.3.

Add new text as follows:

411.3.1 Alarm pre-signal. Activation of any single smoke detector, the *automatic sprinkler system* or any other single automatic fire detection device shall immediately initiate an audible and visible alarm at a constantly attended location at the *special amusement area* from which emergency action can be initiated, including the capability of manual initiation of requirements in Section 411.3.2.

411.3.2 Alarm activation. Activation of two or more smoke detectors, a single smoke detector equipped with an alarm verification feature, two or more other approved fire detection devices, the *automatic sprinkler system*, or a manual control located at the constantly attended station required by Section 411.3.1 shall automatically accomplish all of the following:

1. Automatically illuminate the means of egress with an illumination level not less than 1 footcandle (11 lux) at the walking surface level.
2. Stop conflicting or confusing sounds and visual distractions.
3. Activate approved directional exit markings.
4. Activate a prerecorded message, audible throughout the special amusement area, instructing occupants to proceed to the nearest exit. Alarm signals used in conjunction with the prerecorded message shall produce a sound that is distinct from other sounds used during normal operation of the special amusement area.

Revise as follows:

[F] ~~411.4~~**411.3.3 Emergency voice/alarm communications system.** An emergency voice/alarm communications system shall be provided in accordance with Section ~~907.2-12~~ complying with Section 907.5.2.2 shall be installed in and audible throughout special amusement areas. The emergency voice/alarm communications system is allowed to also serve as a public address system.

Reason Statement: This proposal executes numerous fixes and clean-ups related to Proposal G48-18, which updated some provisions related to special amusement buildings and added provisions for puzzle rooms. Unfortunately, there were some shortcomings in that proposal that remained undiscovered until after it was too late to fix these in the 2021 edition. Explanation for individual changes are as follows:

IFC:

- 105.5.3: Updates the old "special amusement building" references to the new "special amusement area" concept.
- 202: Updates and correlates the IFC definition of "special amusement area" with the updated 2021 definition in the IBC.
- Table 903.2.11.6: Updates the old "special amusement building" references to the new "special amusement area" concept.
- 907.2.12: Updates the old "special amusement building" references to the new "special amusement area" concept. Also, moves the content from 907.2.12 to 914.7 so that all of the special amusement area requirements are in one place. Section 914 is the appropriate location for all of this text.

- 914.7: Adds a reference to the IBC for other important safety requirements and brings in the exceptions that are currently in IBC Section 411, which negate having to comply with special amusement area requirements for outdoor areas and for some puzzle rooms. This addresses/eliminates a current conflict between the codes. The definition of "puzzle room" has also been pulled into the IFC from the IBC since the term will now appear in the IFC.
- 914.7.2: Brings in the fire alarm requirements previously located in 907.2.12 with edits for improved clarity. The term "throughout" has been added for clarity. The IBC Section 411.3 stated "buildings containing special amusement areas" require detection and alarm, and the term "throughout" emphasizes that the requirement applies to the building, not just the special amusement area per the IBC provision. Other changes in this section and the following sections in 914.7 are intended as non-technical edits to improve flow and clarity.

IBC:

- 202: The definition of special amusement area has been edited for clarity.
- Table 903.2.11.6 and Section 907.2.12 changes have the same reasons as companion changes to the IFC described above.
- 411.1: a second exception has been added for "puzzle rooms," a term that was added in the 2021 code by Proposal G48-18. This exception is essential for the proper application of Section 411 to puzzle rooms, but when Proposal G48-18 was entered into cdpACCESS last cycle, the text was somehow omitted, which went unnoticed until it was too late to fix the mistake in the 2021 code.
- 411.3: this section has been updated to correlate with the revised (herein) IFC Section 914.7 re detection and alarm systems.
- 411.5: this section should have been omitted from Proposal G48-18, but it was mistakenly included and went unnoticed until it was too late to fix the mistake in the 2021 code. When the second exception was added to Section 411.1, this section was no longer needed.
- 411.6 (now 411.4): changes are intended as non-technical clarifications. Re. photoluminescent signs, the section required compliance with listing criteria, but didn't previously have a specific reference that required listed signs.
- 411.7 (now 411.5): changes are intended as non-technical clarifications.
- 411.6 (new): regulation of flammable decorative materials was previously included in this section, but Proposal G48-18 inadvertently omitted it when the provisions were re-written.

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- Updates and correlates the introductory text, which was originally copied from the former definition of "special amusement building." The proposed text is copied from the 2021 definition of "special amusement area" in the IBC and proposed herein for the IFC.

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

Most of the recommended changes are non-technical and simply improve usability of the code. However, the change that adds a new exception for puzzle rooms will reduce the code of construction for some of these uses by not requiring qualifying puzzle rooms to meet regulations for special amusement areas.

G94-21

IBC: SECTION 202, 423.1, 423.3.1, 423.5.1

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org); Marc Levitan, representing ICC 500 Storm Shelter Standard Committee (marc.levitan@nist.gov)

2021 International Building Code

Revise as follows:

[BG] STORM SHELTER. A building, structure or portions thereof, constructed in accordance with ICC 500 and designated for use during a ~~severe wind storm event, such as a hurricane or tornado~~ hurricanes, tornadoes or other severe windstorms.

SECTION 423 STORM SHELTERS.

Revise as follows:

423.1 General. This section applies to the design and construction of storm shelters constructed as separate detached buildings or constructed as rooms or spaces within buildings for the purpose of providing protection from ~~storms that produce high winds, such as tornadoes, and hurricanes, and other severe windstorms~~ during the storm. This section specifies where *storm shelters* are required and provides requirements for the design and construction of *storm shelters*. Design of facilities for use as emergency shelters after the storm are outside the scope of ICC 500 and shall comply with Table 1604.5 as a *Risk Category IV* Structure.

423.3.1 Dedicated storm shelters. A facility designed to be occupied solely as a *storm shelter* shall be classified as Group A-3 for the determination of requirements other than those covered in ICC 500.

Exceptions:

1. The occupancy category for dedicated *storm shelters* with ~~an a design occupant load~~ capacity of fewer less than 50 persons as determined in accordance with ICC 500 shall be in accordance with Section 303.
2. The occupancy category for a dedicated residential *storm shelter* shall be the Group R occupancy served.

423.5.1 Required Design occupant capacity. The required design occupant capacity of the *storm shelter* shall include all of the buildings on the site and shall be the greater of the following:

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

Exceptions:

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

Reason Statement: ICC 500, a current reference standard in the IBC, IRC and IEBC, was recently updated to a 2020 edition for reference in the 2021 I-Codes. The new edition made some minor revisions to terminology differences that need to be reflected in the corresponding IBC Section 423 language. The key changes are as follows:

- Refer consistently to “tornadoes, hurricanes and other severe windstorms” to reflect that extratropical events are called hurricanes, typhoons or cyclones depending on region.
- Replace “occupant load” with design occupant capacity” to reflect ICC-500’s unique calculation of shelter capacity, which is different from the occupant load used in the IBC to size means of egress.
- Clarifying the term “community shelters” includes those shelters open to the general public, those open only to the occupants of the building served by the shelter, or both.

A corresponding proposal will be submitted in Group B to update Section R323 of the IRC.

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

BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or

portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

The ICC 500 (Standard for the Design and Construction of Storm Shelters) development committee has held several virtual meetings during the last two years to develop the 2021 edition. In addition, there were numerous virtual Working Group meetings. All meetings included members of the committee as well as interested parties. Related documents and reports are posted on the ICC 500 website at ICC 500.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. The changes are editorial and necessary for correlation with ICC-500. They do not impact the way storm shelters are designed and constructed.

G95-21

IBC: 423.4.1 (New)

Proponents: Benchmark Harris, representing National Storm Shelter Association (bharris@huckabee-inc.com)

2021 International Building Code

423.4 Critical emergency operations. In areas where the shelter design wind speed for tornados in accordance with Figure 304.2(1) of ICC 500 is 250 mph, 911 call stations, emergency operation centers and fire, rescue, ambulance and police stations shall comply with Table 1604.5 as a *Risk Category IV* structure and shall be provided with a *storm shelter* constructed in accordance with ICC 500.

Add new text as follows:

423.4.1 Location. Storm shelters shall be located within the building they serve or shall be located where the maximum distance of travel from not fewer than one exterior door of each building to a door of the shelter serving that building does not exceed 1,000 feet (305 m).

Reason Statement: There currently are no criteria limiting the travel distance to storm shelters for critical emergency operations facilities. Last code cycle, NSSA proposed that the travel distance provision be deleted entirely from the E occupancy requirements for storm shelters in the IBC but it was rejected. A similar motion was approved in the IEBC, though. The intent of this proposal is to apply the same travel distance requirements in the IBC to critical emergency operations center storm shelters as for E occupancy storm shelters. So, this proposal follows the requirements for travel distance of Group E occupancies.

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

This will increase the cost of construction on some projects (where a campus has multiple buildings far apart) by requiring critical emergency operations centers have the same travel distance requirement that E occupancy areas do. In cases, this will require multiple storm shelters as it does for E occupancy facilities.

G96-21

IBC: 423.4.1 (New)

Proponents: Benchmark Harris, representing National Storm Shelter Association (bharris@huckabee-inc.com)

2021 International Building Code

423.4 Critical emergency operations. In areas where the shelter design wind speed for tornados in accordance with Figure 304.2(1) of ICC 500 is 250 mph, 911 call stations, emergency operation centers and fire, rescue, ambulance and police stations shall comply with Table 1604.5 as a *Risk Category IV* structure and shall be provided with a *storm shelter* constructed in accordance with ICC 500.

Add new text as follows:

423.4.1 Required Occupant Capacity. The required occupant capacity of the storm shelter shall include all of the buildings on the site and shall be the greater of the following:

1. The total occupant load of offices.
2. The occupant load of the largest indoor assembly space.

Exceptions:

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

Reason Statement: There are currently no minimum requirements for occupant capacity of a storm shelter for 911 call stations, emergency operation centers and fire, rescue, ambulance and police stations. This proposal follows the requirements for occupant load of Group E occupancies. This proposal would give a basis of design for storm shelters to set a minimum size standard for designers to start the design of the storm shelter.

NSSA submitted a change to the IBC last cycle that was rejected but would have eliminated the Assembly area criteria for E occupancy areas. A similar motion was approved at the IEBC, however. This change would provide consistency with the E occupancy area provisions in the IBC.

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

This will increase the cost of construction because it will require storm shelters be designed for the largest indoor assembly area on a site. This could include a City Hall Assembly Area, for example, but this would make the provision consistent with the requirements for E occupancy areas, as the IBC requires schools design for the largest indoor assembly areas even if it's a large and open performing arts area open to the public, unrelated to education, with a capacity much larger than the largest expected student population on a regular school day.

G97-21

IBC: 423.5.1

Proponents: CRAIG MCKEE, representing Huckabee, Inc (cmckee@huckabee-inc.com)

2021 International Building Code

Revise as follows:

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

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

Exceptions:

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

Reason Statement: For the same reason that the code does not require shelters for the entire population that outdoor venues can accommodate, such as outdoor football fields, it should not be necessary for schools to increase the size of the shelters for criteria 2. It is common for schools to share sites with other buildings that have indoor assembly areas that many building officials conservatively consider to be associated with a Group E occupancy. These assembly areas are often on the same site as the school and are sometimes even used by students during the school day, but these assembly areas do not add to the normal population of students in school and the staff that are associated with those students. Many school communities can understand and support the unfunded mandate in tornado prone areas that schools bear the cost of providing tornado shelters for minors that are required by law to be in the care of a school and those adult individuals taking care of them, out of an elevated obligation that comes with having school be mandatory for minors in our country. However, it is inappropriate to require that school systems bear the cost of sheltering possible occupants from the public at these areas. The population for criteria 2 can be significantly larger than criteria 1 when there are large assembly spaces on the site such as a public library (e.g. when a public library operates on a school campus and also functions as the school library), indoor football field, performing arts center, equestrian arena, natatorium, competition basketball arena, and/or professional development center.

The additional people in question (above and beyond criteria 1) elect to be in those assembly areas (as adults, or as minors before or after normal school hours at the permission of their parents/guardians), just like they do in any commercial or other public assembly area. If ICC believed that the public in all assembly areas needed to be sheltered because the tornado hazards are that significant in those areas, then those types of businesses should be required to build tornado shelters too. The current code places an inequitable financial burden on school districts. More importantly, though, the additional area of shelter will most likely never be used.

Yes, if a tornado with windspeeds greater than the main building was designed to withstand happens to occur at the exact moment that there is an assembly with more people than the criteria 1 population, the additional area of the shelter could be used. However, there is a very low probability of this occurring and, other than this occurrence, the additional area of shelter would typically never be used because school districts that are constructing code-required shelters (not FEMA funded safe rooms) typically have no intention of ever opening their tornado shelters up to the general public because of the many operational challenges (e.g. concern with overcrowding above the shelter capacity) and increased liability.

This issue is further complicated by the fact that Section 432.5.2 requires storm shelters be within 1,000 feet of the buildings they serve. Many high school campuses have buildings with Assembly functions (that building officials conservatively consider to be associated with an E occupancy) greater than 1,000 feet from the school building. The code is not clear whether these assembly areas require their own tornado shelter. Removing criteria 2 would resolve this dilemma by clearly identifying that the occupant load of the classrooms, vocational areas and offices are the areas that need to be served with tornado shelters.

The rationale to remove criteria 2 applies to new campuses as well as existing campuses; however, it is especially applicable for new buildings on existing campuses where options to provide a tornado shelter are much more limited because the existing buildings were not laid out with a future tornado shelter in mind.

The following is an example:

There is an existing performing arts center on a 100 Acre site, with the two buildings more than 1,000 feet apart, and the 2021 IBC is in effect. The

school system proposes a new academic building with a criteria 1 population of 2,000. The criteria 1 population of the performing arts center is 0. The Building Official considers the performing arts center to be an A that is associated with an E occupancy. There are moveable partitions in the performing arts center that allow all of the rooms (except for the lobby) to open up into one large performing arena for 5,000 people in seats and up to 500 people on stage, making the criteria 2 population (the largest indoor assembly area associated with the E occupancy on the site) 5,500 people. The school system is required to build a shelter for at least 5,500 people because the floor plan area of the proposed addition to the academy could accommodate 5,500 people if the entire addition was one large tornado shelter. If the two buildings were closer than 1,000 feet, the 2021 IBC criteria 2 would require \$10 Million of sheltering (\$5.6 Million for the 2,000 people in a multi-purpose shelter and \$4.4 Million for 3,500 people in a dedicated, single-use shelter). This means that even in the 1,000 feet proximity rule was not in effect, this school system would need to spend \$4.4 Million on sheltering the additional population that could be in a performing arts center. However, because the buildings are more than 1,000 feet apart, the actual cost impact of criteria 2 is much greater at this campus because 2 separate shelters are required to accommodate the travel distance requirement. 2021 IBC section 432.5.2 requires that the shelters be located within 1,000 feet of the "population they serve" and these two buildings are more than 1,000 feet apart. Therefore, the code requires that a 5,500 person shelter be constructed as a new addition to the performing arts center to accommodate that population and a 2,000 person shelter be constructed as part of the proposed academic building. The combined cost of these two shelters would be \$12.5 Million (\$5.6 Million for the 2,000 people in the multi-purpose shelter by the academy and \$6.9 Million for 5,500 people in a dedicated, single-use shelter by the performing arts center). Without criteria 2, only a \$5.6 Million shelter would be required for the 2,000 occupants associated with criteria 1 on the entire campus.

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

There will be a decrease in the cost for storm shelters for new school buildings on existing campuses that have associated assembly spaces larger than the student population.

G98-21

IBC: 423.5.2

Proponents: CRAIG MCKEE, representing Huckabee, Inc (cmckee@huckabee-inc.com)

2021 International Building Code

Revise as follows:

423.5.2 Location. Storm shelters shall be located within the buildings they serve or shall be located where the maximum distance of travel from not fewer than one exterior door of each building to a door of the shelter serving that building does not exceed 1,000 feet (305 m), unless otherwise approved.

Reason Statement: While 1,000 feet maximum travel may be appropriate for new schools on new campuses, this can be an undue hardship for new buildings on existing campuses. Where a new building is located on an existing campus may be limited by a variety of building and site constraints.

Good disaster management practices will typically give schools a response time long enough to be able to move students to on-site shelters.

And, good management of a storm shelter is often better when there is 1 location instead of many smaller tornado shelters. For example, it's possible to overcrowd a tornado shelter when there are multiple shelters onsite and it is not clear which shelter has room available, unless all tornado shelters are designed to accommodate the entire population of the campus which would be a significant, redundant cost. Furthermore, emergency rescue is greatly assisted when there are a fewer number of tornado shelters for people to be rescued from.

An example of how the current provision can create a significant and unnecessary financial impact at a campus: A large, existing community college with 25 buildings throughout an approximately 200 Acre campus. A new building is proposed in the middle of the campus for high school students that want to earn early college credit, making this building a Group E building. The 25 existing buildings have assembly spaces that are considered an accessory to the Group E occupancy because they can be used by the high school students. The campus wants to build a large addition to the early college learning building for high school students, one that is large enough to accommodate the population required by Section 423.5.1. However, there are indoor assembly spaces that are spread throughout the entire campus, much greater than 1,000 feet, requiring that multiple new tornado shelters be constructed for the assembly spaces that are accessory to a Group E occupancy. Tornado Shelters are not required for college campus classrooms, which are Group B. It is an unnecessary burden to require a community college campus construct multiple tornado shelters throughout their campuses when there are emergency planning alternatives. The community college can manage the high school student population by directing those students to their designated shelters at early signs of an approaching storm, even though some students may be in a building farther than 1,000 feet from the shelter when a tornado approaches.

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

Removing the requirement for a maximum 1,000 foot travel distance avoids constructing multiple tornado shelters at large campuses, instead of one.

G105-21

IBC: 503.1.4.1

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Revise as follows:

503.1.4.1 Enclosures over occupied roof areas. Elements or structures enclosing the occupied roof areas shall not extend more than 48 inches (1220 mm) above the surface of the occupied roof.

~~Exception:~~ Exceptions:

1. Penthouses constructed in accordance with Section 1511.2 and towers, domes, spires and cupolas constructed in accordance with Section 1511.5.
- 2 Required guards shall be permitted to be greater than 48 inches (1219 mm) above the surface of the occupied roof where the roof deck is located more than 75 feet (22 860 mm) above the level of fire department vehicle access.

Reason Statement: The limit on the guard height was based on fire department access to the roof. Once the roof deck is higher than fire ladder access, this is no longer justification for this limitation. There has been concerns that higher guards are needed on higher roofs to prevent people from jumping off the roof deck and/or to allow for wind breaks to limit items blowing off the roof deck and falling on people below.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This allows additional design options for guards around roof decks.

G106-21 Part I

PART I - IBC: 503.1.4.2 (New)

PART II - IBC: 1015.2 (IFC[BE] 1015.2)

Proponents: Lee Kranz, City of Bellevue, WA, representing Myself (lkranz@bellevuewa.gov)

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY THE GENERAL CODE COMMITTEE. PART II WILL BE HEARD BY THE MEANS OF EGRESS COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Building Code

503.1.4 Occupied roofs. A roof level or portion thereof shall be permitted to be used as an occupied roof provided the occupancy of the roof is an occupancy that is permitted by Table 504.4 for the *story* immediately below the roof. The area of the occupied roofs shall not be included in the *building area* as regulated by Section 506. An occupied roof shall not be included in the *building height* or number of *stories* as regulated by Section 504, provided that the *penthouses* and other enclosed *rooftop structures* comply with Section 1511.

Exceptions:

1. The occupancy located on an occupied roof shall not be limited to the occupancies allowed on the *story* immediately below the roof where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2 and occupant notification in accordance with Sections 907.5.2.1 and 907.5.2.3 is provided in the area of the occupied roof. *Emergency voice/alarm communication* system notification per Section 907.5.2.2 shall also be provided in the area of the occupied roof where such system is required elsewhere in the building.
2. Assembly occupancies shall be permitted on roofs of open parking spaces of Type I or Type II construction, in accordance with the exception to Section 903.2.1.6.

503.1.4.1 Enclosures over occupied roof areas. Elements or structures enclosing the occupied roof areas shall not extend more than 48 inches (1220 mm) above the surface of the occupied roof.

Exception: *Penthouses* constructed in accordance with Section 1511.2 and towers, domes, spires and cupolas constructed in accordance with Section 1511.5.

Add new text as follows:

503.1.4.2 Guards. Occupied roofs shall have guards in accordance with Section 1015.2.

G106-21 Part II

PART II - IBC: 1015.2 (IFC[BE] 1015.2)

Proponents: Lee Kranz, City of Bellevue, WA, representing Myself (lkranz@bellevuewa.gov)

2021 International Building Code

Revise as follows:

1015.2 Where required. *Guards* shall be located along open-sided walking surfaces, including *mezzanines*, equipment platforms, *aisles*, *stairs*, *ramps* and landings that are located more than 30 inches (762 mm) measured vertically to the floor or grade below at any point within 36 inches (914 mm) horizontally to the edge of the open side. *Guards shall be provided at the perimeter of the occupied portions of an occupied roof.* *Guards* shall be adequate in strength and attachment in accordance with Section 1607.9.

