

IBC — Egress



2021 GROUP A PROPOSED CHANGES TO THE I-CODES

April 11 – May 5, 2021
Virtual Committee Action Hearings

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2021 GROUP A – PROPOSED CHANGES TO THE INTERNATIONAL BUILDING CODE – MEANS OF EGRESS

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TENTATIVE ORDER OF DISCUSSION 2021 PROPOSED CHANGES TO THE INTERNATIONAL BUILDING CODE – EGRESS

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

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

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E1-21

IBC: 1003.1 (IFC:[BE] 1003.1)

Proponents: John-Jozef Proczka, representing self (john-jozef.proczka@phoenix.gov)

2021 International Building Code

Revise as follows:

1003.1 Applicability. The general requirements specified in Sections 1003 through 1015 shall apply as individually scoped and to all three elements of the *means of egress* system, in addition to those specific requirements for the *exit access*, the *exit* and the *exit discharge* detailed elsewhere in this chapter.

Reason Statement: The provisions for ladders in 1011.16 do not serve as a component of the *means of egress*, but are individually scoped in Section 1011.1 to be a code requirement nonetheless.

The provisions for guards in sections 1015.2, 1015.6, 1015.7 all apply to locations that are not parts of the *means of egress*, but are individually scoped in Section 1015.1

This proposal is providing clarity at the start of Chapter 10 that although the provisions of the chapter primarily apply to the *means of egress* there is scoping in its provisions that applies outside of the *means of egress*.

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

E1-21

E2-21

IBC: 1003.3.3, 1005.7.2, 1014.8 (IFC:[BE]1003.3.3, 1005.7.2, 1014.8)

Proponents: Jeff Perras, Code Red Consultants, LLC, representing Code Red Consultants, LLC (jeffp@crcfire.com)

2021 International Building Code

Revise as follows:

1003.3.3 Horizontal projections. Objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finished floor shall not project horizontally more than 4 inches (102 mm) into the *circulation path*.

Exception: ~~Handrails are permitted to protrude 4½ inches (114 mm) from the wall or guard~~ complying with Section 1005.7.2.

1005.7 Encroachment. Encroachments into the required *means of egress* width shall be in accordance with the provisions of this section.

Revise as follows:

~~1014.8~~ **1005.7.2 Handrail projections** ~~Projections.~~ On ramps and on ramped aisles that are part of an accessible route, the clear width between handrails shall be 36 inches (914 mm) minimum. Projections into the required width of aisles, stairways and ramps at each side shall not exceed 4½ inches (114 mm) at or below the handrail height. ~~Projections into the required width shall not be limited above the minimum headroom height required in Section 1011.3.~~ Projections due to intermediate handrails shall not constitute a reduction in the egress width. Where a pair of intermediate handrails are provided within the stairway width without a walking surface between the pair of intermediate handrails and the distance between the pair of intermediate handrails is greater than 6 inches (152 mm), the available egress width shall be reduced by the distance between the closest edges of each such intermediate pair of handrails that is greater than 6 inches (152 mm).

~~1005.7.2~~ **1005.7.3 Other projections.** ~~Handrail projections shall be in accordance with the provisions of Section 1014.8.~~ Other nonstructural projections such as trim and similar decorative features shall be permitted to project into the required width not more than 1½ inches (38 mm) on each side.

Exception: Projections are permitted in corridors within Group I-2, Condition 1 in accordance with Section 407.4.3.

~~1005.7.3~~ **1005.7.4 Protruding objects.** Protruding objects shall comply with the applicable requirements of Section 1003.3.