Exceptions: *Guards* are not required for the following locations:

1. On the loading side of loading docks or piers.
2. On the audience side of *stages* and raised *platforms*, including *stairs* leading up to the *stage* and raised *platforms*.
3. On raised *stage* and *platform* floor areas, such as runways, *ramps* and side *stages* used for entertainment or presentations.
4. At vertical openings in the performance area of *stages* and *platforms*.
5. At elevated walking surfaces appurtenant to *stages* and *platforms* for access to and utilization of special lighting or equipment.
6. Along vehicle service pits not accessible to the public.
7. In assembly seating areas at cross *aisles* in accordance with Section 1030.17.2.
8. On the loading side of station platforms on fixed guideway transit or passenger rail systems.

Reason Statement: This code change is needed to protect children. There are many cases where the design of an occupied roof includes only a portion of the entire roof area. The occupied portions of the roof are typically elevated 18" or less above the adjacent unoccupied areas of the roof, therefore no guard is currently required per Section 1015.2. This issue is regularly debated on building official chat lines and other forums due to the lack of regulatory authority to require the guard in this design scenario. Even the idea of a small child falling to their death because they bolted from a parent or guardian to look over the edge of a roof is unthinkable. Occupied roofs are relatively new in the IBC and we're discovering issues related to their design on a regular basis. This code change will eliminate or drastically reduce the potential for kids, or even adults who may be inebriated, from falling over the edge of a roof which even if the occupied portion of the roof is some distance away from the roof edge. Adding a new Section 503.1.4.2 Guards, will insure that the reader will go to Section 1015.2 to see that guards are required. Examples of this can be found in Sections 406.4.1, 505.3.3 and 1029.17.

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

The cost to construct some occupied roofs where the edge of the occupied portion of the occupied roof is inboard of the roof edge will go up due to the installation of guards.

G125-21

IBC: 508.5, 508.5.6

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Revise as follows:

508.5 Live/work units. A *live/work unit* shall comply with Sections ~~508.5~~ 508.5.1 through 508.5.11. Live/work units complying with the requirements of Section 508.5.1 through 508.5.11 for the non-residential portion of the unit and that are within the scope of the *International Residential Code*, shall be permitted to be constructed in accordance with this code or the *International Residential Code*.

Exception: *Dwelling or sleeping units* that include an office that is less than 10 percent of the area of the *dwelling unit* ~~are~~ shall be permitted to be classified as *dwelling units* with accessory occupancies in accordance with Section 508.2.

508.5.1 Limitations. The following shall apply to live/work areas:

1. The *live/work unit* is permitted to be not greater than 3,000 square feet (279 m²) in area.
2. The nonresidential area is permitted to be not more than 50 percent of the area of each *live/work unit*.
3. The nonresidential area function shall be limited to the first or main floor only of the *live/work unit*.
4. Not more than five nonresidential workers or employees are allowed to occupy the nonresidential area at any one time.

508.5.2 Occupancies. *Live/work units* shall be classified as a Group R-2 occupancy. Separation requirements found in Sections 420 and 508 shall not apply within the *live/work unit* where the *live/work unit* is in compliance with Section 508.5. Nonresidential uses that would otherwise be classified as either a Group H or S occupancy shall not be permitted in a *live/work unit*.

Exception: Storage shall be permitted in the *live/work unit* provided that the aggregate area of storage in the nonresidential portion of the *live/work unit* shall be limited to 10 percent of the space dedicated to nonresidential activities.

508.5.3 Means of egress. Except as modified by this section, the *means of egress* components for a *live/work unit* shall be designed in accordance with Chapter 10 for the function served.

508.5.4 Egress capacity. The egress capacity for each element of the *live/work unit* shall be based on the *occupant load* for the function served in accordance with Table 1004.5.

508.5.5 Spiral stairways. *Spiral stairways* that conform to the requirements of Section 1011.10 shall be permitted.

Revise as follows:

508.5.6 Vertical openings. Floor openings between floor levels of a *live/work unit* ~~are~~ shall be permitted without enclosure.

[F] 508.5.7 Fire protection. The *live/work unit* shall be provided with a monitored *fire alarm* system where required by Section 907.2.9 and an *automatic sprinkler system* in accordance with Section 903.2.8.

508.5.8 Structural. Floors within a *live/work unit* shall be designed for the *live loads* in Table 1607.1, based on the function within the space.

508.5.9 Accessibility. *Accessibility* shall be designed in accordance with Chapter 11 for the function served.

508.5.10 Ventilation. The applicable *ventilation* requirements of the *International Mechanical Code* shall apply to each area within the *live/work unit* for the function within that space.

508.5.11 Plumbing facilities. The nonresidential area of the *live/work unit* shall be provided with minimum plumbing facilities as specified by Chapter 29, based on the function of the nonresidential area. Where the nonresidential area of the *live/work unit* is required to be accessible by Section 1108.6.2.1, the plumbing fixtures specified by Chapter 29 shall be accessible.

Staff Note: G125-21 and G126-21 addresses requirements in a different or contradicting manner. The committee is urged to make their intentions clear with their actions on these proposals.

Reason Statement: The intent of the proposal is to coordinate the IRC and IBC scoping. IRC Section 101.2 Exception 1 allows for live/work units to be constructed under the IRC. However, the IBC does not state this option in IBC Section 101.2 or this section.

During the discussions, there were concerns that the current requirements for complying with the IRC and the IBC could be a conflict for several of the items listed, such as means of egress, fire protection, structural and accessibility. The addition of 'for the non-residential portion of the unit' should help clarify that the means of egress, fire protection, structural loading and plumbing facilities for the business/mercantile portion of the unit needs to look at the IBC for requirements.

This is one of a group of proposals intended to coordinate the scoping items in IBC Section 101.2 and IRC 101.2. While the proposals work together, then also work separately. The proposal for coordination will be in Group B. This proposal is submitted by the ICC Building Code Action Committee (BCAC).

BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This is a coordination of scoping requirements and references in the IBC and IRC, not a change to construction requirements.

G126-21 Part I

PART I – IBC: 508.5

PART II – IBC[F] 508.5.7

Proponents: Jeffrey Shapiro, representing Self (jeff.shapiro@intlcodeconsultants.com)

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY THE GENERAL CODE COMMITTEE. PART II WILL BE HEARD BY THE FIRE CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Building Code

Revise as follows:

508.5 Live/work units. In addition to other requirements of this code ~~A live/work unit~~ units shall comply with Sections 508.5 through 508.5.11.

Exception Exceptions:

1. 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.
2. Live/work units complying with the *International Residential Code* shall not be required to comply with requirements of this code, other than requirements in Section 508.5.

Staff Note: G125-21 and G126-21 addresses requirements in a different or contradicting manner. The committee is urged to make their intentions clear with their actions on these proposals.

G126-21 Part II

PART II – IBC[F] 508.5.7

Proponents: Jeffrey Shapiro, representing Self (jeff.shapiro@intlcodeconsultants.com)

2021 International Building Code

Revise as follows:

[F] 508.5.7 Fire protection. ~~The~~

~~live Live/work unit units constructed in accordance with this code shall comply with be provided with a monitored fire alarm system where required by Section 907.2.9 and be provided with all of the following:~~

1. ~~An automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 903.2.8.~~
2. ~~Smoke alarms in accordance with Section 907.2.11.~~
3. ~~Where required by Section 907.2.9.1, a manual fire alarm system.~~

~~Live/work units constructed in accordance with the International Residential Code shall be provided with an automatic sprinkler system and smoke alarms. The automatic sprinkler system shall comply with International Residential Code Section P2904, and smoke alarms shall comply with International Residential Code Section 314.~~

Staff Note: G125-21 and G126-21 addresses requirements in a different or contradicting manner. The committee is urged to make their intentions clear with their actions on these proposals.

Reason Statement: Currently, some live/work units are permitted to be constructed under the IRC, per the IRC scope, but the IRC scope references back to IBC Section 508.5 for additional specific requirements. So presumably, IRC live/work units are constructed to the IRC, except as modified by IBC Section 508.5. On the other hand, IBC live/work units are constructed to the IBC, including Section 508.5. This proposal more clearly states that approach.

In addition, the fire protection requirements have been edited to clarify the allowance to use fire protection requirements in the IRC for IRC live/work units. It does not appear that the intent of membership in establishing live/work provisions was requiring IRC live/work units to comply with IBC Group R2 fire protection requirements. Plus, the IBC fire protection requirements have been clarified/improved by directly referencing the two applicable sprinkler standards for Group R2 vs. sending the user to another code section to receive the references, and the requirement for smoke alarms has been added for completeness.

Regarding fire alarms for live/work units under the IBC, there are not and never have been any special live/work requirements. Instead, the requirements are based on the general Group R2 occupancy triggers and exceptions found in Section 907.2.9.1, which often won't require a fire alarm system for live/work units based on the exceptions. The reference to "monitored" systems has been dropped, as monitoring requirements will be determined by Section 907.

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

By clearly conveying that IRC live/work units do not have to meet IBC fire protection requirements, the cost of construction for live/work units may be reduced.

G127-21

IBC: 508.5.1

Proponents: Hoyt Jeter, City of Tacoma/ Planning and Development, representing WABO TCD (hjeter@cityoftacoma.org)

2021 International Building Code

Revise as follows:

508.5.1 Limitations. The following shall apply to live/work areas:

1. The *live/work unit* is permitted to be not greater than 3,000 square feet (279 m²) in area.
2. The nonresidential area is permitted to be not more than 50 percent of the area of each *live/work unit*.
3. The nonresidential area function shall be limited to the first or main floor only of the *live/work unit*.
4. ~~Not more than five nonresidential workers or employees are allowed to occupy the nonresidential area at any one time.~~

Reason Statement: 1. Item number 4 is un-enforceable. When permits are issued, how do you limit the number of employees? The other exceptions will meet the intent allowed per the code.

2. The maximum area of the non-residential area is already limited to 1500 square feet, so that the occupant load will be limited by the floor area.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is just to make the code consistent for un-enforceable language

G129-21

IBC: 302.3(New), SECTION 509, 509.1, 509.2, 509.3, 509.4, 509.4.1, 509.4.1.1, 509.4.2, 509.4.2.1

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Add new text as follows:

302.3 Incidental Uses. Incidental uses shall comply with Section 429.

Revise as follows:

SECTION ~~509-429~~ INCIDENTAL USES.

~~509.1-429.1~~ 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 specified in Table ~~509.1-429.1~~.

Exception: Incidental uses within and serving a *dwelling unit* are not required to comply with this section.

**TABLE 509-1 429.1
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 <i>ambulatory care facilities</i> , laboratories not classified as Group H	1 hour or 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
Electrical installations and transformers	See Sections 110.26 through 110.34 and Sections 450.8 through 450.48 of NFPA 70 for protection and separation requirements.

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.

509-2 429.2 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.

509-3 429.3 Area limitations. Incidental uses shall not occupy more than 10 percent of the *building area* of the *story* in which they are located.

509-4 429.4 Separation and protection. The incidental uses specified in Table 509-1 429.1 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.

509-4-1 429.4.1 Separation. Where Table 509-1 429.1 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.

509-4-1-1 429.4.1.1 Type IV-B and IV-C construction. Where Table 509-1 429.1 specifies a fire-resistance-rated separation, *mass timber* elements serving as *fire barriers* or *horizontal assemblies* in Type IV-B or IV-C construction shall be separated from the interior of the incidental use with an *approved* thermal barrier consisting of *gypsum board* that is not less than 1/2 inch (12.7 mm) in thickness or a material that is tested in accordance with and meets the acceptance criteria of both the Temperature Transmission Fire Test and the Integrity Fire Test of NFPA 275.

509-4-2 429.4.2 Protection. Where Table 509-1 429.1 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 716.2.6.6. 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~~ 429.4.2.1 Protection limitation. Where an *automatic sprinkler system* is provided in accordance with Table ~~509.1~~ 429.1, only the space occupied by the incidental use need be equipped with such a system.

Reason Statement: When users of the code are looking for specific requirements, they intuitively look to the chapter where the nature of the provision they are looking for is most closely related. This is why moving Section 509 to Chapter 4 will lead to better understanding and application of the code. The provisions of Chapter 5 “control the height and area of structures” whereas Chapter 4 contains “special uses”. “Incidental Uses” are ancillary functions associated with a greater level of risk to that occupancy. Therefore Section 509 belongs in Chapter 4.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is a relocation of existing provisions only with no changes.

G130-21

IBC: 510.2, 707.3.11 (New)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org); Michael O'Brian, representing FCAC (fcac@iccsafe.org)

2021 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 the following conditions are met:

1. The buildings are separated with a *horizontal assembly* having a *fire-resistance rating* of not less than 3 hours. Where ~~vertical offsets are provided as part of a horizontal assembly~~ contains vertical offsets, the vertical offset ~~and the structure supporting the vertical offset shall be constructed as a fire barrier in accordance with Section 707 and~~ shall have a *fire-resistance rating* of not less than 3 hours.
2. The building below, including the *horizontal assembly* ~~and any associated vertical offsets~~, 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.

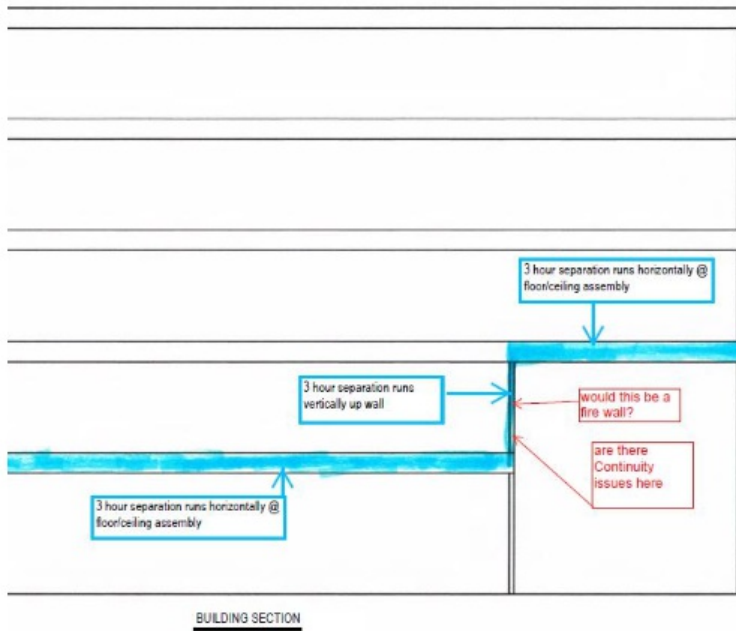
Exception: Where the enclosure walls below the *horizontal assembly* have not less than a 3-hour *fire-resistance rating* with opening protectives in accordance with Section 716, the enclosure walls extending above the *horizontal assembly* shall be permitted to have a 1-hour *fire-resistance rating*,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

1. The building above the *horizontal assembly* is not required to be of Type I construction.
 2. The enclosure connects fewer than four stories.
 3. The enclosure opening protectives above the *horizontal assembly* have a *fire protection rating* of not less than 1 hour.
4. *Interior exit stairways* located within the Type IA building are permitted to be of combustible materials where the following requirements are met:
 - 4.1. The building above the Type IA building is of Type III, IV, or V construction.
 - 4.2. The *stairway* located in the Type IA building is enclosed by 3-hour fire-resistance-rated construction with opening protectives in accordance with Section 716.
 5. 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.
 6. 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.
 7. 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:

707.3.11 Horizontal separation offsets. The fire-resistance rating of a fire barrier serving as the vertical offset in a horizontal building separation shall comply with Section 510.2.

Reason Statement: The code provides for the allowance of vertical offsets in horizontal building separations, but does not clarify how the separation must be constructed other than to also be 3-hour rated. This code proposal fills in the gap so that users know what type of assembly must be used, fire barriers, and subsequently how to address openings, penetrations, joints, continuity, etc. This also clarifies that the vertical offset must also be Type 1A construction just like the horizontal assembly does.



This proposal is submitted by the ICC Fire Code Action Committee (FCAC) and the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

The FCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes with regard to fire and life safety in new and existing buildings and facilities as well as the protection of life and property in wildland urban interface areas. In 2020 and 2021 the Fire-CAC held multiple virtual meetings that were open to any interested party. In addition, there were numerous virtual specific working group meetings that were also open to any interested parties, to develop, discuss and debate the proposed changes. Related documentation and reports are posted on the FCAC website at: FCAC.

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

This proposal only provides clear direction as to how the vertical offset must be constructed, in the manner that it likely commonly is.

G131-21

IBC: 510.2

Proponents: Dennis Richardson, representing self (dennisrichardsonpe@yahoo.com)

2021 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 the following conditions are met:

1. The buildings are separated with a *horizontal assembly* having a *fire-resistance rating* of not less than 3 hours. Where vertical offsets are provided as part of a *horizontal assembly*, the vertical offset and the structure supporting the vertical offset shall have a *fire-resistance rating* of not less than 3 hours.
2. The building below, including the *horizontal assembly*, complies with one of the following:
 - 2.1. The building below, including the *horizontal assembly*, is of Type IA construction.
 - 2.2. The building below, including the *horizontal assembly* is of Type IVA construction, with *noncombustible protection* contributing the time required by Section 602.4.1.2.1 for interior protection of mass timber, but not less than 180 minutes.
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.

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, the enclosure walls extending above the *horizontal assembly* shall be permitted to have a 1-hour *fire-resistance rating*, provided that the following conditions are met:

1. The building above the *horizontal assembly* is not required to be of Type I construction.
 2. The enclosure connects fewer than four stories.
 3. The enclosure opening protectives above the *horizontal assembly* have a *fire protection rating* of not less than 1 hour.
4. *Interior exit stairways* located within the Type IA building are permitted to be of combustible materials where the following requirements are met:
 - 4.1. The building above the Type IA building is of Type III, IV, or V construction.
 - 4.2. The *stairway* located in the Type IA building is enclosed by 3-hour fire-resistance-rated construction with opening protectives in accordance with Section 716.
 5. 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 than 300, or Group B, M, R or S occupancies.
 6. 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.
 7. 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 Statement: Podium type buildings of 3-hour noncombustible Type IA construction are a popular method of construction to support one or more residential buildings on top of the 3-hour noncombustible podium structure. This method of construction is important as it provides a considerable amount of low-cost housing in urban cities. With the advent of Type IVA construction in the 2021 IBC there is now a combustible type of construction that provides fire performance equal to or greater to Type IA from a fire resistance and content burnout standpoint. According to 2021 IBC Section 722.7.1 at least 2/3rds of the fire resistance rating in Type IVA mass timber construction must come from noncombustible protection applied on the interior of the structure. Assuming the sprinkler system fails to control a content fire, and with most fuel load and ventilation scenarios, the content burns out long before the mass timber building contributes significant fuel to the fire. Having 2/3 of the fire resistance provided by noncombustible protection was demonstrated effective to allow burn out for typical residential fire loads during tests performed at the ATF labs by the ICC Ad Hoc Committee on Tall Wood Buildings.

Since a podium type structure supporting other structures adds complexity to fire-fighting rescue and suppression operations and also may have occupancy groups with fuel loads greater than the tested residential fuel loads, by providing 100% contribution of the minimum required fire resistance rating on the interior of a type IVA podium from noncombustible protection, it is clear the 3 hour podium proposed by this code change will perform better than what is currently provided in Section 510.2 with 3 hour Type IA noncombustible construction.

The actual fire resistance rating of the podium will be greater than 3 hours because the total fire resistance rating of mass timber is equal to the sum of the contribution from noncombustible protection added to the contribution from the mass timber. It is also clear the mass timber building structure would not become a significant factor contributing to the fuel load until after a code allowed 3 hour Type IVA podium would theoretically be allowed to fail. Some may say requiring this 3 hour (100%) of required fire resistant rating using noncombustible protection is too conservative in this proposal. This level of performance has been shown to be readily achievable utilizing testing described in 2021 IBC Section 703.6 of noncombustible mineral wool board, gypsum or a combination of the two materials over mass timber.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This code change creates another option to construct the same building with another material and does not add additional cost.

G132-21

IBC: 510.2

Proponents: Sarah Rice, The Preview Group, Inc., representing The Preview Group (srice@preview-group.com)

2021 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 the following conditions are met:

1. The buildings are separated with a *horizontal assembly* having a *fire-resistance rating* of not less than 3 hours. Where vertical offsets are provided as part of a *horizontal assembly*, the vertical offset and the structure supporting the vertical offset shall have a *fire-resistance rating* of not less than 3 hours.
2. The building below, including the *horizontal assembly*, is of Type IA construction.
3. *Shaft, stairway, ramp* and escalator enclosures through the *horizontal assembly* shall have not less than a 2-hour *fire-resistance rating* with opening protectives in accordance with Section 716.

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, the enclosure walls extending above the *horizontal assembly* shall be permitted to have a 1-hour *fire-resistance rating*, provided that the following conditions are met:

1. The building above the *horizontal assembly* is not required to be of Type I construction.
 2. The enclosure connects fewer than four stories.
 3. The enclosure opening protectives above the *horizontal assembly* have a *fire protection rating* of not less than 1 hour.
4. *Interior exit stairways* located within the Type IA building are permitted to be of combustible materials where the following requirements are met:
- 4.1. The building above the Type IA building is of Type III, IV, or V construction.
 - 4.2. The *stairway* located in the Type IA building is enclosed by 3-hour fire-resistance-rated construction with opening protectives in accordance with Section 716.
5. 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 than 300, or~~ Group B, M, R or S occupancies.
6. 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.
7. 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 Statement: The IBC currently limits a building that is over what is commonly referred to as a "podium building" (IBC Section 510.2, Item 5) to having "multiple Group A occupancy uses, each with an occupant load of

less than 300." This means that no single assembly space is allowed to have an occupant load of 300 persons within a building located above the horizontal assembly - think museum, swimming pool deck or movie theater. or a health club. Again, I want you remember that this is a limit to ALL Group A occupancies, not just large entertainment venues - think outdoor sculpture museums (Group A-3). And in this day of COVID-19, think outdoor restaurants (Group A-2) or even outdoor places of religious worship (Group A-5). The current language in the code would not allow these to occur over a podium building. This limitation really curtails the construction of buildings that are placed on a podium building on an inner city site.

And what just does "shall be permitted to have multiple Group A occupancy uses, each with an occupant load of 300" mean? Does each Group A space with 299 occupants have to be separated from an adjacent Group A space with 299 occupants? And if so, does the separation need to be fire rated? But what if each of these spaces with 299 persons discharge out into a foyer (that has an occupant load of 299) and which leads to the exterior? Is that acceptable? But then everyone is discharged out onto the horizontal assembly to open air - just like a Group A-5 occupancy - but oops, a Group A-5 occupancy cannot have more than 300 persons to be located above the horizontal assembly.

This proposal seeks to eliminate the Group A 299 occupant load limitation in its entirety and let the overall provisions found in the IBC dictate the design of the Group A building or building with a Group A occupancy constructed over the horizontal assembly.

While this limitation, and all what is currently in IBC 510 has been in the IBC since the 2000 IBC, the real roots of the entire section are in one of the

legacy codes - the Uniform Building Code (UBC) Section 311.2.2.1

"311.2.2.1 Group S, Division 3 with Group A, Division 3; Group B; Group M or R, Division 1 Occupancy above.

Other provisions of this code notwithstanding, a basement or first story of a building may be considered as a separate and distinct building for the purpose of area limitations, limitation of number of stories and type of construction, when all of the following conditions are met:"

And specifically Item 2 in UBC Section 311.2.2.1:

"2. The building above the three-hour occupancy separation contains only Group A, Division 3; Group B; or Group M or R, Division 1 Occupancies."

In the 1997 UBC Group A was divided into 5 sub classifications:

- Division 1 - Any assembly building or portion of a building with a legitimate stage and an occupant load of 1,000 or more
- Division 2 - Any assembly building or portion of a building with an occupant load of less than 1,000 and a legitimate stage.
- Division 2.1 - Any assembly building or portion of a building with an occupant load of 300 or more without a legitimate stage, including such buildings used for educational purposes and not classified as a Group E or Group B, Division 2 Occupancy.
- Division 3 - Any assembly building or portion of a building with an occupant load of less than 300 without a legitimate stage, including such buildings used for educational purposes and not classified as a Group E or Group B, Division 2 Occupancies
- Division 4 - Stadiums, reviewing stands and amusement park structures not included within other Group A occupancies.

The thing is, the UBC occupancy classifications do correlate in any way to the Group A occupancy classifications in 2021 IBC nor in how the provisions are applied. When the applicable provisions of the IBC are applied to a building with an assembly space having an occupant load of 300 or more, it is unjustified and inconsistent to prohibit that space from being located on top of podium building.

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

If accepted this code change will reduce the cost of construction as buildings above a podium building will have a broader choice of types of construction.

G134-21

IBC: TABLE 601

Proponents: John-Jozef Proczka, representing self (john-jozef.proczka@phoenix.gov)

2021 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	A	B	C	HT	A	B
Primary structural frame ^f (see Section 202)	3 ^{a, b}	2 ^{a, b, c}	1 ^{b, c}	0 ^c	1 ^{b, c}	0	3 ^a	2 ^a	2 ^a	HT	1 ^{b, c}	0
Bearing walls												
Exterior ^{e, f}	3	2	1	0	2	2	3	2	2	2	1	0
Interior	3 ^a	2 ^a	1	0	1	0	3	2	2	1/HT ^g	1	0
Nonbearing walls and partitions Exterior	See Table 705.5											
Nonbearing walls and partitions Interior ^d	0	0	0	0	0	0	0	0	0	See Section 2304.11.2	0	0
Floor construction and associated secondary structural members (see Section 202)	2	2	1	0	1	0	2	2	2	HT	1	0
Roof construction and associated secondary structural members (see Section 202) Roofs other than occupiable roofs	1 ^{1/2, b}	1 ^{b, c}	1 ^{b, c}	0 ^c	1 ^{b, c}	0	1 ^{1/2}	1	1	HT	1 ^{b, c}	0
<u>Occupiable Roofs</u>	<u>2</u>	<u>2</u>	<u>1^c</u>	<u>0^c</u>	<u>1^c</u>	<u>0</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>HT</u>	<u>1^c</u>	<u>0</u>

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~~an unoccupiable roof only.
- b. Except in Group F-1, H, M and S-1 occupancies and unoccupiable roofs, fire protection of structural members in roof construction shall not be required, including protection of primary structural frame members, roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.
- c. In all occupancies, heavy timber complying with Section 2304.11 shall be allowed for roof construction, including primary structural frame members, 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 705.5).
- f. Not less than the fire-resistance rating as referenced in Section 704.10.
- g. Heavy timber bearing walls supporting more than two floors or more than a floor and a roof shall have a *fire resistance* rating of not less than 1 hour.

Reason Statement: Roofs of buildings or portions thereof designed as occupiable roofs have occupant loads consistent with an occupiable space use, where a significant number of people can access the roof. As such, the risk of a fire occurring on the story below and compromising the roof structure is much more serious than the normal condition where the roof is just resisting the weight of the roof assembly including: insulation, ductwork, piping, roof coverings, rooftop equipment, environmental loads, and the weight of maintenance personnel.

The use of occupiable roofs has expanded in recent times without adequate consideration for the fire protection of these spaces. The consequences of structural failure of occupiable roofs are no less dire than those associated with floors, as such the values for occupiable roofs mirror those for floors. In addition to supporting much higher occupant loads, occupiable roofs frequently support heavy items not seen on other roofs such as raised decks, pools, hot tubs, built-in furnishings, and barbeques. To address this potential life safety issue, it is proposed to split the fire ratings for roof construction and associated secondary members into two rows, one for occupiable roofs and one for all other roofs. The fire ratings for roof construction supporting an occupied roof are made the same as those for floor construction. Consistent with that mirroring, footnotes "a" and "b" are not applied to any of the ratings specified for an occupiable roof.

Altering the occupancy classification of an existing building's roof to an occupiable roof is a major reuse of space, and as such, coordination with the IEBC should occur.

This proposal is intended to protect the structure supporting the occupiable roof during a fire event.

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

The code change will increase the cost of construction for buildings with an occupiable roof. Additionally, it will increase the cost of construction for roofs over a tall story that previously would have been allowed to have less-protected or unprotected roof construction.

G135-21

IBC: TABLE 601

Proponents: Bill McHugh, The McHugh Company, representing National Fireproofing Contractors Association (bill@mc-hugh.us)

2021 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	A	B	C	HT	A	B
Primary structural frame ^{d,g} (see Section 202)	3 ^{a,b,c}	2 ^{a,b,c}	1 ^{b,c,d}	0 ^e	1 ^{b,c,d}	0	3 ^a	2 ^a	2 ^a	HT	1 ^{b,c,d}	0
Bearing walls	See Table 705.5											
Exterior ^{e,f,g}	3	2	1	0	2	2	3	2	2	2	1	0
Interior	3 ^a	2 ^a	1	0	1	0	3	2	2	1/HT ^{g,h}	1	0
Nonbearing walls and partitions Exterior	See Table 705.5											
Nonbearing walls and partitions Interior ^{d,e}	0	0	0	0	0	0	0	0	0	See Section 2304.11.2	0	0
Floor construction and associated secondary structural members (see Section 202)	2	2	1	0	1	0	2	2	2	HT	1	0
Roof construction and associated secondary structural members (see Section 202)	1 ^{1/2} _d ^b	1 ^{b,c,d}	1 ^{b,c,d}	0 ^e	1 ^{b,c,d}	0	1 ^{1/2} _b	1 ^b	1 ^b	HT	1 ^{b,c,d}	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. Where a roof is an occupiable space, the fire-resistance rating of the roof assembly shall be equal to or greater than the floor below.
- b.c. Except in Group F-1, H, M and S-1 occupancies and where the roof is an occupiable space, fire protection of structural members in roof construction shall not be required, including protection of primary structural frame members, roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.
- c.d. In all occupancies, heavy timber complying with Section 2304.11 shall be allowed for roof construction, including primary structural frame members, where a 1-hour or less *fire-resistance rating is required*.
- d.e. Not less than the fire-resistance rating required by other sections of this code.
- e.f. Not less than the fire-resistance rating based on fire separation distance (see Table 705.5).
- f.g. Not less than the fire-resistance rating as referenced in Section 704.10.
- g.h. Heavy timber bearing walls supporting more than two floors or more than a floor and a roof shall have a *fire resistance* rating of not less than 1 hour.

Reason Statement: The purpose of this code proposal is to bring clear guidance to code users that the complete roof assembly is to be fire-resistance rated and not just the area under the occupiable space. This code proposal recognizes that the size of the occupied area can change after certificate of occupancy is granted. Providing the same degree of fire-resistance for the complete roof assembly gives occupants the same protection as if they were on the floor below. We know that the number of people located on a floor or roof can vary including things like events, amusement, meetings, or other reasons. This protects those on the rooftop just as if they were standing on a floor below.

Cost Impact: The code change proposal will increase the cost of construction
This code proposal will increase the cost of construction for the roof assembly by about \$1.00 / SF of roof area.

G157-21

IBC: 603.1.2

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Revise as follows:

603.1.2 Piping and plumbing fixtures. The use of combustible piping materials and plumbing fixtures shall be permitted where installed in accordance with the limitations of the *International Mechanical Code* and the *International Plumbing Code*.

Reason Statement: This change is to clarify that plastic plumbing fixtures are acceptable to be installed in Type I and Type II buildings. Fiberglass and acrylic shower compartments are often chosen for these types of buildings to speed construction and lower the cost of construction. Plastic water closets, bathtubs and lavatories are more durable than those of vitreous china and thus are more cost effective in the long run. However, not all jurisdictions are uniformly enforcing the building code because of the misconception that such fixtures are as combustible as common plastic materials. This is not true as the standards for plastic plumbing fixtures require testing for ignitability.

This proposal is submitted by the ICC Building Code Action Committee (BCAC) and developed in cooperation with the PMGCAC.

BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

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

Fiberglass and acrylic shower compartments are much more economical to install because there is a significant installation labor savings over field-constructed tile showers. Other plastic plumbing fixtures generally have a lower cost than their vitreous china counterparts and, being of lighter weight, may provide for some installation labor savings in handling alone.

G158-21

IBC: 1202.1

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Revise as follows:

1202.1 General. Buildings shall be provided with natural ventilation in accordance with Section 1202.5, or mechanical ventilation in accordance with the *International Mechanical Code*. ~~Where the air infiltration rate in a dwelling unit is less than 5 air changes per hour where tested with a blower door at a pressure 0.2 inch w.c. (50 Pa) in accordance with Section R402.4.1.2 of the International Energy Conservation Code—Residential Provisions, the dwelling unit.~~ Dwelling units complying with the air leakage requirements of the *International Energy Conservation Code* or ASHRAE 90.1 shall be ventilated by mechanical means in accordance with Section 403 of the *International Mechanical Code*. Ambulatory care facilities and Group I-2 occupancies shall be ventilated by mechanical means in accordance with Section 407 of the *International Mechanical Code*.

Reason Statement: This proposal is to align the IBC code text with requirements that already exist in the 2021 IMC as a result of M20-18 AS:

401.2 Ventilation required. Every occupied space shall be ventilated by natural means in accordance with Section 402 or by mechanical means in accordance with Section 403. *Dwelling units* complying with the air leakage requirements of the *International Energy Conservation Code* or ASHRAE 90.1 shall be ventilated by mechanical means in accordance with Section 403. Ambulatory care facilities and Group I-2 occupancies shall be ventilated by mechanical means in accordance with Section 407. No requirements are being added or deleted. This is simply a language coordination proposal.

This proposal is a BCAC proposal that was developed with the PMGCAC.

BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

Bibliography: M20-18 AS

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

The requirements already exist in the 2021 codes (2021 IMC). This proposal only makes the language for those requirements in both codes read the same. There are no increased or decreased of material or labor associated with this proposal as the requirements have not changed. Thus there is no impact to the cost of construction.

G177-21

IBC: 3001.2

Proponents: Kevin Brinkman, representing National Elevator Industry, Inc. (klbrinkman@neii.org)

2021 International Building Code

Revise as follows:

3001.2 Emergency elevator communication systems for the deaf, hard of hearing and speech impaired. An emergency elevator two-way communication system shall be provided. ~~The system shall provide that includes both visual~~ visible text and audible communication modes ~~that meet all of the following complying with the requirements in ASME A17.1/CSA B44.~~

- ~~1. When operating in each mode, include a live interactive system that allows back and forth conversation between the elevator occupants and emergency personnel.~~
- ~~2. Is operational when the elevator is operational.~~
- ~~3. Allows elevator occupants to select the text-based or audible mode depending on their communication needs to interact with emergency personnel.~~

Reason Statement: The title was modified because this communication system needs to be useable by all people, not just the deaf, hard of hearing and speech impaired.

Added "elevator" to clarify that this applies to the communication system in the elevator since the title is not part of the requirement.

Deleted "two-way" for consistency with ASME A17.1/CSA B44 language.

The communication system is part of the elevator system requirements and the technical criteria for the communication system is provided in ASME A17.1/B44 Safety Code for Elevators and Escalators. As part of the elevator system, the communication system is inspected by elevator inspectors; therefore, the requirements belong in the elevator code. The requirements as currently written in the IBC are no longer needed because the elevator code contains significantly more detailed requirements to make the system accessible to the deaf, hard of hearing, and speech impaired. This proposal retains the base requirement for the system in the IBC but references the technical requirements in ASME A17.1-2019/CSA B44:19 elevator code which is referenced in IBC Chapter 35. The requirements in ASME A17.1-2019/CSA B44:19 were developed for consistency with the guidelines in the ADA Title III which is the regulation specifically for effective communication with the deaf, hard of hearing and speech impaired.

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

The proposal will neither increase nor decrease the cost of construction because the requirements in the A17.1-2019/CSA B44:19 code already need to be complied with per Section 3001.3 Referenced Standards.

G178-21

IBC: 3001.2

Proponents: Andrew Cid, BARRIER FREE SOLUTIONS FOR THE DEAF AND HARD OF HEARING, representing BARRIER FREE SOLUTIONS FOR THE DEAF AND HARD OF HEARING

2021 International Building Code

Revise 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 in each elevator car. The system shall provide visible text and audible modes that meet all of the following requirements:

1. When operating in each mode, include a live interactive system that allows back and forth conversation between the elevator occupants and emergency personnel.
2. Is operational when the elevator is operational.
3. Allows elevator occupants to select the text-based or audible mode depending on their communication needs to interact with emergency personnel.

Reason Statement: This proposal is submitted as there is no new standard published, as of this writing, under the ASME A17.1 in support of IBC 2018 Section 3001.2. This code proposal also provides additional direction and clarification for industry. Underlined wording is added text to capture the intent of the proposal. This proposal clarifies as to what type of feature and assistance is required and shall be provided regards to the utilization of a text-based system (consisting of keyboard, visual indicators and button indicators) by an entrapped Deaf or Hard of Hearing passenger(s). I have been working with a dedicated group of industry professionals who have been working hard to develop an A17.1 standard for Section 3001.2. My participation in these ASME efforts for the past 6 years have been exciting and productive in attempting to improve the standard to include criteria for these systems. However, I will continue working to provide assistance to industry, to Fire/Life Safety and First Responders in their jobs in helping others, and to provide access to 50M Deaf & Hard of Hearing citizens. I hope the IBC committee, industry representatives, and the ICC voters, especially the professional First Responders, agree with this proposal. If approved, this will be effective 2024 and the next A17.1 will hopefully be in place by then to support Section 3001.2.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is a clarification of requirements for elevator cars, and is already required.

G179-21

IBC: 3001.2, 3001.3, TABLE 3001.3, 3001.4, 3001.5

Proponents: Kevin Brinkman, representing National Elevator Industry, Inc. (klbrinkman@neii.org)

2021 International Building Code

3001.1 Scope. This chapter governs the design, construction, installation, *alteration* and repair of elevators and conveying systems and their components.

Add new text as follows:

3001.2 Structural Design Considerations. Passenger elevators and escalators exposed to outdoor environments shall comply with Sections 1608, 1609, and 1614.

Revise as follows:

3001.3 ~~3001.5~~ Change in use. A change in use of an elevator from freight to passenger, passenger to freight, or from one freight class to another freight class shall comply with Section 8.7 of ASME A17.1/CSA B44.

3001.4 ~~3001.3~~ 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 the applicable standard specified in Table 3001.4 ~~3001.3~~ and ASCE 24 for construction in *flood hazard areas* established in Section 1612.3.

**TABLE ~~3001.4~~ ~~3001-3~~
ELEVATORS AND CONVEYING SYSTEMS AND COMPONENTS**

TYPE	STANDARD
Automotive lifts	ALI ALCTV
Belt manlifts	ASME A90.1
Conveyors and related equipment	ASME B20.1
Elevators, escalators, dumbwaiters, moving walks, material lifts	ASME A17.1/CSA B44, ASME A17.7/CSA B44.7
Industrial scissor lifts	ANSI MH29.1
Platform lifts, stairway chairlifts, wheelchair lifts	ASME A18.1

~~3001.5~~ ~~3001-4~~ Accessibility. Passenger elevators required to be accessible or to serve as part of an *inaccessible* means of egress shall comply with Sections 1009 and 1110.8.

~~3001.6~~ ~~3001-2~~ Emergency elevator communication systems for the deaf, hard of hearing and speech impaired. An emergency two-way communication system shall be provided. The system shall provide visible text and audible modes that meet all of the following requirements:

1. When operating in each mode, include a live interactive system that allows back and forth conversation between the elevator occupants and emergency personnel.
2. Is operational when the elevator is operational.
3. Allows elevator occupants to select the text-based or audible mode depending on their communication needs to interact with emergency personnel.

Reason Statement: To ensure outdoor elevator and escalator installations address the appropriate design conditions for the environments they may be exposed to. There have been many cases in south Florida where high wind loads were not considered in the design and installation of outdoors escalators and elevators, since it is not currently addressed. Additionally, in other areas, snow and ice loads should be considered. The reorganization of the section is simply to group like items together.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The proposal will not change the cost of construction since it is only intended to call attention to existing requirements.

G180-21

IBC: 713.14, 716.2.6.1, 3002.1, 3002.1.1, 3002.1.2, 3002.2, 3002.6, SECTION 3006, 3006.1, 3006.2, 3006.3

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org); Michael O'Brian, representing FCAC (fcac@iccsafe.org)

2021 International Building Code

SECTION 3002 HOISTWAY ENCLOSURES.

Revise as follows:

3002.1 Hoistway enclosure protection. ~~Elevator, dumbwaiter and other hoistway enclosures shall be shaft enclosures complying with Sections 712 and 713.~~ A hoistway for elevators, dumbwaiters and other vertical access devices shall comply with Sections 712 and 713. Where the hoistway is required to be enclosed it shall be constructed as a shaft enclosure in accordance with Section 713.

3002.1.1 Opening protectives. Openings in fire-resistant rated hoistway enclosures shall be protected as required in Chapter 7.

Exception: The elevator car doors and the associated elevator hoistway enclosure doors at the floor level designated for recall in accordance with Section 3003.2 shall be permitted to remain open during Phase I Emergency Recall Operation.

3002.1.2 Hardware. Hardware on ~~opening protectives elevator hoistway doors~~ shall be of an *approved* type installed as tested, except that *approved* interlocks, mechanical locks and electric contacts, door and gate electric contacts and door-operating mechanisms shall be exempt from the fire test requirements.

3002.2 Number of elevator cars in a hoistway. Where four or more elevator cars serve all or the same portion of a building, the elevators shall be located in not fewer than two separate fire-resistance rated hoistways. Not more than four elevator cars shall be located in any single fire-resistance rated hoistway enclosure.

3002.6 Prohibited doors or other devices. ~~Doors or other devices, other than hoistway doors and the elevator car door and the associated elevator hoistway doors,~~ shall be prohibited at the point of access to an elevator car unless such doors or other devices are readily openable from inside the car side without a key, tool, special knowledge or effort.

SECTION 3006 ELEVATOR LOBBIES AND HOISTWAY ~~OPENING DOOR~~ PROTECTION.

3006.1 General. ~~Elevator hoistway openings and enclosed~~ Enclosed elevator lobbies and elevator hoistway door protection shall be provided in accordance with the following:

1. Where elevator hoistway door opening protection is required by Section 3006.2, such protection shall be provided in accordance with Section 3006.3.
2. Where enclosed elevator lobbies are required for underground buildings, such lobbies shall comply with Section 405.4.3.
3. Where an *area of refuge* is required and an enclosed elevator lobby is provided to serve as an *area of refuge*, the enclosed elevator lobby shall comply with Section ~~4009.6~~ 1009.6.4.
4. Where fire service access elevators are provided, enclosed elevator lobbies shall comply with Section 3007.6.
5. Where occupant evacuation elevators are provided, enclosed elevator lobbies shall comply with Section 3008.6.