Staff Note: Proposals to E2-21 and E12-21 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: Section 1014.8 contains numerous requirements that are addressed in other areas of the code. Section 1003.3.4 prohibits protruding objects from reducing the minimum clear width of an accessible route (which covers handrails). The allowance to have projections into a stair at or below the handrail height addresses other items, such as stringers, and should not be located in Section 1014. Projections are only regulated below 80 inches, so there is no need to regulate projections above 80 inches within a stair (which is also not in reference to handrails, so it should not be located in Section 1014). The impacts of intermediate handrails on egress widths should not be located in Section 1014, but rather 1005. Lastly, Section 1003.3.3 limits projections to 4" in circulation paths while Section 1014.8 allows projections up to 4½" in aisles, stairs and ramps. Circulations paths by definition can include aisles, stairs and ramps, so these sections should be coordinated. This code change proposes to relocate the various code requirements in Section 1014.8 to their appropriate sections for coordination and clarity purposes.

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

E2-21

E3-21

IBC: 1003.4, 1003.4.1 (New), ANSI Chapter 35 (New) [IFC:[BE]1003.4, 1003.4.1 (New), ANSI Chapter 80 (New)]

Proponents: Bill Griese, Tile Council of North America, representing Tile Council of North America (bgriese@tileusa.com); Scott Conwell, International Masonry Institute, representing International Masonry Institute

2021 International Building Code

Revise as follows:

1003.4 Slip-resistant surface. Circulation paths of the *means of egress* shall have a slip-resistant surface and be securely attached.

Add new text as follows:

1003.4.1 Hard surface flooring. Slip-resistant ceramic tile, terrazzo, natural stone, and polished concrete flooring used in circulation paths of the means of egress shall be specified in accordance with ANSI A326.3. Conformance to ANSI A326.3 shall be indicated on product packaging, within product literature, within the construction documents, or by measurement per ANSI A326.3 after flooring installation.

Add new standard(s) as follows:

ANSI

American National Standards Institute
25 West 43rd Street, Fourth Floor
New York NY 10036

ANSI A326.3-2017: American National Standard Test Method for Measuring Dynamic Coefficient of Friction of Hard Surface Flooring Materials

Staff Analysis: A review of the standard proposed for inclusion in the code, ANSI A326.3-17, 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: Currently, Section 1003.4 requires that circulation path surfaces of the means of egress be “slip-resistant,” but no method of measurement, quantitative threshold, nor general principles to help the specifier, end-user and code official are provided. Given the Code’s lack of criteria for the term “slip-resistant,” materials are sometimes inappropriately specified causing accidents to occur in circulation paths of the means of egress. This can be especially dangerous for emergency responders who are entering a building for the first time, potentially under conditions with water and limited visibility (smoke).

The purpose of this revision is to provide slip resistance criteria for hard surface flooring used in circulation paths of the means of egress. The proposed reference standard, ANSI A326.3, sets forth a quantitative minimum threshold, means of measurement, and general principles regarding slip resistance for hard surface flooring and is widely specified for ceramic tile, polished concrete, terrazzo, and natural stone. This would provide clarity, safety, and transparency with no increased cost of construction.

This proposal is being submitted by Tile Council of North America (TCNA) and the International Masonry Institute (IMI), with the support of many other organizations.

Previously, slip resistance for ceramic tile was standardized solely by ANSI A137.1 American National Standard Specifications for Ceramic Tile. In 2012, a proposal (S222-12) was approved which removed ANSI A137.1 from Section 2103 of the Code (previously, Section 2103.6) in an effort to consolidate masonry-based specification references. An unintended consequence of this change was that the Code was subsequently left with no slip resistance criteria for ceramic tile, much less stone, terrazzo, or concrete.

In 2015, a proposal (E3-15) was made to reintroduce the slip resistance provisions of ANSI A137.1 into the Code. Given that these provisions were being widely adopted and specified for flooring types beyond just ceramic tile, the scope of the proposal included other hard surface flooring types with the support of each respective industry. The proposal was met with positive feedback from the Means of Egress Committee, but was ultimately disapproved since the proposed reference standard was limited to ceramic tile. At the time, the Committee encouraged the proponents to collaborate on a stand-alone slip resistance specification which covered all hard surface flooring types and return in 2018 with a proposal.