3006.2 Elevator hoistway door ~~Hoistway opening~~ protection required. Elevator hoistway ~~door openings~~ doors shall be protected in accordance with Section 3006.3 where an elevator hoistway connects more than three *stories*, is required to be enclosed within a *shaft enclosure* in accordance with Section 712.1.1 and any of the following conditions apply:

1. The building is not protected throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2.
2. The building contains a Group I-1, Condition 2 occupancy.
3. The building contains a Group I-2 occupancy.
4. 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~~ doors are ~~is~~ not required where the elevator serves only *open parking garages* in accordance with Section 406.5.

2. Protection of elevator hoistway ~~door openings doors are~~ is not required at the level(s) of exit discharge, provided that 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~~ Protection of elevator hoistway ~~door openings doors~~ are not required on levels where the elevator hoistway door opens to the exterior.

3006.3 Elevator hoistway door Hoistway opening protection. Where Section 3006.2 requires protection of the elevator hoistway door ~~opening~~, the protection shall be provided by one of the following:

1. An enclosed elevator lobby shall be provided at each floor to separate the elevator hoistway ~~shaft enclosure~~ doors from each floor by *fire partitions* in accordance with Section 708. In addition, doors protecting openings in the elevator lobby enclosure walls shall comply with Section 716.2.2.1 as required for *corridor* walls. Penetrations of the enclosed elevator lobby by ducts and air transfer openings shall be protected as required for *corridors* in accordance with Section 717.5.4.1.
2. An enclosed elevator lobby shall be provided at each floor to separate the elevator hoistway ~~shaft enclosure~~ doors from each floor by *smoke partitions* in accordance with Section 710 where the building is equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2. In addition, doors protecting openings in the *smoke partitions* shall comply with Sections 710.5.2.2, 710.5.2.3 and 716.2.6.1. Penetrations of the enclosed elevator lobby by ducts and air transfer openings shall be protected as required for *corridors* in accordance with Section 717.5.4.1.
3. Additional doors ~~or other devices~~ shall be provided at each elevator hoistway door ~~opening~~ in accordance with Section 3002.6. Such door ~~or other devices~~ shall comply with the smoke and draft control door assembly requirements in Section 716.2.2.1.1 when tested in accordance with UL 1784 without an artificial bottom seal.
4. The elevator hoistway shall be pressurized in accordance with Section 909.21.

713.14 Elevator, dumbwaiter and other hoistways. ~~Elevator, dumbwaiter and other hoistway enclosures shall be constructed in accordance with Sections 712 and~~ A hoistway for elevators, dumbwaiters and other vertical devices shall comply with Section 712. Where the hoistway is required to be enclosed, it shall be constructed as a shaft enclosure in accordance with Section 713, and Chapter 30.

716.2.6.1 Door closing. *Fire doors* shall be latching and self- or automatic-closing in accordance with this section.

Exceptions:

1. *Fire doors* located in common walls separating *sleeping units* in Group R-1 shall be permitted without automatic- or *self-closing* devices.
2. The elevator car doors and the associated ~~elevator hoistway enclosure~~ doors at the floor level designated for recall in accordance with Section 3003.2 shall be permitted to remain open during Phase I emergency recall operation.

Reason Statement: The intent of this proposal is consistent terminology for elevator protection. The current text is very inconsistent. This is not intended to have any technical changes.

The elevator industry considers an elevator hoistway the vertical movement of that device, whether it be in a rated enclosure, in non-rated enclosure, or not enclosed at all. The photos are examples of hoistways that are the non-rated enclosure and the open hoistway.



Example of elevator hoistways that are not in rated enclosures.

The intent of this proposal is consistent terminology for elevator protection. The current text is very inconsistent. This is not intended to have any technical changes. The elevator industry considers an elevator hoistway the vertical movement of that device, whether it be in a rated enclosure, in non-rated enclosure, or not enclosed at all. The photos are examples of hoistways that are the non-rated enclosure and the open hoistway.



Examples of doors or other devices in front of associated elevator entrance doors – see Section 3002.6 and 3006.3 Item 3

This proposal is submitted by the ICC Building Code Action Committee (BCAC) in cooperation with the ICC Fire Code Action Committee (FCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at [BCAC](http://BCAC.org).

The FCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes with regard to fire and life safety in new and existing buildings and facilities as well as the protection of life and property in wildland urban interface areas. In 2020 and 2021 the Fire-CAC held multiple virtual meetings that were open to any interested party. In addition, there were numerous virtual specific working group meetings that were also open to any interested parties, to develop, discuss and debate the proposed changes. Related documentation and reports are posted on the FCAC website at: [FCAC](http://FCAC.org).

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

This is a clarification of the terminology for elevator hoistways, and shaft protection and the associated elevator doors and has no changes to the construction.

G181-21 Part I

PART I - IBC: 3005.2

PART II - IFC: 604.3.4; IBC:[F] 3003.1.4

Proponents: Kevin Brinkman, representing National Elevator Industry, Inc. (klbrinkman@neii.org)

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY THE GENERAL CODE COMMITTEE. PART II WILL BE HEARD BY THE FIRE CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Building Code

SECTION 3005 MACHINE ROOMS.

Revise as follows:

3005.2 ~~Venting~~ Environment. Elevator machine rooms, machinery spaces that contain the driving machine, and control rooms or spaces that contain the operation or motion controller for elevator operation shall be provided with a natural or mechanical means ~~an independent ventilation or air conditioning system to protect against the overheating of the electrical equipment. The system shall be capable of maintaining temperatures and humidity~~ within the range established for the elevator equipment as provided by the manufacturer.

G181-21 Part II

IFC: 604.3.4; IBC:[F] 3003.1.4

Proponents: Kevin Brinkman, representing National Elevator Industry, Inc. (klbrinkman@neii.org)

2021 International Fire Code

Revise as follows:

604.3.4 ~~Machine room ventilation~~ Environment. Where standby power is connected to elevators and an environmental control means is provided per Section 3055.2, the ~~machine room ventilation or air conditioning~~ environmental control means shall be connected to the standby power source.

2021 International Building Code

SECTION 3003 EMERGENCY OPERATIONS.

Revise as follows:

[F] 3003.1.4 ~~Venting~~ Environment. Where standby power is connected to elevators, and an environmental control means is provided per Section 3005.2, the ~~machine room ventilation or air conditioning~~ environmental control means shall be connected to the standby power source.

Reason Statement: Changed the titles of 3003.1.4 and 3005.2 to use a title consistent with 902.1.3. Clarification of the title to Section 3005 to reflect the content of the section. Modified the language in 3005.2 to reflect and align with the language used in ASME A17.1/CSA B44. Made changes in 3003.1.4 to correlate with the changes to 3005.2. There are cases, where the normal air exchange between the equipment location and building environment will be adequate to maintain the temperature and humidity within the specified range. In other cases, mechanical means would be required to maintain the specified range. The specified range is determined by the elevator equipment manufacturer. See also corresponding proposal for IFC 604.3.4.

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

The proposal will not change the cost of construction since the changes are better aligning the language and requirements between the IBC and the elevator codes.

G182-21

IBC: 1020.2.1 (IFC[BE] 1020.2.1), 3006.2, 3006.2.1

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Revise as follows:

3006.2 Hoistway opening protection Elevator hoistway door required. Elevator hoistway ~~doors~~ ~~door openings~~ shall be protected in accordance with Section 3006.3 where an elevator hoistway connects more than three *stories*, is required to be enclosed within a *shaft enclosure* in accordance with Section 712.1.1 and any of the following conditions apply:

1. The building is not protected throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2.
2. The building contains a Group I-1, Condition 2 occupancy.
3. The building contains a Group I-2 occupancy.
4. 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.
6. The elevator hoistway door is located in the wall of a corridor required to be fire-resistance rated in accordance with Section 1020.1.

Exceptions:

1. Protection of elevator hoistway doors ~~door openings~~ is not required where the elevator serves only *open parking garages* in accordance with Section 406.5.
2. Protection of elevator hoistway doors ~~door openings~~ is not required at the level(s) of exit discharge, provided that 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~~ Protection of elevator hoistway doors ~~door openings~~ are not required on levels where the elevator hoistway opens to the exterior.

Delete without substitution:

~~**3006.2.1 Rated corridors.** Where *corridors* are required to be fire-resistance rated in accordance with Section 1020.2, elevator hoistway openings shall be protected in accordance with Section 3006.3.~~

Revise as follows:

1020.2.1 Hoistway opening protection. Elevator hoistway doors in elevators hoistway enclosures required to be fire resistance rated shall be protected in accordance with Section 716. Elevator hoistway ~~doors~~ ~~openings~~ shall also be protected in accordance with Section ~~3006.2~~ ~~3006.2.1~~.

Reason Statement: Elevator doors that open into a rated corridor have to meet both the fire partition and fire barrier requirements. The options for elevator door protection in Section 3006.3 would be a viable option, so Section 3006.2.1 could be moved up as Item 6 in Section 3006.2. The change to 1020.2.1 is a pointer to both the rated corridor and elevator hoistway door protection requirements.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is a clarification of current requirements.

G183-21 Part I

PART I - IBC: SECTION 3006, 3006.3, 3007.6.2, 3007.6.3, 3008.6.1, 3008.6.2, 3008.6.3, 3008.6.3.1, 3008.6.3.2

PART II - IBC: 708.4.1 (New), 709.4.2, 710.4.1 (New)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org); Michael O'Brian, representing FCAC (fcac@iccsafe.org)

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY THE GENERAL CODE COMMITTEE. PART II WILL BE HEARD BY THE FIRE SAFETY CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Building Code

Revise as follows:

SECTION 3006 ELEVATOR LOBBIES AND HOISTWAY ~~OPENING DOOR~~ PROTECTION.

3006.3 ~~Hoistway opening~~ Elevator hoistway door protection. Where Section 3006.2 requires protection of the elevator hoistway ~~door opening doors~~, the protection shall be provided by one of the following:

1. An enclosed elevator lobby shall be provided at each floor to separate the elevator hoistway ~~shaft enclosure~~ doors from each floor ~~by with~~ fire partitions in accordance with Section 708. In addition, doors protecting openings in the ~~elevator lobby enclosure walls~~ fire partitions shall comply with Section 716.2.2.1 ~~as required for corridor walls~~. Penetrations of the ~~enclosed elevator lobby~~ fire partitions by ducts and air transfer openings shall be protected as required for *corridors* in accordance with Section 717.5.4.1.
2. An enclosed elevator lobby shall be provided at each floor to separate the elevator hoistway ~~shaft enclosure~~ doors from each floor ~~by~~ with smoke partitions in accordance with Section 710 where the building is equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2. In addition, doors protecting openings in the *smoke partitions* shall comply with Sections 710.5.2.2, 710.5.2.3 and 716.2.6.1. Penetrations of the ~~enclosed elevator lobby~~ smoke partitions by ducts and air transfer openings shall be protected as required for *corridors* in accordance with Section 717.5.4.1.
3. Additional doors shall be provided at each elevator hoistway door opening in accordance with Section 3002.6. Such door shall comply with the smoke and draft control door assembly requirements in Section 716.2.2.1.1 when tested in accordance with UL 1784 without an artificial bottom seal.
4. The elevator hoistway shall be pressurized in accordance with Section 909.21.

SECTION 3007 FIRE SERVICE ACCESS ELEVATOR.

Revise as follows:

3007.6.2 Elevator lobby ~~Lobby enclosure~~. The fire service access elevator lobby shall be ~~enclosed~~ separated from each floor with a smoke barrier in accordance with Section 709 ~~having a fire-resistance rating of not less than 1 hour~~, except that lobby doorways shall comply with Section 3007.6.3.

Exception: Enclosed fire service access elevator lobbies are not required at the *levels of exit discharge*.

3007.6.3 ~~Lobby~~ Elevator lobby doorways. Other than doors to the ~~hoistway~~, elevator control room or elevator control space, each ~~door doorway~~ to an enclosed fire service access elevator lobby in the fire barrier shall be provided with a $3/4$ -hour *fire door assembly* complying with Section 716. ~~The~~ Such *fire door assembly* shall comply with the smoke and draft control door assembly requirements of Section 716.2.2.1.1 and be tested in accordance with UL 1784 without an artificial bottom seal.

SECTION 3008 OCCUPANT EVACUATION ELEVATORS.

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*.

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 ~~716.2.2.1~~ 716.2.2.1.1.
2. Elevators that only service an *open parking garage* and the elevator lobby of the building shall not be required to provide *direct access*.

3008.6.2 Elevator lobby ~~Lobby enclosure~~. The occupant evacuation elevator lobby shall be ~~enclosed~~ separated from each floor with a smoke barrier in accordance with Section 709 ~~having a fire-resistance rating of not less than 1 hour~~, except that lobby doorways shall comply with Section

3008.6.3.

Exception: Enclosed occupant evacuation elevator lobbies are not required at the *levels of exit discharge*.

3008.6.3 Elevator lobby Lobby doorways. Other than the doors to the hoistway, elevator machine rooms, machinery spaces, control rooms and control spaces ~~within the lobby enclosure in the smoke barrier~~, each doorway to an occupant evacuation elevator lobby shall be provided with a $\frac{3}{4}$ -hour *fire door assembly* complying with Section 716. ~~The~~ Such fire door assembly shall comply with the smoke and draft control assembly requirements of Section 716.2.2.1.1 and be tested in accordance with UL 1784 without an artificial bottom seal.

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

3008.6.3.2 Door closing. Each *fire door assembly protecting the lobby doorway in the smoke barrier* shall be automatic-closing upon receipt of any fire alarm signal from the *emergency voice/alarm communication system* serving the building.

G183-21 Part II

PART II - IBC: 708.4.1 (New), 709.4.2, 710.4.1 (New)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org); Michael O'Brian, representing FCAC (fcac@iccsafe.org)

2021 International Building Code

SECTION 708 FIRE PARTITIONS.

Add new text as follows:

708.4.1 Fire partition walls enclosing elevator lobbies. Fire partition walls used to enclose elevator lobbies in accordance with Section 3006.3 (elevator hoistway protection), shall form an effective enclosure that terminates at a fire barrier or fire partition having a level of fire-resistance-rating not less than 1 hour, or an outside wall.

SECTION 709 SMOKE BARRIERS.

Revise as follows:

709.4.2 Smoke-barrier walls enclosing areas of refuge or elevator lobbies. Smoke-barrier walls used to enclose 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-resistance 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 716.2.2.1.1 shall not be required at each elevator hoistway door opening where protected by an elevator lobby, at each exit door opening into a protected lobby or at each exit doorway between an area of refuge and the exit enclosure.

SECTION 710 SMOKE PARTITIONS.

Add new text as follows:

710.4.1 Smoke partition walls enclosing elevator lobbies. Smoke partition walls used to enclose elevator lobbies in accordance with Section 3006.3 (elevator hoistway protection), shall form an effective enclosure that terminates at a fire barrier having a level of fire-resistance-rating not less than 1 hour, another smoke partition or an outside wall.

Reason Statement: The intent of this proposal is to clarify lobby protection requirements – which walls are fire barriers, fire partitions or smoke barriers. This will also clarify what requirements are applicable for the elevator hoistway doors vs. the doors in the other walls of the lobby protection. The current language is inconsistent for the locations where elevator lobbies are specified. This protection of elevator lobbies is a combination of the elevator hoistway and exit stairway (direct access to a stairway is required for fire service an occupant evacuation elevator lobbies) shaft enclosure/fire barriers and the fire partitions or smoke barriers required for lobbies (405.4.3, 3006.3, 3007.6.2 and 3008.6.2) The intent of new 708.4.1 and revised 709.4.2 is to clarify that the fire partitions/smoke barrier criteria is not applicable to all the walls of the elevator lobby since the vertical shaft/fire barrier protections is adequate. Fires typically happen in the occupied portions of the buildings, not within the elevator shaft or the stairway. In addition, in situations where an elevator lobby is provided, the elevator shafts are double protected from smoke intrusion from a fire on the floor.

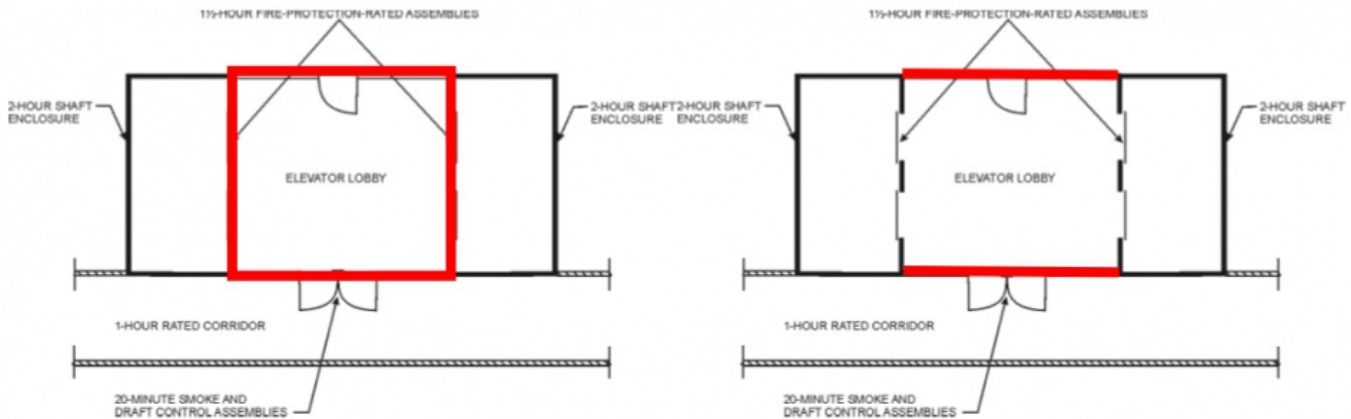


Diagram for elevator lobby

Diagram for which walls are fire partitions, smoke partitions or smoke barriers

Provisions for horizontal continuity are addressed for smoke barriers that surround elevator lobbies or areas of refuge. The same horizontal continuity should be addressed for elevator lobbies enclosed with fire partitions in Section 3006.3 Item 1 or smoke partitions in Section 3006.3 Item 2. The movement of 'smoke barrier wall' just assures a minimum fire resistance rating. The last sentence in 709.4.2 is not needed with the clarification of which walls meet which requirements in Chapter 30. The reference to sprinklers is not needed in Section 3006.3 Item 2, because this

is already a limitation in Section 3006.2. Taking it out makes this item easier to read. In addition, this could currently be read to not allow smoke barriers to form elevator lobbies in non-sprinklered buildings. Smoke barriers provide equal or better protection than fire partitions.

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

BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

The FCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes with regard to fire and life safety in new and existing buildings and facilities as well as the protection of life and property in wildland urban interface areas. In 2020 and 2021 the Fire-CAC held multiple virtual meetings that were open to any interested party. In addition, there were numerous virtual specific working group meetings that were also open to any interested parties, to develop, discuss and debate the proposed changes. Related documentation and reports are posted on the FCAC website at: FCAC.

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

This is a clarification for elevator lobby requirements. While technical criteria was added for horizontal continuity for fire partitions and smoke partitions at elevator lobbies, this was implied previously and does not add cost to construction.

G184-21

IBC: 3006.3

Proponents: Curtis Gonzales, representing Smoke Guard, Inc. (curtis@smokeguard.com); Amanda Hickman, representing SmokeGuard, Inc. (amanda@thehickmangroup.com)

2021 International Building Code

Revise as follows:

3006.3 Hoistway opening protection. Where Section 3006.2 requires protection of the elevator hoistway door opening, the protection shall be provided by one of the following:

1. An enclosed elevator lobby shall be provided at each floor to separate the elevator hoistway *shaft enclosure* doors from each floor by *fire partitions* in accordance with Section 708. In addition, doors protecting openings in the elevator lobby enclosure walls shall comply with Section 716.2.2.1 as required for *corridor* walls. Penetrations of the enclosed elevator lobby by ducts and air transfer openings shall be protected as required for *corridors* in accordance with Section 717.5.4.1.
2. An enclosed elevator lobby shall be provided at each floor to separate the elevator hoistway *shaft enclosure* doors from each floor by *smoke partitions* in accordance with Section 710 where the building is equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2. In addition, doors protecting openings in the *smoke partitions* shall comply with Sections 710.5.2.2, 710.5.2.3 and 716.2.6.1. Penetrations of the enclosed elevator lobby by ducts and air transfer openings shall be protected as required for *corridors* in accordance with Section 717.5.4.1.
3. Additional doors shall be provided at each elevator hoistway door opening in accordance with Section 3002.6. Such door shall comply with the smoke and draft control door assembly requirements in Section 716.2.2.1.1 when tested in accordance with UL 1784 without an artificial bottom seal.
4. For occupancies other than Group I-1 or Group I-2, The the elevator hoistway shall be pressurized in accordance with Section 909.21.

Reason Statement: Prior to COVID 19 there was concern regarding the safety of the use of shaft pressurization system in hospitals and assisted living facilities. This is not only true in a fire event, but also during testing which could be as frequent as monthly.

Hospitals are designed with spaces that include both positive and negative pressure rooms, both for the safety of occupants and patients. Negative pressure rooms are those with airflow designed to flow into the room, such that infectious agents and pathogens cannot leave that designated space (examples: legionella, tuberculosis, aspergillus, and pseudomonas). Positive pressure rooms are designed such that airflow is out of a room such that it rejects infectious agents such as staff and virus' causing the common cold (example: a burn patient or other immunocompromised patient). Pressurization of an elevator shaft, arguably the dirtiest space in any building, would promote the movement of particles from the elevator shaft into the occupied building volume, greatly increasing the chance of infection.

This would lessen the safety risk in buildings that house the most vulnerable in our population. Now, in the age of COVID-19, we have added another concern to the four primary pathogens.

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

There are many cost-effective options for protecting the hoistway in Group I-1 or Group I-2. Option 4 is typically the most expensive option so this will not increase the cost of construction.

G185-21

IBC: (New), 3006.3

Proponents: Curtis Gonzales, Smoke Guard, Inc., representing Smoke Guard, Inc. (curtis.gonzales@smokeguard.com); Amanda Hickman, representing SmokeGuard, Inc. (amanda@thehickmangroup.com)

2021 International Building Code

Add new definition as follows:

SMOKE PROTECTIVE CURTAIN ASSEMBLY FOR HOISTWAY. An automatic closing smoke and draft control curtain assembly.

Revise as follows:

3006.3 Hoistway opening protection. Where Section 3006.2 requires protection of the elevator hoistway door opening, the protection shall be provided by one of the following:

1. An enclosed elevator lobby shall be provided at each floor to separate the elevator hoistway *shaft enclosure* doors from each floor by *fire partitions* in accordance with Section 708. In addition, doors protecting openings in the elevator lobby enclosure walls shall comply with Section 716.2.2.1 as required for *corridor* walls. Penetrations of the enclosed elevator lobby by ducts and air transfer openings shall be protected as required for *corridors* in accordance with Section 717.5.4.1.
2. An enclosed elevator lobby shall be provided at each floor to separate the elevator hoistway *shaft enclosure* doors from each floor by *smoke partitions* in accordance with Section 710 where the building is equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2. In addition, doors protecting openings in the *smoke partitions* shall comply with Sections 710.5.2.2, 710.5.2.3 and 716.2.6.1. Penetrations of the enclosed elevator lobby by ducts and air transfer openings shall be protected as required for *corridors* in accordance with Section 717.5.4.1.
3. Additional doors shall be provided at each elevator hoistway door opening in accordance with Section 3002.6. Such ~~door doors~~ shall comply with the smoke and draft control door assembly requirements in Section 716.2.2.1.1 when tested in accordance with UL 1784 without an artificial bottom seal.
4. The elevator hoistway shall be pressurized in accordance with Section 909.21.
5. A smoke protective curtain assembly for hoistways shall be provided at each elevator hoistway door opening in accordance with Section 3002.6. Such curtain assemblies shall comply with the smoke and draft control requirements in Section 716.2.2.1.1 when tested in accordance with UL 1784 without an artificial bottom seal. Such curtain assemblies shall be equipped with a control unit listed to UL 864. Such curtain assemblies shall comply with section 2.11.6.3 of ASME A17.1/CSA B44. Installation and maintenance shall be in accordance with NFPA 105

Reason Statement: *Smoke protective curtain assemblies for hoistways* are recognized and regulated in NFPA 105 Chapter 9 (2019). There are multiple manufactures of these assemblies in the market. These products have been in the market for 25 years with tens of thousands of successful installations. Smoke protective curtain assemblies provide a proven means for smoke and draft control at the hoistway door that enables design freedom and innovation. Smoke protective curtain assemblies for hoistways should be allowed to provide smoke and draft protection where enclosed elevator lobbies are not required.

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

The cost of this option for hoistway opening protection is offset by the cost of other forms of protection. As such, the cost of construction for adding option five does not raise or lower the cost of construction.

G186-21

IBC: 3006.5 (New)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

THIS CODE CHANGE WILL BE HEARD BY THE MEANS OF EGRESS CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Building Code

Add new text as follows:

3006.5 Two-way communication. Where required by Section 1009.8, a two-way communication system shall be provided at the landing serving each elevator or elevator group.

Reason Statement: Two-way communication is required at the passenger elevators in sprinklered buildings with elevators. This is so that there is a way for people on those floors to communicate when they cannot use the stairways and there is not an area of refuge. This is needed and required even when elevators do not have standby power. The reference in Section 3006.5 is to reinforce this requirement.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is a reference, not a change in requirements.

G187-21

IBC: 3007.6

Proponents: Stephen Thomas, Colorado Code Consulting, a Shums Coda Assoc Company, representing Colorado Chapter ICC (stthomas@coloradocode.net)

2021 International Building Code

Revise as follows:

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 Exceptions:

1. Where a fire service access elevator has two entrances onto a floor, the second entrance shall be permitted to be protected in accordance with Section 3006.3.2.
2. A fire service access elevator lobby is not required to be provided at an occupied roof.

Reason Statement: We do not believe that it is necessary to have a fire service access elevator lobby at an occupied roof. There is no purpose for having such an elevator. the purpose of the lobby is to provide a staging area for the fire department to access the floor(s) above. There are no floors above an occupied roof. Therefore, the requirements for the FSAE lobby is unnecessary at that level. This exception maintains the reasonable level of access to the occupied roof, but does not require all of the requirements for the lobby.

Cost Impact: The code change proposal will decrease the cost of construction
Eliminating the requirements for a FSAE lobby at the occupied roof level will reduce the cost of construction.

G188-21

IBC: SECTION 3009 (New), 3009.1 (New), 3009.2 (New), 3009.3 (New)

Proponents: Kevin Brinkman, representing National Elevator Industry, Inc. (klbrinkman@neii.org)

2021 International Building Code

Add new text as follows:

SECTION 3009 PRIVATE RESIDENCE ELEVATORS.

3009.1 General. The design, construction, installation, alteration, repair and maintenance of elevators installed within a residential dwelling unit or installed to provide access to one individual residential dwelling unit shall conform to ASME A17.1/CSA B44, Section 5.3.

3009.2 Hoistway Enclosures. Hoistway enclosures shall comply with ASME A17.1/CSA B44, Requirement 5.3.1.1.

3009.3 Hoistway Opening Protection. Hoistway landing doors for private residence elevators shall comply with ASME A17.1/CSA B44, Requirements 5.3.1.8.1 through 5.3.1.8.3.

Reason Statement: Excessive clearances between the car door and the hoistway door on private residence elevators presents a serious hazard to young children and slight built adolescents or adults. Proper installation of the hoistway landing doors is critical to ensuring the gap between the hoistway door and the car door or gate does not exceed a 4 inch gap. The 4 inch maximum clearance is based on anthropometric data for young children. However, private residence elevators are not inspected by elevator inspectors in most jurisdictions and the few jurisdictions that do inspect them are mostly limited to the installation of new equipment. On the other hand, almost all private residence construction is inspected by construction officials.

The General Contractor typically constructs the hoistway enclosure and installs the hoistway doors on private residence elevators. Ensuring the installation of the hoistway doors so that the clearance between the hoistway door and the landing sill does not exceed the 0.75 inch requirement in ASME A17.1/CSA B44, will greatly increase the likelihood that the clearance between the hoistway and car doors will comply with the 4 inch gap. The proposed language increases awareness for the building designers, contractors and building code officials to the need to mitigate this serious hazard, while retaining the actual code requirements in ASME A17.1/CSA B44.

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

There is no additional cost because these requirements are already contained in the A17.1/B44 code referenced in Section 3001.3. This is being added to alert builders to these requirements.

G189-21

IBC: 3103.1, 3103.5 (New)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Revise as follows:

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. *Special event structures*, tents, umbrella structures and other membrane structures erected for a period of less than 180 days shall also comply with 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 Bleachers. Temporary bleachers, grandstands and folding and telescopic seating, that are not building elements, shall comply with ICC 300.

Reason Statement: The ICC 300 includes provisions for relocated and temporary bleachers. This information should be included in the IBC Chapter 31 requirements, so it does not get missed for seasonal venues or items such as seating for parades. The definition of 'temporary special event structures' in the IFC says that applies to items not addressed in IBC, so a similar reference in IFC is not needed.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. There is already a reference for ICC 300 in IBC Chapter 10, therefore, this is not a change in requirements.

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IBC: 3115.3, 3115.3.2 (New), FIGURE 3115.3.2 (New), 3115.8, 3115.8.1, 3115.8.1.1, 3115.8.2, 3115.8.3, 3115.8.3.4 (New), FIGURE 3115.8.3.4 (New), 3115.8.3.4.1 (New), 3115.8.3.4.2 (New), 3115.8.4.1, 3115.8.4.2, 3115.8.4.3, 3115.8.3.4.1 (New), 3115.8.3.4.2, 3115.8.5, 3115.8.5.1, 3115.8.5.2, 3115.8.5.3, TABLE 3115.8.5.3, ISO Chapter 35

Proponents: John-Jozef Proczka, representing self (john-jozef.proczka@phoenix.gov)

2021 International Building Code

Add new text as follows:

3115.3 Intermodal shipping container physical identification. *Intermodal shipping containers shall have the physical markings and data plate required by Sections 3115.3.1 and 3115.3.2 and verified by an approved agency. A report of the verification process and findings shall be provided to the building owner and building official.*

Where approved by the building official, the markings and existing data plate are permitted to be removed from the intermodal shipping containers before they are repurposed for use as buildings or structures or as a part of buildings or structures.

Revise as follows:

~~3115.3~~ **3115.3.1 Intermodal shipping container information data plate.** *Intermodal shipping containers shall bear an existing plate labelled as "CSC SAFETY APPROVAL" in English or French containing the following information. ~~as required by ISO 6346-GSG and verified by an approved agency. A report of the verification process and findings shall be provided to the building owner.~~*

1. ~~Manufacturer's name or identification number.~~ Abbreviated country of approval, abbreviated approval agency, and approval agency reference number.
2. Date manufactured.
3. ~~Safety approval number.~~
- 4.3. Manufacturer's Identification number.
- 5.4. Maximum operating gross mass ~~or weight~~ (kg) (lbs).
- 6.5. Allowable stacking load for 1.8G (kg) (lbs).
- 7.6. Transverse racking test force (Newtons).
- 8.7. ~~Valid~~ Required maintenance examination date.

~~Where approved by the building official, the markings and existing data plate are permitted to be removed from the intermodal shipping containers before they are repurposed for use as buildings or structures or as a part of buildings or structures.~~

Add new text as follows:

3115.3.2 Intermodal shipping container markings. *Intermodal shipping containers shall have markings, separate from the data plate, containing the following information. Refer to Figure 3115.3.2 for an example layout of the markings.*

1. An owner code consisting of three letters.
2. An equipment category identifier that shall be the letter U. This equipment category identifier is grouped with and immediately follows the owner code.
3. A six digit serial number.
4. A check digit in a box.
5. A two digit size code.
6. A type code of two letters. The first letter shall be G, V, U, B, or S. This type code is grouped with and immediately follows the size code.
7. Maximum gross mass (kgs) (lbs).
8. Tare mass (kgs) (lbs).

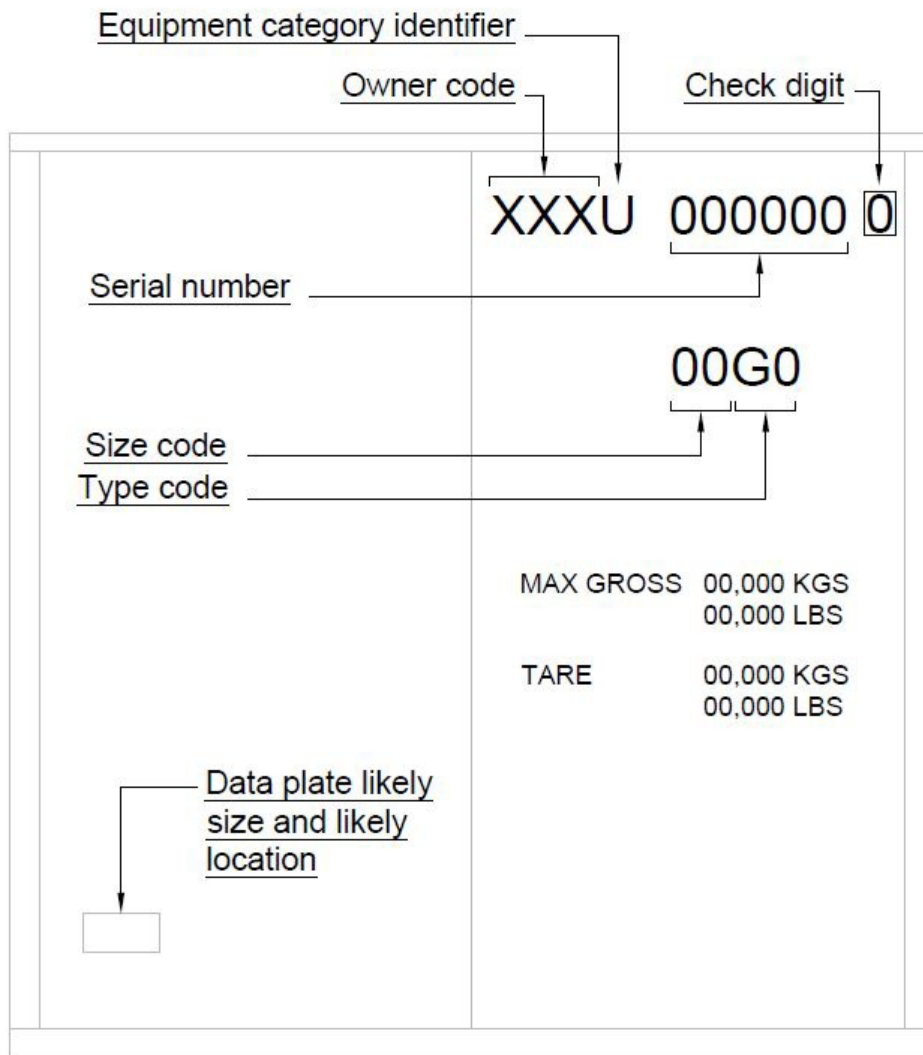


FIGURE 3115.3.2
MARKING IDENTIFICATION AND LIKELY LAYOUT

3115.4 Protection against decay and termites. Wood structural floors of *intermodal shipping containers* shall be protected from decay and termites in accordance with the applicable provisions of Section 2304.12.1.1.

3115.5 Under-floor ventilation. The space between the bottom of the floor joists and the earth under any *intermodal shipping container*, except spaces occupied by basements and cellars, shall be provided with ventilation in accordance with Section 1202.4.

3115.6 Roof assemblies. *Intermodal shipping container* roof assemblies shall comply with the applicable requirements of Chapter 15.

Exception: Single-unit, stand-alone intermodal shipping containers not attached to, or stacked vertically over, other intermodal shipping containers, buildings or structures.

3115.7 Joints and voids. Joints and voids that create concealed spaces between connected or stacked *intermodal shipping containers* at fire-resistance-rated walls, floor or floor/ceiling assemblies and roofs or roof/ceiling assemblies shall be protected by an approved *fire-resistant joint system* in accordance with Section 715.

Revise as follows:

3115.8 Structural. Intermodal shipping containers that conform to international standards that test certain structural properties of the containers ~~ISO 4496-1~~, as identified by the required markings in Section 3115.3.2, and are repurposed for use as buildings or structures, or as a part of buildings or structures, shall be designed in accordance with Chapter 16 ~~and the material specific chapters, and~~ except for the provisions specifically stated in Section 3115.8.1 through 3115.8.4.3 ~~this section~~.

3115.8.1 Foundations and stacking. *Intermodal shipping containers* repurposed for use as a permanent building or structure shall be supported on foundations, ~~other intermodal shipping containers~~, or other supporting structures designed and constructed in accordance with Chapters 16 through 23.

3115.8.1.1 Anchorage. *Intermodal shipping containers* shall be anchored to foundations or other supporting structures as necessary to provide a continuous load path for all applicable design and environmental loads in accordance with Chapter 16.

Delete without substitution:

~~**3115.8.2 Welds.** New welds and connections shall be equal to or greater than the original connections.~~

Revise as follows:

~~**3115.8.3**~~ **3115.8.2 Structural design.** The structural design for the *intermodal shipping containers* repurposed for use as a building or structure, or as part of a building or structure, shall comply with Section ~~3115.8.4~~ 3115.8.3 or ~~3115.8.5~~ 3115.8.4.

~~**3115.8.4**~~ **3115.8.3 Detailed design procedure.** A structural analysis meeting the requirements of Chapter 16, the applicable material chapters, and Section 3115.8.3.1 through 3115.8.3.4.2 ~~this section~~ shall be provided to the *building official* to demonstrate the structural adequacy of the intermodal shipping containers.

Exception: Intermodal shipping containers designed in accordance with Section ~~3115.8.4~~ 3115.8.5.

~~**3115.8.4.1**~~ **3115.8.3.1 Steel Material properties.** Structural material properties for existing *intermodal shipping container* steel components shall be established by Section 2202, material testing where the steel grade and composition cannot be identified by the manufacturer's designation as to manufacture and mill test.

~~**3115.8.4.2**~~ **3115.8.3.2 Seismic design parameters.** The seismic force-resisting system shall be designed and detailed in accordance with one of the following:

1. Where all or portions of the ~~corrugated~~ profiled steel panel container sides are considered to be the vertical seismic force-resisting system, design and detailing shall be in accordance with AISI S100 ~~the and~~ ASCE 7, Table 12.2-1 requirements for ~~light frame bearing wall systems with shear panels of all other materials; steel systems not specifically detailed for for seismic resistance, excluding cantilever column systems.~~
2. Where portions of the ~~corrugated~~ profiled steel panel container sides are retained, but are not considered to be the vertical seismic force-resisting system, an independent seismic force-resisting system shall be selected, designed and detailed in accordance with ASCE 7, Table 12.2-1.
3. Where portions of the ~~corrugated~~ profiled steel panel container sides are retained and integrated into a vertical seismic force-resisting system other than as permitted by Item 1, seismic design parameters shall be developed from testing and analysis in accordance with Section 104.11 and ASCE 7, Section 12.2.1.1 or 12.2.1.2.

~~**3115.8.4.3**~~ **3115.8.3.3 Allowable shear value.** The allowable shear values for the *intermodal shipping container* ~~corrugated~~ profiled steel sheet panel side walls and end walls shall be demonstrated by testing and analysis accordance with Section 104.11. Where penetrations are made in the side walls or end walls designated as part of the lateral force-resisting system, the penetrations shall be substantiated by rational analysis.

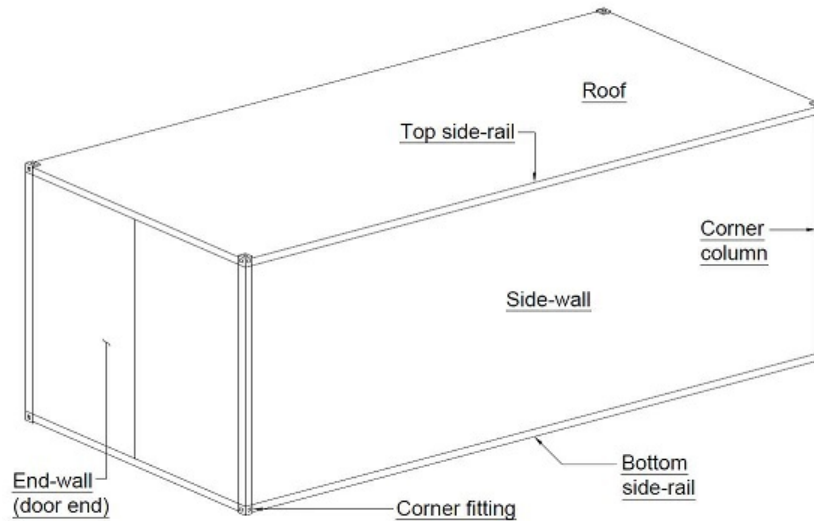
Exceptions: The allowable shear values shall be obtained from Section 3115.8.4.3 where the seismic design category is A, and the following two items are met:

1. The *intermodal shipping container* top and bottom rails, corner fittings, and columns or any portion thereof are not notched, cut, or removed in any manner.
2. The *intermodal shipping container* is erected in a level and horizontal position with the floor located at the bottom.

Add new text as follows:

3115.8.3.4 Tested structural components. Where they are not altered, the structural components identified in Section 3115.8.3.4.1 and 3115.8.3.4.2 can be used with the load combinations of Section 1605.3 based on the testing performed during the *intermodal shipping container* certification process. This certification shall have been verified by the data plate and markings in Section 3115.3.

The components names are labeled in Figure 3115.8.3.4.



**FIGURE 3115.8.3.4
CONTAINER ELEMENT IDENTIFICATION**

Revise as follows:

3115.8.3.4.1 Floors. Where the floor is not structurally altered from its state as a shipping container, the allowable superimposed out-of-plane design load for the floor is permitted to be calculated in accordance with Equation 31-1. The design load of the bottom rails to span from corner to corner shall not be obtained using similar methods. The ability for the floors and bottom rails to sustain these out-of-plane loads in combination with other forces shall be determined by the structural analysis.