The work suggested by the Committee in 2015 was completed for all hard surface flooring and standardized in ANSI A326.3, which includes standard test sample size and methodologies for laboratory and field conditions. This standard is widely understood for hard surface flooring and specified throughout the architectural community with hard surface manufacturers/suppliers/installers regularly providing the information needed by code officials as part of standard product submittals and information. In 2018, a proposal (E2-18) was made to revise Section 1003.4 to reference ANSI A326.3 for slip-resistant hard surface flooring, to clear-up ambiguity around the requirement for “slip-resistant” circulation path surfaces, facilitate increased safety and ease-of-specification, and codify the slip resistance standard which is most predominately used today for hard surface flooring. Again, the proposal was met with positive feedback but disapproved based on the following concerns primarily raised by the Committee: 1) lack of description regarding types of “hard surfaces” encompassed by the proposal, and 2) uncertainty regarding mechanisms for conformance communication, especially where product packaging or literature has been discarded or where flooring has been manufactured in situ.

The current 2021 proposal for the 2023 IBC addresses the 2018 Committee’s primary concerns by: 1) directly stating “ceramic tile, terrazzo, natural

stone, and polished concrete” as the types of hard surface flooring to which the proposal applies—these are the four flooring types for which there is broad industry adoption of ANSI A326.3, and 2) clarifying where conformance to ANSI A326.3 is indicated—on product packaging, within product literature, within project documentation, or per field measurement.

ANSI ASC A108, the committee which developed ANSI A326.3, represents a broad range of stakeholders, including the Construction Specifications Institute (CSI), Natural Stone Institute (NSI), National Association of Homebuilders (NAHB), Underwriter Laboratories (UL), National Terrazzo & Mosaic Association (NTMA), National Tile Contractors Association (NTCA), Tile Council of North America (TCNA), and 57 additional stakeholders (for a total of 64).

A copy of ANSI A326.3 has been attached to this proposal and is also easily accessible online for free via www.TCNAtile.com.

Bibliography: [TCNA Tile Initiative] [Research Supporting an American National Standard for Slip Resistance] [Eric Astrachan] [2016] [Pages 2 - 9] [http://www.tcnatile.com/images/pdfs/Rsch_suptng_ANSI_std_slip_resist_TCNA_TI_Mar-2016.pdf]

[Slip and Fall Study Report: Enhancing Floor Safety Through Slip Resistance Testing, Maintenance Protocols and Risk Awareness] [CNA Financial Corporation] [2017]

[http://www.tcnatile.com/images/pdfs/CNA_Risk_Control_Slip_and_Fall_Report_Final.pdf]

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

Hard surface flooring that meets or exceeds the criteria specified in the ANSI A326.3 standard is not different in price from hard surface flooring that is below the threshold criteria.

E4-21

IBC: 1003.5 (IFC:[BE]1003.5)

Proponents: John-Jozef Proczka, representing self (john-jozef.proczka@phoenix.gov)

2021 International Building Code

Revise as follows:

1003.5 Elevation change. Where changes in elevation of less than 12 inches (305 mm) exist in the *means of egress*, sloped surfaces shall be used. Where the slope is greater than one unit vertical in 20 units horizontal (5-percent slope), *ramps* complying with Section 1012 shall be used. Where the difference in elevation is 6 inches (152 mm) or less, the *ramp* shall be equipped with either *handrails* or floor finish materials that contrast with adjacent floor finish materials.

Exceptions:

1. Steps at exterior doors complying with Section 1010.1.4.
2. A *stair* with a single riser or with two risers and a tread is permitted at locations not required to be *accessible* by Chapter 11 where the risers and treads comply with Section 1011.5, the minimum depth of the tread is 13 inches (330 mm) and not less than one *handrail* complying with Section 1014 is provided within 30 inches (762 mm) of the centerline of the normal path of egress travel on the *stair*.
3. A step is permitted in *aisles* serving seating that has a difference in elevation less than 12 inches (305 mm) at locations not required to be *accessible* by Chapter 11, provided that the risers and treads comply with Section 1030.14 and the *aisle* is provided with a *handrail* complying with Section 1030.16.
4. Exterior decks, patios and walkways that have a single change in elevation of 7 inches (178 mm) maximum where the landing depth on each side of the change of elevation is 48 inches (1220 mm) or greater.