Exceptions:

1. The capacity of the shipping container bottom side rails, in their original vertical orientation, to span from corner to corner under gravity loads can be obtained from Equation 31-2, where the floor, walls directly above, top rail directly above, corner columns, and roof are not structurally altered from their state as a shipping container.
2. The capacity of the shipping container bottom end rails, in their original vertical orientation, to span from corner to corner under gravity loads can be obtained from Equation 31-3, where the floor, walls directly above, top rail directly above, corner columns, and roof are not structurally altered from their state as a shipping container.

$$q_a = 0.8(R-T)/(LW)$$

(Equation 31-1)

where:

q_a = Allowable superimposed design load using ASD load combinations, in lb/ft² (kg/m²)

R = Maximum gross mass, as marked on the container and its CSC Safety Approval Plate, in lbs (kgs)

T = Tare mass, as marked on the container and its CSC Safety Approval Plate, in lbs (kgs)

L = Interior floor length dimension of the shipping container, in feet (meters)

W = interior floor width dimension of the shipping container, in feet (meters)

$$w_a = 0.8(R-T)/W$$

(Equation 31-2)

where:

w_a = Allowable superimposed design load using ASD load combinations, in lb/ft (kg/m)

The other variables are defined as in Equation 31-1.

$$w_a = 0.8(R-T)/L$$

(Equation 31-3)

where:

The variables are defined as in Equation 31-1 and 31-2.

3115.8.3.4.2 Side-wall and end-wall. Where the side-wall is not structurally altered from its state as a shipping container, the allowable out-of-plane design load for the side-wall is permitted to be calculated in accordance with Equation 31-4. The ability for the side-wall to sustain these out-of-plane loads in combination with other forces shall be determined by the structural analysis.

Where the end-wall is not structurally altered from its state as a shipping container, the allowable out-of-plane design load for the end-wall is permitted to be calculated in accordance with Equation 31-5. The ability for the end-wall to sustain these out-of-plane loads in combination with other forces shall be determined by the structural analysis.

$$q_a = 0.24(R-T)/HL$$

(Equation 31-4)

where:

H = The interior height dimension of the wall, in feet (meters)

The other variables are defined as in equation 31-1.

$$q_a = 0.16(R-T)/HW$$

(Equation 31-5)

where:

The variables are defined as in Equation 31-1 and 31-4.

3115.8.4 3115.8.5 Simplified structural design of single-unit containers. Single-unit intermodal shipping containers conforming to the limitations of Section 3115.8.5.1 shall be permitted to be designed in accordance with the simplified structural design provisions of Section 3115.8.5.2.

3115.8.4.1 3115.8.5.1 Limitations. The use of Section 3115.8.5 is subject to the following limitations:

1. The intermodal shipping container shall be a single-unit, stand-alone unit supported on a foundation and shall not be in contact with or supporting any other shipping container or other structure.
2. The intermodal shipping container top and bottom rails, corner castings, and columns or any portion thereof shall not be notched, cut, or removed in any manner.
3. The intermodal shipping container shall be erected in a level and horizontal position with the floor located at the bottom.
4. The intermodal shipping container shall be located in Seismic Design Category A, B, C or D.

3115.8.5.2 3115.8.4.2 Simplified structural design. Where permitted by Section 3115.8.5.1 3115.8.4.1, single-unit, stand-alone intermodal shipping containers shall be designed using the following assumptions for the corrugated profiled steel panel shear walls:

1. The appropriate detailing requirements contained in Chapters 16 through 23.
2. Response modification coefficient, $R = 2$.
3. Overstrength factor, $\Omega_0 = 2.5$.
4. Deflection amplification factor, $C_d = 2$.
5. Limits on structural height, $h_n = 9.5$ feet (2900 mm).

3115.8.5.3 3115.8.4.3 Allowable shear. The allowable shear for the corrugated profiled steel panel side walls (longitudinal) and end walls (transverse) for wind design and seismic design using the coefficients of Section 3115.8.5.2 3115.8.4.2 shall be in accordance with Table 3115.8.5.3 3115.8.4.3, provided that all of the following conditions are met:

1. The total linear length of all openings in any individual side wall or end wall shall be limited to not more than 50 percent of the length of that side wall or end wall, as shown in Figure 3115.8.5.3(1) 3115.8.4.3(1).
2. Any full-height wall length, or portion thereof, less than 4 feet (305 mm) shall not be considered as a portion of the lateral force-resisting system, as shown in Figure 3115.8.5.3(2) 3115.8.4.3(2).
3. All side walls or end walls used as part of the lateral force-resisting system shall have an existing or new boundary element on all sides to form a continuous load path, or paths, with adequate strength and stiffness to transfer all forces from the point of application to the final point of resistance, as shown in Figure 3115.8.5.3(3) 3115.8.4.3(3).
4. Where openings are made in container walls, floors or roofs, for doors, windows and other openings:
 - 4.1 The openings shall be framed with steel elements that are designed in accordance with Chapters 16 and 22.
 - 4.2 The cross section and material grade of any new steel element shall be equal to or greater than the steel element removed.

5. A maximum of one penetration not greater than 6 inches (152 mm) in diameter for conduits, pipes, tubes or vents, or not greater than 16 square inches (10 323 mm²) for electrical boxes, is permitted for each individual 8-foot (2438 mm) length of lateral force-resisting wall. Penetrations located in walls that are not part of the lateral force-resisting system shall not be limited in size or quantity. Existing *intermodal shipping container* vents shall not be considered a penetration, as shown in Figure ~~3115.8.5.3(4)~~ 3115.8.4.3(4).
6. End wall doors designated as part of the lateral force-resisting system shall be welded closed.

TABLE 3115.8.5.3 3115.8.4.3
ALLOWABLE SHEAR VALUES FOR INTERMODAL SHIPPING CONTAINER CORRUGATED PROFILED STEEL PANEL WALLS FOR WIND OR SEISMIC LOADING

CONTAINER DESIGNATION ^b	CONTAINER DIMENSION (nominal length)	CONTAINER DIMENSION (nominal height)	ALLOWABLE SHEAR VALUES (PLF) ^{a,e}	
			Side Wall	End Wall
†EEE	45 feet	9.5 feet	75	843
†EE		8.5 feet		
†AAA	40 feet	9.5 feet	84	
†AA		8.5 feet		
†A		8.0 feet		
†AX		<8.0 feet		
†BBB	30 feet	9.5 feet	112	
†BB		8.5 feet		
†B		8.0 feet		
†BX		<8.0 feet		
†GG	20 feet	8.5 feet	168	
†G		8.0 feet		
†GX		<8.0 feet		
†D	10 feet	8.0 feet	337	
†DX		<8.0 feet		

For SI: 1 foot = 304.8 mm.

- a. ~~The allowable strength shear for the side walls and end walls of the intermodal shipping containers are derived from ISO 1496-1 and reduced by a factor of safety of 5.~~
- b. ~~Container designation type is derived from ISO 668.~~
- c. a. Limitations of Section 3115.8.4.1 ~~3115.8.5.1~~ shall apply.

Delete without substitution:

ISO

International Organization for
Standardization
Chemin de Blandonnet 8 CP 401 1214
Vernier
Geneva Switzerland

~~ISO 668—2013: Series 1 Freight Containers—Classifications, Dimensions and Ratings~~

~~ISO 1496-1—2013: Series 1 Freight Containers—Specification and Testing—Part 1: General Cargo Containers for General Purposes~~

~~ISO 6346—1995: Freight Containers—Code, Identification and Marking with Amendment 3—2012~~

Reason Statement: Intermodal international shipping containers are primarily governed by two standards that would affect portions of how they behave structurally: The International Maritime Organization's (IMO) International Convention for Safe Containers (CSC) of 1972, amended in 1993, and ISO 1496-1. ISO 6346 contains the marking requirements for containers that meet various ISO standards, including 1496-1.

Re 3115.3: Both CSC and ISO 6346 require different physical identifiable information to be present on the container. The CSC requires the data plate, and ISO 6346 requires much larger markings, that are usually painted on. Both need to be present in order to verify both CSC and 1496-1 have been met.

Re 3115.3.1: This section is adjusted to remove the reference to ISO 6346 for the data plate, which was both incorrect and unnecessary, as the user of the code does not need to actually read CSC or ISO 6346 to verify the items written.

Re 3115.3.2: This section is added such that the requirements that ISO 6346 requires be marked on the containers are verified, and have the correct type code, such that conformance to ISO 1496-1 can be determined by these markings.

Re 3115.8: The reference to ISO 1496-1 is removed, as the user of the code does not need to read ISO 1496-1, as it does not contain information that is used for design in this code. The user is informed that the markings that were required in 3115.3.2 verify that international standards have been met. The inclusion of the material specific chapters, is that many of the components of shipping containers cannot be structurally verified purely by the tests that have been conducted as part of the international certification process, so they would need to be analyzed in accordance with the steel and wood chapters. The final statement is in recognition that Section 3115 is modifying the provisions found elsewhere in the code that, unless specifically stated, would still apply.

Re 3115.8.1: Clarifying that containers can be stacked

Re 3115.8.2: The statement on welds could have multiple interpretations, and doesn't seem to add any value with any of them. It would require welds to be held to some vague and arbitrary standard of equality to existing welds. If this section was intended for weld replacements, or weld fixes, it should be modified as such, but its purpose would still seem dubious. It could also be interpreted that every weld taking place on a container would need to meet this vague equality requirement, which once again doesn't seem to have a purpose.

Re 3115.8.4: The inclusion of the material specific chapters, is that many of the components of shipping containers cannot be structurally verified purely by the tests that have been conducted as part of the international certification process, so they would need to be analyzed in accordance with the steel and wood chapters.

Re 3115.8.4.1: The requirements of Section 2202 already have provisions for identifying unknown steel, and so they should not be recreated or differently stated.

Re 3115.8.4.2: The sides of containers do not meet the definition for *light-frame construction* as used in the IBC or in the AISI standards, so they should not be using light-frame construction methods. They are cold-formed steel profiled panels, as such AISI S100, which invokes AISI S310 for profiled steel panels being used as diaphragms is therefore the correct reference. All of their components are steel, as required by the definition of intermodal shipping containers, so it clearly follows that they are steel systems which have not been detailed for seismic resistance. This would be in line with AISI S310 design methods as invoked by AISI S100.

Re 3115.8.4.3: A name change to be consistent with the AISI standards governing profiled steel deck diaphragm panels, AISI S100 and AISI S310. The exception proposed follows the logic used to justify the floor tested components, as the static racking strength in the longitudinal and transverse directions has been verified by tests in accordance with ISO 1496-1.

Re 3115.8.4.4: As the containers have already undergone certification that involves structural testing they can be trusted for their structural capacity in certain specific ways. The challenge comes with cutting parts out of them, or leaving their doors open, as is done when converting them into buildings. Therefore, the components that can be trusted must only be done so under certain circumstances, as laid out in this section. With some clever deductive reasoning the provisions of this section could potentially be expanded.

Re 3115.8.4.4.1: One of the easiest components of the certified containers to trust based on their testing are the floor members that typically span from side-wall to side-wall. These floors have had two primary tests conducted on them as required by both CSC and ISO 1496-1: Being loaded such that the total mass of the container and its contents reaches two times the maximum gross mass marked on the containers, and having a 16 kip 2 wheeled vehicle driven around inside of them all while only supported from their corner fittings, that project further down than their side rails. As such, equation 31-1 recognizes the tested capacity of the floors, with factors of safety. The value that the floor is required to hold during its tests is $2(R-T)$. As such the allowance for $0.8(R-T)$ is using a factor of safety of 2.5, as used for tested components in 1709.3.1. The international standard for serviceability that these containers meet is: no permanent deformation that would render them incapable of being used for their designed purpose, as such factor of safety of 2.5 should suffice for maintaining serviceability under live loading scenarios, even though the containers have never had proper serviceability limit states in accordance with the IBC. The allowance for the bottom side rails to span is similar to the floor members themselves, however the bottom side rails are braced against buckling by the adjacent floors and walls above, so the adjacent members become critical components. The bottom side rails are also aided to a very large extent in their spanning capabilities by acting as deep beams with the walls and top rail above. Therefore, their capacity can only be relied on in the cases where all of their bracing and composite action bestowing components have remained in place.

Re 3115.8.4.4.2: Similar to the floors, the walls of the containers have been tested under the international standards that the containers are certified to. The side walls are tested under a load equal to 0.6 times the mass of the net contents multiplied by the acceleration due to gravity. This is further reduced here by a factor of safety of 2.5.

The end walls are tested under a load equal to 0.4 times the mass of the net contents multiplied by the acceleration due to gravity. This is further reduced here by a factor of safety of 2.5.

Re 3115.8.5.2 and 3115.8.5.3: Simply a name change to be consistent with the AISI standards governing profiled steel deck diaphragm panels, AISI S100 and AISI S310.

Re Table 3115.8.5.3: Containers that are 10 feet long, with designations of 1D or 1DX have not been tested to transverse or longitudinal racking force resistance, in accordance with ISO 1496-1, so they cannot be trusted to have this strength, and are removed from the table. The container designation and container height provide no useful information, and are also removed.

Re ISO Standard 668, 1496-1, and 6346: The code does not require the user to go to these reference standards in order to design a building or structure, as such their inclusion as referenced standards is inconsistent with how the other reference standards are used, where they provide design information to be used in conjunction with the IBC.

Bibliography: CSC (1996), *International Convention for Safe Containers*, CSC, International Maritime Organization, 4 Albert Embankment, London SE1 7SR, United Kingdom of Great Britain and Northern Ireland.

ISO (2013), *Series 1 freight containers - Specification and testing - Part 1: General cargo containers for general purposes*, ISO 1496-1, International Organization for Standardization, Chemin de Blandonnet 8, CP 401-1214 Vernier, Geneva, Switzerland

ISO (1995), *Freight containers - Coding, identification and marking*, ISO 6346, International Organization for Standardization, Chemin de Blandonnet 8, CP 401-1214 Vernier, Geneva, Switzerland

AISI (2020), *North American Specification for the Design of Cold-Formed Steel Structural Members*, AISI S100-16 w/S2-20, American Iron and Steel Institute, 25 Massachusetts Avenue, NW, Suite 800, Washington, DC 20001

AISI (2020), *North American Specification for the Design of Profiled Steel Diaphragm Panels*, AISI S310-20, American Iron and Steel Institute, 25 Massachusetts Avenue, NW, Suite 800, Washington, DC 20001

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

By recognizing some of the tests that containers have already been certified to under international standards, some of the structural components do not need to be verified by material testing or structural investigation.

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IBC: 3115.8.4, 3115.8.4.2, 3115.8.4.3, 3115.8.5, 3115.8.5.2, 3115.8.5.3, TABLE 3115.8.5.3

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@icc-safe.org)

2021 International Building Code

Revise as follows:

SECTION 3115 INTERMODAL SHIPPING CONTAINERS.

3115.8.4 Detailed structural design procedure. A structural analysis meeting the requirements of this section shall be provided to the *building official* to demonstrate the structural adequacy of the intermodal shipping containers.

Exception: Intermodal shipping containers designed in accordance with Section 3115.8.5.

3115.8.4.2 Seismic design parameters. The seismic force-resisting system shall be designed and detailed in accordance with one of the following:

1. Where all or portions of the ~~corrugated steel intermodal shipping container sides elements~~ are considered to be the seismic force-resisting system, design and detailing shall be in accordance with the ASCE 7, Table 12.2-1 requirements for light-frame bearing-wall systems with shear panels of all other materials.
2. Where portions of the ~~corrugated steel intermodal shipping container sides elements~~ are retained, but are not considered to be the seismic force-resisting system, an independent seismic force-resisting system shall be selected, designed and detailed in accordance with ASCE 7, Table 12.2-1.
3. Where portions of the ~~corrugated steel intermodal shipping container sides elements~~ are retained and integrated into a seismic force-resisting system other than as permitted by Section 3115.8.4.2 Item 1, seismic design parameters shall be developed from testing and analysis in accordance with Section 104.11 and ASCE 7, Section 12.2.1.1 or 12.2.1.2.

3115.8.4.3 Allowable shear value. The allowable shear values for the *intermodal shipping container* ~~corrugated steel sheet panel~~ side walls and end walls shall be demonstrated by testing and analysis in accordance with Section 104.11. Where penetrations are made in the side walls or end walls designated as part of the lateral force-resisting system, the penetrations shall be substantiated by rational analysis.

3115.8.5 Simplified structural design procedure of single-unit containers. Single-unit *intermodal shipping containers* conforming to the limitations of Section 3115.8.5.1 shall be permitted to be designed in accordance with ~~the simplified structural design provisions of Section 3115.8.5.2-Sections 3115.8.5.2 and 3115.8.5.3.~~

3115.8.5.2 Simplified structural. Structural design assumptions. Where permitted by Section 3115.8.5.1, single-unit, stand-alone intermodal shipping containers shall be designed using the following assumptions for the ~~corrugated steel shear~~ side walls and end walls:

1. The appropriate detailing requirements contained in Chapters 16 through 23.
2. Response modification coefficient, $R = 2$.
3. Overstrength factor, $\Omega_0 = 2.5$.
4. Deflection amplification factor, $C_d = 2$.
5. Limits on structural height, $h_n = 9.5$ feet (2900 mm).

3115.8.5.3 Allowable shear. The allowable shear for the ~~corrugated steel intermodal shipping container~~ side walls (longitudinal) and end walls (transverse) for wind design and seismic design using the coefficients of Section 3115.8.5.2 shall be in accordance with Table 3115.8.5.3, provided that all of the following conditions are met:

1. The total linear length of all openings in any individual side wall or end wall shall be limited to not more than 50 percent of the length of that side wall or end wall, as shown in Figure 3115.8.5.3(1).
2. Any full-height wall length, or portion thereof, less than 4 feet (305 mm) shall not be considered as a portion of the lateral force-resisting system, as shown in Figure 3115.8.5.3(2).
3. All side walls or end walls used as part of the lateral force-resisting system shall have an existing or new boundary element on all sides to form a continuous load path, or paths, with adequate strength and stiffness to transfer all forces from the point of application to the final point of resistance, as shown in Figure 3115.8.5.3(3).
4. Where openings are made in the intermodal shipping container walls, floors or roofs, for doors, windows and other openings:
 - 4.1 The openings shall be framed with steel elements that are designed in accordance with Chapters 16 and 22.
 - 4.2 The cross section and material grade of any new steel element shall be equal to or greater than the steel element removed.

5. A maximum of one penetration not greater than 6 inches (152 mm) in diameter for conduits, pipes, tubes or vents, or not greater than 16 square inches (10 323 mm²) for electrical boxes, is permitted for each individual 8-foot (2438 mm) length of lateral force-resisting wall. Penetrations located in walls that are not part of the lateral force-resisting system shall not be limited in size or quantity. Existing *intermodal shipping container* vents shall not be considered a penetration, as shown in Figure 3115.8.5.3(4).
6. End wall doors designated as part of the lateral force-resisting system shall be welded closed.

**TABLE 3115.8.5.3
ALLOWABLE SHEAR VALUES FOR INTERMODAL SHIPPING CONTAINER CORRUGATED STEEL SIDE WALLS AND END WALLS FOR
WIND OR SEISMIC LOADING**

CONTAINER DESIGNATION ^b	CONTAINER DIMENSION (nominal length)	CONTAINER DIMENSION (nominal height)	ALLOWABLE SHEAR VALUES (PLF) ^{a, c}	
			Side Wall	End Wall
1EEE	45 feet	9.5 feet	75	843
1EE		8.5 feet		
1AAA	40 feet	9.5 feet	84	
1AA		8.5 feet		
1A		8.0 feet		
1AX		< 8.0 feet		
1BBB	30 feet	9.5 feet	112	
1BB		8.5 feet		
1B		8.0 feet		
1BX		< 8.0 feet		
1CC	20 feet	8.5 feet	168	
1C		8.0 feet		
1CX		< 8.0 feet		
1D	10 feet	8.0 feet	337	
1DX		< 8.0 feet		

For SI: 1 foot = 304.8 mm.

- a. The allowable strength shear values for the side walls and end walls of the intermodal shipping containers are derived from ISO 1496-1 and reduced by a factor of safety of 5.
- b. Container designation type is derived from ISO 668.
- c. Limitations of ~~Section~~ Sections 3115.8.5.1 and 3115.8.5.3 shall apply.

Reason Statement: Most of the modifications contained in this code change proposal represent editorial changes to terminology as a result of comments received following the introduction of the Intermodal Shipping Container proposals in 2018 and 2019. These comments included concerns about redundancy and including language that is consistent with Chapter 16 Structural provisions.

3115.8.4. Proposed editorial change to the subsection title to insert the word “structural” to reflect that the design provision contained herein is structural in nature.

3115.8.4.2 Item 3. Proposed editorial change to reference the correct section. The intended section reference is supposed to be 3115.8.4.2 Item 1, not 3115.4.2 Item 1 as that section does not exist.

3115.8.4.2, 3115.8.5.2, 3115.8.5.3, and Table 3115.8.5.3. During the Code Action Hearing for the 2018 Group A Code Development Cycle, the Code Action Committee recommended to the proponent to change the wording as part of a public comment. This was inadvertently missed during the Public Comment Hearing. This proposed editorial change is to strike out the words “corrugated steel” and “sides” and replace with the words “intermodal shipping container” and “elements”. The intent to emphasize the entirety of the structural elements (i.e., corrugated steel, top and bottom railing, and side columns) contributes to the lateral force resisting system and not just the individual corrugated steel component.

3115.8.5. Proposed editorial change to the subsection title to insert the word “procedure” reflect the emphasis on structural design procedure of this provision.