Throughout a *story* in a Group I-2 occupancy, any change in elevation in portions of the *means of egress* that serve nonambulatory persons shall be by means of a *ramp* or sloped walkway.

Reason Statement: The very common occurrence of an exit door leading onto a sidewalk, patio, or other concrete surface that then requires a step down to an asphalt surface along the path of exit discharge should be recognized in the code, where that path of exit discharge is not required to be an accessible means of egress.

The other exceptions to this section that already exist do not adequately address this scenario, as this step is not exactly at the exterior door, as allowed by exception 1. It also does not have a handrail as required by exception 2, and is not an aisle as allowed by exception 3.

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

This exception will recognize a method of construction that is widely used, and already frequently interpreted to be compliant.

E4-21

E5-21

IBC: 1004.2 (IFC:[BE]1004.2)

Proponents: Joseph Summers, representing ICC Region VI

2021 International Building Code

Revise as follows:

1004.2 Cumulative occupant loads. Where the path of egress travel includes intervening rooms, areas or spaces, cumulative *occupant loads* shall be determined in accordance with ~~this section~~ Sections 1004.2.1 through 1004.2.3.

Exception: Accessory use areas which ordinarily are used only by persons who occupy the main areas of an occupancy shall be provided with exits as though they are completely occupied, but their occupant load need not be included in computing the total occupant load of the building.

Reason Statement: When following the requirements as they are in many situations the occupant load is over inflated since an occupant cannot occupy more than one area at a time. An example would be an auditorium. As currently worded the occupants of both the auditorium and lobby would be included in the building occupant load when in actuality the occupants of the lobby will be occupying the auditorium. This exception would account for situations such as this and would not include the occupant loads of toilet rooms and other similar spaces. This exception was part of the 1994 Uniform Building Code.

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

The cost of construction should be reduced since adding this exception could reduce the number of required plumbing fixtures and the number of egress doors required

E5-21

E6-21

IBC: 1004.5 (IFC:[BE] 1004.5)

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

2021 International Building Code

Revise as follows:

1004.5 Areas without fixed seating. The number of occupants shall be computed at the rate of one occupant per unit of area as prescribed in Table 1004.5. For areas without *fixed seating*, the *occupant load* shall be not less than that number determined by dividing the floor area under consideration by the *occupant load* factor assigned to the function of the space as set forth in Table 1004.5. Where an intended function is not *listed* in Table 1004.5, the *building official* shall establish a function based on a *listed* function that most nearly resembles the intended function.

~~Exception~~ **Exceptions:**

1. Where approved by the building official, the actual number of occupants for whom each occupied space, floor or building is designed, although less than those determined by calculation, shall be permitted to be used in the determination of the design occupant load.
2. Where approved by the building official, the actual number of occupants for access-controlled areas, although less than those determined by calculation, shall be permitted to be used in the determination of the design occupant load.

Reason Statement: Access-controlled areas are not accessible by persons who are not authorized to enter. Many access control systems log the entry and exit of occupants, and when those data are available, such historical data should be the bases for the determination of the maximum occupant load.

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

This will not affect or will lower the cost of construction in almost all cases, because the maximum occupant load based on historical data will almost always be less than the occupant load calculated in accordance with Table 1004.5.

E6-21

E7-21

IBC: SECTION 202 (New), TABLE 1004.5 (IFC:[BE] SECTION 202 (New), TABLE 1004.5)

Proponents: Dave Frable, representing Self (dave.frable@gsa.gov)

2021 International Building Code

Add new definition as follows:

COLLABORATION ROOM, Business Use Area. A small room primarily used by occupants to transition temporarily from their regular workstation area in order to obtain privacy and to avoid disturbing other employees located in the open office environment. These rooms have been commonly referred to as quiet rooms, focus rooms, huddle rooms, and team rooms. Collaboration rooms are not considered conference rooms, since a conference room's principal function is to be used for assembly purposes.