Table 3115.8.5.3. Proposed editorial change to the table footnote (a) to insert the word “value” to properly complete the sentence and table footnote (c) to include sections with the applicable conditions for using this table.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle,

which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

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

The proposed changes are editorial in nature, does not change any technical requirement, and as a result should not have any impact on construction cost.

G198-21

IBC: 3115.8.2, 3115.8.4, 3115.8.4.2, 3115.8.5.3

Proponents: Julie Furr, Rimkus Consulting Group, Inc., representing Federal Emergency Management Agency/Applied Technology Council - Seismic Code Support Committee (jfurr@rimkus.com); Kelly Cobeen, Wiss Janney Elstner Associates, Inc., representing Federal Emergency Management Agency/Applied Technology Council - Seismic Code Support Committee (kcobeen@wje.com); Michael Mahoney, Federal Emergency Management Agency, representing Federal Emergency Management Agency (mike.mahoney@fema.dhs.gov); Ronald LaPlante, representing Federal Emergency Management Agency/Applied Technology Council - Seismic Code Support Committee (ron.laplante@dgs.ca.gov)

2021 International Building Code

Revise as follows:

3115.8.2 Welds. ~~The strength of new~~ **New** welds and connections shall be no less equal to or greater than the strength provided by the original connections. All new welds and connections shall be designed and constructed in accordance with Chapters 16, 17, and 22.

3115.8.4 Detailed design procedure. A structural analysis meeting the requirements of this section shall be provided to the *building official* to demonstrate the structural adequacy of the intermodal shipping containers.

Exception: Structures using an intermodal ~~Intermodal~~ shipping container ~~containers~~ designed in accordance with Section 3115.8.5.

3115.8.4.2 Seismic design parameters. The seismic force-resisting system shall be designed and detailed in accordance with ASCE 7 and one of the following:

1. Where all or portions of the corrugated steel container sides are considered to be the seismic force-resisting system, design and detailing shall be in accordance with the ASCE 7, Table 12.2-1 requirements for light-frame bearing-wall systems with shear panels of all other materials. ASCE 7 seismic provision exceptions, related to light-frame construction, shall not apply to the design of structures using intermodal shipping containers. The allowable shear values shall be determined in accordance with Section 3115.8.4.3.
2. Where all or portions of the corrugated steel container sides are ~~retained, but are~~ not considered to be part of the seismic force-resisting system, an independent seismic force-resisting system shall be selected, ~~designed~~ and detailed in accordance with ASCE 7, Table 12.2-1.
3. Where all or portions of the corrugated steel container sides are retained and integrated into a seismic force-resisting system other than as permitted by Item 1, seismic design parameters shall be developed from testing and analysis in accordance with Section 104.11 and ASCE 7, Section 12.2.1.1 or 12.2.1.2.

3115.8.5.3 Allowable shear. The allowable shear for the corrugated steel side walls (longitudinal) and end walls (transverse) for wind design and seismic design using the coefficients of Section 3115.8.5.2 shall be in accordance with Table 3115.8.5.3, provided that all of the following conditions are met:

1. The total linear length of all openings in any individual side wall or end wall shall be limited to not more than 50 percent of the length of that side wall or end wall, as shown in Figure 3115.8.5.3(1).
2. Any full-height wall length, or portion thereof, less than 4 feet (305 mm) shall not be considered as a portion of the lateral force-resisting system, as shown in Figure 3115.8.5.3(2).
3. All side walls or end walls used as part of the lateral force-resisting system shall have an existing or new boundary element on all sides to form a continuous load path, or paths, with adequate strength and stiffness to transfer all forces from the point of application to the final point of resistance, as shown in Figure 3115.8.5.3(3). The existing door interlocking mechanism shall not be considered as a component of the required load path.
4. Where openings are made in container walls, floors or roofs, for doors, windows and other openings:
 - 4.1 The openings shall be framed with steel elements that are designed in accordance with Chapters 16 and 22.
 - 4.2 The cross section and material grade of any new steel element shall be equal to or greater than the steel element removed.
5. A maximum of one penetration not greater than 6 inches (152 mm) in diameter for conduits, pipes, tubes or vents, or not greater than 16 square inches (10 323 mm²) for electrical boxes, is permitted for each individual 8-foot (2438 mm) length of lateral force-resisting wall. Penetrations located in walls that are not part of the lateral force-resisting system shall not be limited in size or quantity. Existing *intermodal shipping container* vents shall not be considered a penetration, as shown in Figure 3115.8.5.3(4).
6. End wall doors designated as part of the lateral force-resisting system shall be welded closed: around the full perimeter of the door panels.

Reason Statement: Section 3115.8.2 is not clear as to what welds and connections this applies to, nor does it clarify what is meant by “equal to or greater than” (strength, size, or other). This change clarifies that it is the “strength” of the welds and connections that should be assessed for equivalency. The proposed language clarifies that new welds shall comply with minimum design standards as already specified elsewhere in the IBC.

Section 3115.8.4.2 is modified to include direct reference to ASCE 7 to capture the seismic design provisions, such as combination of seismic force-

resisting systems, regardless of which of the 3 design items are selected. The first proposed change to Item 1 is to not permit simplified and relaxed requirements in ASCE 7, intended specifically for light-frame construction, to be applied to steel shipping containers since these containers may not exhibit similar seismic response characteristics as light-frame construction. The second proposed change to Item 1 is to tie the system seismic parameters to the system capacity by direct reference to Section 3115.8.4.3. This is also intended to further clarify that the allowable shear values contained in the simplified procedure shown in Table 3115.8.5.3 are not intended to be permitted with the detailed design procedure. The proposed changes in Items 2 and 3 are editorial to be consistent with Item 1.

Section 3115.8.5.3 is modified to ensure that the allowable shear in Table 3115.8.5.3 for the end wall with doors is based on an adequate load path between the door panels and boundary elements, as determined by established design theory. The perimeter welds of the end door panels are to be designed per Section 3115.8.2 and may be continuous or intermittent as required by design. These changes further clarify that the original mechanical locking mechanisms shall not be relied upon to function as a lateral force-resisting system component of the repurposed shipping container.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. These changes are editorial in nature and intended to clarify the design requirements.

G201-21

IBC: APPENDIX Q (New)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Add new text as follows:

APPENDIX Q TEMPORARY STRUCTURES AND USES TO SERVE EMERGENCIES

Q101 GENERAL.

Q101.1 Scope. The provisions of this appendix shall apply to the use, construction, installation, alteration, relocation and location of emergency need based temporary structures and any service utilities or systems that serve such temporary structures.

Q101.1.1 Objectives. The objective of this Appendix is intended to provide flexibility to permit the use of innovative approaches and techniques to establish temporary structures and uses in a timely fashion while encountering unusual circumstances and maintain the level of safety intended by the code.

Q101.1.2 Temporary use. Temporary use during emergencies may exceed 180 days. Judgement shall be used by the code official to allow for temporary uses and conditions to continue for the duration of the emergency based on the needs of the emergency. The building official is authorized to grant extensions for demonstrated cause.

Q102 DEFINITIONS.

Q102.1 Definitions. 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.

Add new definition as follows:

EMERGENCY. . Any event declared by local, state, or federal entities that temporarily overwhelms response capabilities, and may require the suspension or modification of regulations, codes, or standards to facilitate response to such an event.

TEMPORARY STRUCTURES. . That which is built, constructed or erected for a period of less than 180 days.

TEMPORARY USE. An activity or practice that is established at designated location for a period of less than 180 days. Uses include, but are not limited to, those functional designations listed within the occupancy group descriptions in Section 302.1 of this code.

Add new text as follows:

Q103 SUBMITTAL DOCUMENTS.

Q103.1 General. Submittal documents shall be of sufficient clarity to indicate the location, nature and extent of the work or use proposed and show in detail that it will conform to the provisions of this code and relevant laws, ordinances, rules and regulations, as determined by the code official.

Q104 CONFORMANCE.

Q104.1 Conformance. Temporary structures and uses shall conform to the structural strength, fire safety, means of egress, accessibility, light, ventilation and sanitary requirements of this section as necessary to provide a reasonable level of safety, health and general welfare.

Q104.2 Changes over time. As an emergency evolves, and more resources become available, plans should be made to bring structures and temporary uses in line with the main body of the code.

Q105 PERMITS.

Q105.1 Required permits. Temporary structures other than tents and other membrane structures that occupy an area greater than 120 square feet (11.16 m²), shall not be erected, operated or maintained for any purpose without obtaining a permit from the code official. Tents and membrane structures should be permitted in accordance with the International Fire Code.

Q106 GENERAL STANDARDS FOR EMERGENCY STRUCTURES.

Q106.1.1 Scope. The provisions of Sections Q106.2 through Q106.7 shall apply to all structures constructed, erected or relocated during emergencies.

Q106.2 Intent. The intent of this section is to provide a base level of safety in a structure built or repurposed for emergency use.

Q106.3 Change of occupancy. Existing buildings used in a way that was not originally intended by occupancy class or use shall be allowed without formally changing the occupancy class. The previous occupancy class shall be restored upon the conclusion of the emergency.

Q106.4 Fire Safety Provisions. Determine fire safety requirements in accordance with Section Q106.4.1 through Q106.4.5 in order to make determinations of safe conditions rather than strict adherence to the provisions of International Fire Code.

Q106.4.1 Fire safety and evacuation plans. Fire Safety and evacuation plans shall be provided in accordance with Section 403 and 404 of the International Fire Code. Plans should be updated where there are any physical changes to the layout of the structure.

Q106.4.2 Training and practice drills. Training of staff and practice drills shall comply with Section 405 and 406 of the International Fire Code. Structures in place for longer than 30 days shall conduct evacuation drill in accordance with Section 405.3 of the International Fire Code based on the temporary use.

Q106.4.3 Fire Protection. An evaluation shall be performed to decide on fire protection needed utilizing NFPA 550.

Q106.4.4 Emergency Access. Emergency vehicle access roads shall be approved by the fire code official.

Q106.4.5 Fire Watch. A fire watch in accordance with Section 403.11.1 of the International Fire Code shall be permitted to be provided in lieu of other fire protection system.

Q106.5 Means of Egress. Means of Egress shall comply with Sections 1004, 1005, 1006, 1007, 1008 and 1010 of the International Building Code in addition to Sections Q106.5.1 through Q106.5.3.

Q106.5.1 Exit Discharge. Exits shall provide access to a public way, or to a safe dispersal area in accordance with 1028.5.

Q106.5.2 Means of Egress Lighting. The means of egress shall be illuminated when the space is occupied.

Exception: Sleeping areas.

Q106.5.3 Exit Signs. Exit signs shall be provided where the means of egress is not readily identifiable. Exit signs shall be permitted to be illuminated by the lighting provided in the structure.

Q106.6 Accessibility. A facility that is constructed to be accessible shall be maintained accessible during occupancy.

Q106.7 Temporary connection. The code official shall have the authority to authorize the temporary connection of the building or system to the utility, the source of energy, fuel, or power, or the water system or sewer system in accordance with Section 112. Water closets and lavatories shall be either permanent plumbing fixtures installed within the structure, or temporary water closets or lavatories, such as chemical toilets or other means approved by the code official.

Q106.7.1 Portable heating and cooling equipment. Portable heating and cooling equipment shall be used in accordance with their listing, and manufacturer's instructions.

Q107 Use Specific Standards.

Q107.1 Increased occupant load. Temporary waivers for allowing for additional occupants in existing building shall comply with Section Q107.1.1 through Q107.1.3.

Q107.1.1 Authorization. The code official is authorized to allow for an increase in the number of occupants or a change of use in a building or portion of a building during an emergency.

Q107.1.2 Maintenance of the means of egress. The existing a means of egress shall be maintained.

Q107.1.3 Sleeping areas. Where a space is used for sleeping purposes, the space shall be equipped with smoke alarms in accordance with Section 907.2.11 or be provided with a fire watch in accordance with Section 403.11.1 of the International Fire Code. Carbon monoxide detectors shall be installed in accordance with Section 915 where the structure uses any fossil fuel or wood burning appliances.

Q107.2 Temporary healthcare facilities. Temporary health care facilities shall comply with Section Q107.2.1 and Q107.2.2.

Q107.2.1 General. Temporary health care facilities shall be erected, maintained and operated to minimize the possibility of a fire emergency requiring the evacuation of occupants.

Q107.2.2 Membrane structures under projections. Membrane structures of less than 100 square feet (9.3 m²) may be placed under projections of a permanent building provided the permanent building is protected with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

Q107.3 Use of tiny houses or manufactured housing. Tiny houses or manufactured housing used for temporary housing shall comply with Section Q107.3.1 through Q107.3.5.

Q107.3.1 Fire separation distances. Tiny houses or manufactured housing shall be separated by not less than 5 feet (1524 mm) between structures.

Q107.3.2 Fire breaks. Tiny houses and manufactured housing shall not be located in groups of more than 20 units. Fire breaks of at least 20 feet (6096 mm) shall be provided between each group.

Q107.3.3 Smoke alarms. Tiny houses and manufactured housing used for sleeping purposes shall be equipped with a smoke alarm complying with Section 907.2.11. Smoke detectors are not required to be hard wired.

Q107.3.4 Carbon monoxide detectors. Carbon monoxide detectors shall be installed in accordance with Section 915, where the tiny house or manufactured housing uses any fossil fuel or wood burning appliances.

Q107.3.5 Structures located in a wildland urban interface zone. Tiny houses and manufactured housing that are located in a wildland urban interface area shall be provided with defensible space in accordance with the Section 603 of the International Wildland Urban Interface Code.

Q107.4 Tents and membrane structures used as sleeping accommodations. Tents or membrane structures used as sleeping accommodations shall comply with the same requirements as tiny homes in Section Q107.3.1 through Q107.3.5 and Chapter 31 of the International Fire Code.

Q107.5 Temporary emergency shelters during/after a natural disaster – wildfire, tornado, flood. Where emergency shelters are planned, the process of organizing, planning, implementing, and evaluating a program for mass evacuation, sheltering, and re-entry shall comply with NFPA 1660.

SECTION Q108 REFERENCED STANDARDS.

Q108.1 General. See Table Q108.1 for standards that are referenced in various sections of this appendix. Standards are listed by the standard identification with the effective date, standard title, and the section or sections of this appendix referenced in the standard.

Add new text as follows:

TABLE Q108.1
REFERENCED STANDARDS

<u>STANDARD ACRONYM</u>	<u>STANDARD NAME</u>	<u>SECTIONS HEREIN REFERENCED</u>
NFPA 550-2017	<u>Guide to the Fire Safety Concepts Tree</u>	<u>Q106.5.3</u>
NFPA 1660 - 2022	<u>Standard on Community Risk Assessment, Pre-Incident Planning, Mass Evacuation, Sheltering, and Re-entry Programs.</u>	<u>Q107.5</u>

Staff Analysis: A review of the standard proposed for inclusion in the code, NFPA 550-2017 and NFPA 1660-2022, 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 March 20, 2021.

Reason Statement: The purpose of the proposed Appendix is to provide regulatory options to users based on trends that don't fit squarely in the IBC. Code users are facing diverse challenges never encountered before. Examples include setting up medical facilities in gymnasiums, or in tents in a park or parking lot. With the wildfires in the Western United States, emergency temporary housing is needed for displaced residents, as well as First Responders from other areas who are providing assistance. The Appendix format allows for Jurisdictional adoption with or without amendments, creating solutions for these types of uses, providing the AHJ with wide flexibility while ensuring public health, safety and general welfare for the end users

There will be related proposals submitted in group B.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
These options mirror established ICC codes sections and standards.

P20-21

IPC: TABLE 403.1

Proponents: Eric Bressman, representing Ankrom Moisan Architects (ericb@ankrommoisan.com)

2021 International Plumbing Code

Revise as follows:

TABLE 403.1
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES^a (See Sections 403.1.1 and 403.2)

Portions of table not shown remain unchanged.

NO.	CLASSIFICATION	DESCRIPTION	WATER CLOSETS (URINALS: SEE SECTION 424.2)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410)	OTHER
			MALE	FEMALE	MALE	FEMALE			
7	Residential	Hotels, motels, boarding houses (transient)	1 per sleeping unit		1 per sleeping unit		1 per sleeping unit	—	1 service sink
		Dormitories, fraternities, sororities and boarding houses (not transient)	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		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
		<u>Occupants for normally occupied spaces other than dwelling units</u>	<u>1 per 150</u>	<u>1 per 75</u>	<u>1 per 200</u>		—	<u>1 per floor</u>	
		Congregate living facilities with 16 or fewer persons	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		One- and two-family dwellings and lodging houses with five or fewer guestrooms	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per dwelling unit
		Congregate living facilities with 16 or fewer persons	1 per 10		1 per 10		1 per 8	1 per 100	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 the *International Building 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 provision for privacy for the toilet room user is 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 classifications with an occupant load of 15 or fewer, service sinks shall not be required.
- f. The required number and type of plumbing fixtures for outdoor public swimming pools shall be in accordance with Section 609 of the International Swimming Pool and Spa Code.

Reason Statement: The current table does not take into account that many of the occupants of spaces other than the dwelling units, have access to plumbing fixtures in their units. Recognizing that some occupants won't live in the building, such as leasing agents and maintenance staff, a limited number of fixtures will be required. However, when determining the number of occupants using amenity spaces such as exercise rooms, social gathering spaces or other assembly areas the code should take into account that at least some portion of the occupants are likely to have access to their own bathrooms within the distance limits of Section 403.3.3

The factors proposed will result in a lower number of fixtures than Business or some Assembly uses, but is not so extreme that it would create delays for occupants, or over-use of the fixtures.

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

The lower plumbing fixture requirements will reduce construction costs for the fixtures and associated piping as well as the enclosing elements of the rooms.

PM8-21

IPMC: 304.18, 304.18.1

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Property Maintenance Code

304.18 Building security. Doors, windows or hatchways for *dwelling units*, room units or *housekeeping units* shall be provided with devices designed to provide security for the *occupants* and property within.

Revise as follows:

304.18.1 Doors. Doors providing access to ~~a~~an individual dwelling unit, rooming unit or housekeeping unit that is rented, leased or let ~~shall be~~ where equipped with a deadbolt lock, ~~the deadbolt lock shall be~~ designed to be readily openable from the side from which egress is to be made without the need for keys, special knowledge or effort and shall have a minimum lock throw of 1 inch (25 mm). Such deadbolt locks shall be installed according to the manufacturer's specifications and maintained in good working order. For the purpose of this section, a sliding bolt shall not be considered an acceptable deadbolt lock.

Reason Statement: The intent of this provisions is to remove a requirement in the IPMC that exceeds the IBC and the IEBC. IPMC Section 304.18.1 requires deadbolts on doors. The IBC does not require deadbolts on doors but allows for them in Section 1010.2.4. So once a building is constructed with doors that comply with Sections 716 for opening protectives, the question of altering the doors to provide deadbolts can be an issue. IEBC does not address adding locks. The proposal resolves a disconnect between the IBC and IPMC.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. Security locks are typically provided on these types of doors. The requirement for these not to be key operated is in IBC, so there is no change to requirements for the locks.

PM11-21

IPMC: (New), SECTION 310 (New), 310.1 (New), 310.2 (New), 310.3 (New), ICC Chapter 08 (New)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org); Marc Levitan, representing ICC 500 Storm Shelter Standard Committee (marc.levitan@nist.gov)

2021 International Property Maintenance Code

Add new definition as follows:

STORM SHELTER. A building, structure or portion thereof, constructed in accordance with ICC 500, designated for use during hurricanes, tornadoes or other severe windstorms.

Add new text as follows:

SECTION 310 STORM SHELTERS.

310.1 General. Community storm shelters shall be evaluated, maintained and repaired in accordance with this section and ICC 500.

310.2 Evaluation. Community storm shelters shall be evaluated annually, and when requested by the authority having jurisdiction, in accordance with ICC 500.

310.3 Maintenance and Repairs. Community storm shelters shall be maintained in an operable condition. All structural and operational elements shall be repaired or replaced in accordance with ICC 500 where damaged or found to be inoperable.

Add new standard(s) as follows:

ICC

International Code Council
500 New Jersey Avenue, NW 6th Floor
Washington DC 20001

500: ICC/NSSA Standard for the Design and Construction of Storm Shelters-2020

Reason Statement: The 2020 edition of ICC 500, which was incorporated by reference in the 2021 I-Codes, contains new provisions for the evaluation, maintenance and repair of community storm shelters. The owner or their authorized agent of a storm shelter are required to have the shelter evaluated annually and where requested by the authority having jurisdiction to identify whether any structural elements are damaged or whether any impact-protective systems (including doors, windows and shutters) are damaged or are not operational. Any structural elements or impact-protective systems are found to be damaged or not operational are required to be repaired or replaced in accordance with Section 113 of ICC 500. 2020 ICC 500:

SECTION 113

EVALUATION, MAINTENANCE AND REPAIRS

113.1 General.

Community shelters shall be evaluated and maintained in accordance with Sections 113.2 through 113.4.

113.2 Evaluation. The owner or owner's authorized agent shall evaluate the storm shelter annually and when requested by the *authority having jurisdiction*. The evaluation of the storm shelter shall include the following:

1. The *storm shelter envelope* shall be evaluated through visual observation to assess whether the walls and roofs are intact and undamaged.
2. *Impact-protective systems* shall be evaluated for compliance with the manufacturer's operational and maintenance requirements.

113.3 Maintenance and repairs. *Storm shelters* shall be maintained in an operable condition at all times. All structural and operational elements shall be repaired or replaced where damaged or found to be inoperable. **113.3.1 Damaged or missing components.** *Storm shelters* shall be maintained so that walls and roofs are intact and undamaged. Any damage to the storm shelter or its *impact-protective systems* that impair its functionality shall be repaired or replaced. Damaged or missing components shall be replaced with components that are specified within the tested or listed assembly. **113.3.2 Replacement assemblies and systems.** Where it is necessary to replace certified or listed *impact-protective systems*, replacements shall comply with applicable ICC 500 requirements and shall be tested and installed as required by this standard for new installations or construction. **113.4 Recordkeeping.** A record of the evaluations shall be maintained by the owner or owner's authorized agent. A record of the evaluations and any other tests, repairs or replacements and other operations and maintenance shall be kept on the premises or other *approved*

location and consist of all changes to the original *storm shelter envelope* or *impact-protective systems*. Records shall include the date and person conducting the evaluations and maintenance or repairs. The proposed IPMC storm shelter provisions trigger evaluations of community storm shelters in order to verify that they are able to continue protecting occupants from extreme wind events. Door assemblies in multi-use storm shelters are especially vulnerable to disrepair when used frequently for their 'normal use' functions (e.g., gym, classroom, auditorium). Observations of existing storm shelter door assemblies have revealed the following common maintenance issues that can result in operational failure during an extreme wind event: debris in floor latch points preventing full connection, rust, and malfunctioning hardware. The new ICC-500 provision is specific to community storm shelters. Residential storm shelters are excluded so as not to burden homeowners who choose to incorporate a small residential storm shelter into their home or provide one in their yard.

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

BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

The ICC 500 (Standard for the Design and Construction of Storm Shelters) development committee has held several virtual meetings during the last two years to develop the 2021 edition. In addition, there were numerous virtual Working Group meetings. All meetings included members of the committee as well as interested parties. Related documents and reports are posted on the ICC 500 website at ICC 500.

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

The cost increase would largely be from the time and labor for the owner (or their agent) to conduct the annual visual inspection and/or hire an engineer or architect if needed for a more detailed evaluation. There would also be a cost to replace a damaged component for an impact-resistant door or window, or other impact-protective system (e.g. hurricane shutter) or the entire assembly if deemed necessary.

PM15-21

IPMC: 404.6

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Property Maintenance Code

Revise as follows:

404.6 Efficiency unit. Nothing in this section shall prohibit an efficiency living unit from meeting the following requirements:

1. A unit occupied by not more than one *occupant* shall have a minimum clear floor area of 120 square feet (11.2 m²). A unit occupied by not more than two *occupants* shall have a minimum clear floor area of ~~220~~ 190 square feet (~~20.4~~ 17.6 m²). A unit occupied by three *occupants* shall have a minimum clear floor area of ~~320~~ 260 square feet (~~29.7~~ 24.1 m²). These required areas shall be exclusive of the areas required by Items 2 and 3.
2. The unit shall be provided with a kitchen sink, cooking appliance and refrigeration facilities, each having a minimum clear working space of 30 inches (762 mm) in front. Light and *ventilation* conforming to this code shall be provided.
3. The unit shall be provided with a separate *bathroom* containing a water closet, lavatory and bathtub or shower.
4. The maximum number of *occupants* shall be three.

Reason Statement: This proposal aims to correlate the minimum clear floor area requirements for efficiency dwelling units between the IPMC to that of the IBC. There was a similar proposal last cycle, G130-18 Part II. The proposal was rejected because of the inclusion for Type A and Type B unit, therefore, we removed that from the proposal.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

Cost Impact: The code change proposal will decrease the cost of construction. The correlation for the IPMC to match that of the IBC for occupied units, reduces the square footage for minimum clear floor area.

S10-21

IBC: (New), 1511.9 (New), 1511.9.1 (New), 1511.9.2 (New), 1511.9.3 (New), 1511.9.4 (New), 1511.9.5 (New), 1511.9.6 (New)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@icc-safe.org); Michael O'Brian, Chair, representing FCAC (fcac@icc-safe.org)

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

2021 International Building Code

Add new definition as follows:

RAISED-DECK SYSTEM. (For application to Chapter 15 only). A system consisting of decking or pavers supported by pedestals installed over a roof assembly to provide a walking surface.

Add new text as follows:

1511.9 Raised-deck systems installed over a roof assembly. *Raised-deck systems* installed above a *roof assembly* shall comply with Sections 1511.9.1 through 1511.9.5.

1511.9.1 Installation. The installation of a *raised-deck system* shall comply with all of the following:

1. The perimeter of the *raised-deck system* shall be surrounded on all sides by parapet walls or by a noncombustible enclosure approved to prevent fire intrusion below the *raised-deck system*. The parapet wall or enclosure shall extend above the plane of the top surface of the *raised deck system*.
2. A *raised-deck system* shall be installed above a listed roof assembly.

Exception: Where the roof assembly is not required to have a fire classification in accordance with Section 1505.2.

3. A *raised-deck system* shall be installed in accordance with the manufacturer's installation instructions.
4. A *raised-deck system* shall not obstruct or block plumbing or mechanical vents, exhaust, or air inlets.

1511.9.2 Fire classification. The *raised-deck system* shall be tested, listed and labeled with a fire classification in accordance with Section 1505. The fire classification of the *raised deck system* shall be not less than the fire classification for the *roof covering* over which it is installed.

Exception: Where the top surface of the raised deck system consists of brick, masonry or concrete materials, a fire classification is not required.

1511.9.3 Pedestals or supports. The pedestals or supports for the *raised deck system* shall be installed in accordance with manufacturer's installation instructions.

1511.9.4 Structural requirements. The *raised-deck system* shall be designed for wind loads in accordance with Chapter 16 and Section 1504.5. The *raised-deck system* shall be designed for seismic loads in accordance with Chapter 16.

1511.9.5 Roof drainage. The *raised-deck system* shall not impede the operation of the roof drainage system as required by Section 1502 and the *International Plumbing Code*.

1511.9.6 Access and Egress. Access to the *raised-deck system* shall be in accordance with Chapter 11 and egress shall be in accordance with Chapter 10.

Reason Statement: Currently the IBC does not have any specific provisions for the design and installation of raised-deck systems. These provisions should be a subsection to Section 1511 because these systems are a roof structure over a roof assembly. A definition of "raised deck systems" is needed to ensure correct application of new requirements for these systems. This term is applicable only to Chapter 15 (same "Chapter 15 restriction" as the definition for roof assembly).

Fire test requirements for the raised deck systems are based on research studies performed for PV panels on low and steep-sloped roofs; which have general applicability to Raised Deck Systems. The following is a link to the reports for those studies:

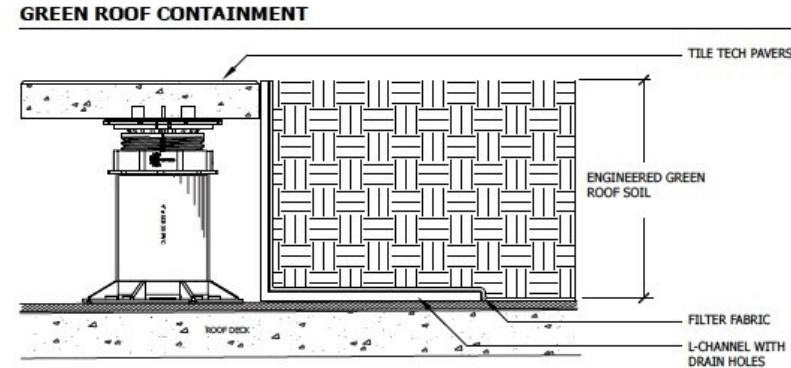
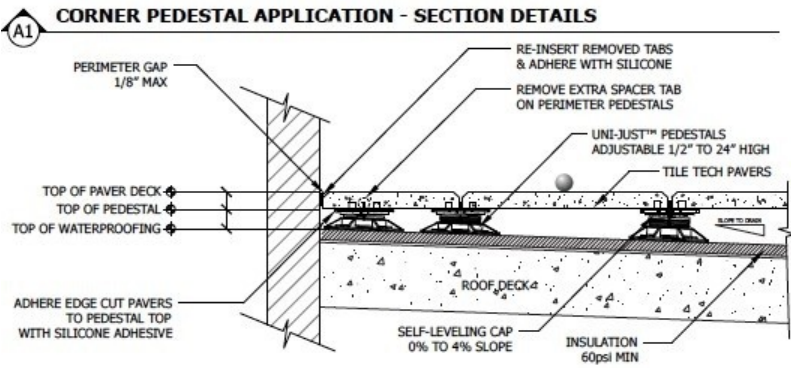
<http://www.solarabcs.org/about/publications/reports/flammability-testing/index.html>. These studies showed that when fire was able to enter the space between the roof assembly and the panel above, it could significantly alter the original test results for the fire classification of the roof assembly. By providing a protective barrier at the perimeter such as a parapet wall, roof curb or intersection with vegetative roof to prevent fire intrusion into the space, there would not be any concern with affects to the fire classification of the roof assembly underneath.

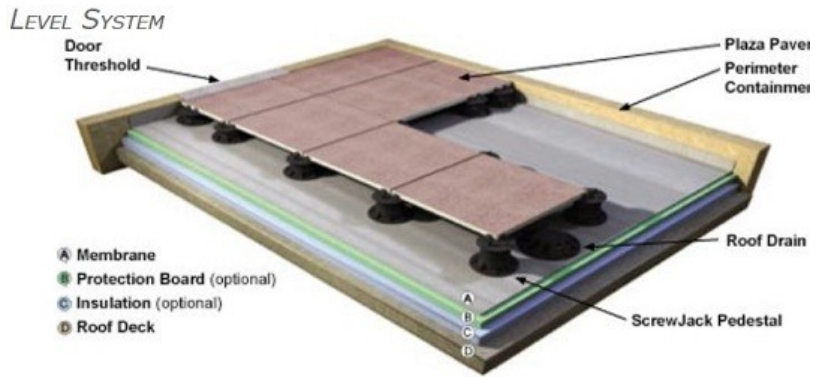
The manufacturer's installation instructions cover how the pedestals and supports are to be installed for these systems.

Three pointers (code references) for structural; roof water drainage; and access and egress are provided to ensure that these other safety and performance requirements essential for roofs are applied to Raised Deck Systems. The pictures included with this code change illustrate examples

of what a typical raised deck system consists of, including a photograph of an actual rooftop pool deck, two cross-sections of a typical raised deck system, and an isometric view of the typical components.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.





Cost Impact: The code change proposal will increase the cost of construction. The code change will increase the cost of construction, for those who decide to install these types of systems. However, this provides clarity on what requirements are to be applied for these installations.

Z1-21

IZC: (New), 501.1, TABLE 801.2.1, 801.2.3, 801.2.3.1 (New), SECTION 903 (New), 903.1 (New), 903.1.1 (New), 903.1.2 (New), 903.2 (New)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Zoning Code

Add new definition as follows:

ACCESSORY DWELLING UNIT (ADU). An additional, subordinate dwelling unit on the same lot, that is entirely within a dwelling unit, attached to a dwelling unit, or in a detached structure.

Revise as follows:

501.1 Residential zone. Allowable residential (R) zone uses shall be:

Division 1. The following uses are permitted in an R, Division 1 zone: Single-family dwellings, publicly owned and operated parks, recreation centers, swimming pools and playgrounds, police and fire department stations, public and governmental services, public libraries, schools and colleges (excluding colleges or trade schools operated for profit), public parking lots, *private garages*, buildings accessory to the above permitted uses (including private garages, accessory dwelling units and *accessory living quarters*), and temporary buildings.

Division 2. The following uses are permitted in an R, Division 2 zone:

Any use permitted in R, Division 1 zones and two-family dwellings.

Division 3. The following uses are permitted in an R, Division 3 zone:

All uses permitted in R, Division 2 zones, multiple-unit dwellings, such as apartment houses, boarding houses, condominiums and *congregate residences*.

**TABLE 801.2.1
OFF-STREET PARKING SCHEDULE**

USE	NUMBER OF PARKING SPACES REQUIRED
Assembly	1 per 300 gross square feet
Accessory dwelling unit (ADU)	1 per accessory dwelling unit
Dwelling unit	2 per dwelling unit
Health club	1 per 100 gross square feet
Hotel/motel	1 per sleeping unit plus 1 per 500 square feet of common area
Industry	1 per 500 gross square feet
Medical office	1 per 200 gross square feet
Office	1 per 300 gross square feet
Restaurant	1 per 100 gross square feet
Retail	1 per 200 gross square feet
School	1 per 3.5 seats in assembly rooms plus 1 per faculty member
Warehouse	1 per 500 gross square feet

For SI: 1 square foot = 0.0929 m².

801.2.3 Location of on lot. The parking spaces required by this code shall be provided on the same lot as the use or where the exclusive use of such is provided on another lot not more than 500 feet (152 m) radially from the subject lot within the same or less-restrictive zoning district.

Add new text as follows:

801.2.3.1 Accessory dwelling unit parking. Vehicular access to the required parking space shall not be obstructed by the parking space for the occupants of the primary dwelling unit.

SECTION 903 ACCESSORY DWELLING UNITS (ADU).

903.1 General. Accessory dwelling units shall be permitted in residential zones.

903.1.1 Approval. Applications for an ADU are subject to the requirements for a conditional use permit as per Chapter 12 and shall meet the following criteria:

1. The applicant must demonstrate that the ADU complies with all development and design standards of this Section.
2. The applicant must demonstrate that the proposed new construction or modifications to existing construction comply with the applicable building and fire safety codes.

903.1.2 Occupancy permit, control. No occupancy of the ADU shall take place without an occupancy permit issued by the code official appointed by the authority having jurisdiction. The initial occupancy permit shall remain in force for a period of 2-years from the date of issue, provided that there is continued ownership. Thereafter, succeeding permits may be issued by the code official for each succeeding 2-year period, provided that the structure and use continue to comply with the relevant provisions of Section 903, the building and fire safety codes, and the conditional use special permit. Occupancy permits shall not be transferable upon new ownership or a change in occupancy.

903.2 Conditions. ADUs shall be permitted without requiring a change of zoning where in compliance with all of the following:

1. Only one ADU shall be permitted for each primary dwelling unit.
2. The owner of a property containing an ADU shall reside in either the primary dwelling unit or the ADU, as of the date of permit approval.
3. An ADU shall have a separate house number from the primary dwelling unit.
4. ADUs shall be secondary in size and function to the primary dwelling unit and shall comply with all of the following limits.
 - 4.1. Not less than 190 square feet (17.65 m²) in area.
 - 4.2. Not more than 50 percent of the area of the primary dwelling unit.
 - 4.3. Not more than 1,200 square feet (111 m²) in area.
5. An ADU shall be provided with a separate entrance than that serving the primary dwelling unit.
6. An ADU shall have a maximum number of two bedrooms.
7. Off-street parking shall comply with Section 801.

8. The location of a detached ADU shall comply with Section 803.

9. An ADU shall be provided with adequate provisions for electricity, water supply and sewage disposal.

Reason Statement: Accessory dwelling unit (ADU) is a term already in use across the United States – including Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, the District of Columbia, Florida, Hawaii, Idaho, Illinois, Indiana, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Hampshire, North Carolina, Ohio, Oregon, Pennsylvania, Tennessee, Texas, Utah, Vermont, Virginia, Washington, and Wisconsin. However, the definition of an ADU and associated code requirements vary significantly not only state to state, but from jurisdiction to jurisdiction. The International Zoning Code (IZC) should provide definition and framework of requirements in an effort to create a uniform understanding of ADUs. It is also important to note the lack of building and codes standards has created circumstances where the requirements are being determined through local and state legislative processes, instead of ICC's code change process, which is a consensus process driven by the knowledge and experience of code officials.

This code change proposal does not address requirements associated with life safety, nor how to construct a new ADU, nor how to renovate an existing structure to add an ADU; those requirements must be codified in the IBC, IRC, and IEBC through separate proposals in their respective code development cycles. The following explanations provide context for these definitions and IZC requirements.

Two definitions are created, the first recognizing the common parlance of an Accessory Dwelling Unit (ADU) and pointing to the second definition, which describes the use more accurately as a subset of a dwelling unit, and positions it next to the dwelling unit definition.

The content of the definition for an ADU was developed based on similarities found in existing Zoning ordinances in effect around the United States, and distinguishing the difference between an ADU and a Two-Family Dwelling; i.e., the subordinate nature of the size and function to the primary or second dwelling unit. Though subordinate is not a defined term in Chapter 2, there is precedent in the I-Codes for using the term (Refer to Accessory Building – “an incidental subordinate building...” and Home Occupation – “the partial use of a home for commercial or nonresidential uses by a resident thereof, which is subordinate and incidental...”)

The definition is intended for integration throughout the I-Codes, as further code development cycles address specific code regulations for the IBC, IEBC, and IRC depending on the type of ADU proposed. This definition recognizes that an ADU features the same components of a dwelling unit in terms of living, sleeping, eating, cooking and sanitation which presently can only be defined in the I-Codes as a dwelling unit. The reality is that the application of the ADU concept in different jurisdictions is inconsistent, and at times may allow deviation from the full requirements the code prescribes for a two-family dwelling unit arrangement. It is necessary to recognize the unique circumstances wherein an ADU must comply with those two-family dwelling unit requirements, and when alternative arrangements are acceptable that do not compromise the health, safety, and welfare of the Public. The definition also recognizes that the ADU can either be within the primary dwelling unit (such as in the basement of a single-family home) or a detached accessory structure (similar to a detached garage).

The definition avoids non-enforceable provisions such as if the ADU is rented, the relationship between the person(s) in the ADU and the primary dwelling, and characteristics that would preclude placement within the IBC, IEBC, IRC, and IZC.

The additional language in Chapter 5 recognizes that an ADU can be created within any residentially zoned parcel, regardless of whether that is in a single-family (Division 1), two-family (Division 2), or multi-family (Division 3) zone. In practice there are examples of ADUs being subordinate to single-family dwellings (the most common example), one or both units of a two-family dwelling (less common), within Townhouses (3-stories or less), and within Townhouses (4 stories). It is ultimately the responsibility of the IBC, IEBC, an IRC to regulate ADU design within those contexts.

The off-street and on-lot parking requirements are proposed as 1 per ADU. Where the code requires two parking spaces per dwelling unit, the subordinate use (the ADU) is lesser in size than the primary dwelling (see 903.2). There is debate about the impact on parking demands in existing neighborhoods, so requiring some parking but not at the same level as the primary dwelling unit was determined the best option to address all concerns (source: <https://accessorydwellings.org/2014/07/16/do-adus-cause-neighborhood-parking-problems/>).

Section 903 creates conditions to ensure that an ADU is subordinate to the primary dwelling unit.

Section 903.1.2 occupancy permit, control proposes a two-year renewal cycle for the occupancy permit and renewal upon sale of the property. This is to allow for regular, routine inspections of the ADU as well as ensuring any new owner understands the requirements and restrictions of the ADU.

Section 903.2 conditions propose nine (9) requirements that ensure the ADU does not become a “duplex” or second single-family home on the same lot. Should these conditions not be met, the proposed ADU must be remain considered as a separate dwelling unit with all applicable regulations of the IBC, IEBC, or IRC in effect.

- Item 1 re-affirms the subordinate nature of the ADU to the primary dwelling unit;
 - Item 2 establishes an Owner-occupancy requirement;
 - Item 3 requires a separate address for the ADU from the primary unit.
 - Item 4 sets size parameters for the ADU.
-
- The minimum square footage of 190 SF aligns with the IBC minimum for an efficiency unit.
 - The maximum size is based on a comparison of requirements in effect in CO, OR, MA, CA, and VA which ranged from 750 SF to 1,400 SF;

most between 1,000 SF and 1,200 SF.

- A similar comparison between percentages of the primary unit showed 30% to 50% with more jurisdictions favoring the higher value.
- Item 5 requires a separate entrance to prevent a house that has a second kitchen (such as a recreation room in a basement with a cooking area), but are not an ADU from being mandated to meet the ADU requirements.
- Item 6 limits the unit to two bedrooms to minimize parking demands while still allowing the ADU to address housing market demands and cost concerns.
- Item 7 is a pointer to the parking requirements in Section 801.
- Item 8 is a pointer to the multiple buildings on a single lot requirements of Section 803.
- Item 9 recognizes the need for an ADU to have adequate utilities.

The BCAC is working on a proposal to add accessory dwelling units in the IEBC and IRC Group B proposals.

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

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

The proposal creates an allowance whereby a someone can build an accessory dwelling unit within a residentially zoned district, where it would otherwise not be permitted. No one is under any obligation to build an ADU, nor are they required to plan for the construction of a future ADU.

For someone choosing not to construct an ADU where these code provisions will not be applicable, there are no cost implications.

For someone choosing to construct an ADU where these code provisions are applicable, the cost of construction will increase proportionally to the size of the project, and to create additional off-street parking. According to an article titled Calculating the Costs of Building an ADU published on the BuildinganADU.com blog, the average cost for an ADU from 2016-2019 based on their research is as follows:

- Detached New Construction: \$305/SF
- Basement ADU: \$265/ SF
- Attached ADU: \$300/ SF
- Garage Conversion: \$297/ SF
- Detached New Construction Above a Garage: \$212/ SF