Revise as follows:

TABLE 1004.5
MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT

Portions of table not shown remain unchanged.

FUNCTION OF SPACE	OCCUPANT LOAD FACTOR ^a
Business areas	150 gross
Concentrated business use areas	See Section 1004.8
<u>Collaboration rooms, business use areas, less than or equal to 450 ft² in area</u>	<u>30 gross</u>
<u>Collaboration rooms, business use areas, greater than 450 ft² in area</u>	<u>15 gross</u>

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m².

a. Floor area in square feet per occupant.

Reason Statement: This code change proposes to add a new addition to Table 1004.5 for business areas to address collaboration rooms which are now commonly being located in open office space environments in office buildings. Businesses currently operating in predominantly open office environments tend to need more collaboration rooms for private meetings between staff, both for small personnel meetings and team meetings, etc. Based on our experience, many questions have arisen concerning these types of designs in open office space environments in Federally-owned buildings regarding how the design team should calculate the occupant loads for these types of proposed space uses.

Concerns have also been raised regarding the appropriateness of using the current occupant load factors in the IBC, for these types of rooms. In addition, there have been different interpretations among A/E firms, fire protection engineer consultants, and AHJs regarding how these specific rooms identified on drawings are to be utilized by building occupants.

The terminology used for these types of rooms identified on design drawings also has been an issue since this terminology is not referenced or described in any national code or standard. For example, rooms and spaces have been identified on design drawings as huddle rooms, quiet rooms, focus rooms, etc. Therefore, it is our opinion that Table 1004.5 currently does not adequately address these types of rooms in open office space environments.

To address the concerns and questions, we have proposed alternative occupant load

factors for collaboration rooms. The proposed revision is based on a small field evaluation study of several collaboration rooms having posted occupant loads based on an analysis of the efficiency of use of the space when occupied. That is, having a space with ample room so occupants do not feel cramped and elbow to elbow. It was determined that the occupant load factors for a specific room size corresponding to the posted occupant loads ranged between 28 ft /person to 32 ft /person. Therefore, a mean average occupant load factor of 30 ft /person for collaboration rooms/spaces seemed reasonable and was chosen. In addition, since these collaboration rooms are used primarily for private meetings between staff, both for small personnel meetings and team meetings, etc. it was felt that the size of these rooms should be limited to address concerns these rooms will be used as conference rooms. Therefore, based on a review of a number of proposed space layouts having collaboration rooms, it seemed reasonable to limit the size of these rooms to less than or equal to 450 ft in area when using an occupant load factor of 30 ft /person.

Please remember, these specific rooms/spaces are primarily used by employees to transition temporarily from their regular work-station area in order to obtain privacy and/or to avoid disturbing other employees located in the open office environment. These rooms are not designated as conference rooms and typically are not used for conference rooms and therefore should not be compelled to comply with the more conservative occupant load factors associated with Assembly Use areas. However, currently the IBC does not specifically address an occupant load factor for these types of rooms. Therefore, some AHJs have classified these rooms, regardless of size, as Assembly Use areas and have interpreted that the occupant load factors currently in the IBC require that these rooms are compelled to use the occupant load factor of 15ft /person. Based on our personal experience reviewing space layouts that have incorporated various sized collaboration rooms and the fact that these rooms are primarily only used by employees to transition temporarily from their regular work-station area in order to obtain privacy and/or to avoid disturbing other employees located in the open office environment, we believe these rooms should not be compelled to comply with the more conservative occupant load factors associated with Assembly Use areas since these rooms are not used as conference rooms.

In summary, we believe the proposed new occupant load factor for business areas collaborative rooms will not negatively impact the overall safety for building occupants as it relates to the use of the building's means of egress systems during an emergency. In addition, the acknowledgement of collaborative rooms should also improve design consistency in calculating the occupant loads for these types of work environments as well as providing nationwide consistency among AHJs in the interpretation/enforcement of the appropriate occupant load factor to use for these types of rooms.

Lastly, please note that the National Fire Protection Association 101, Life Safety Code (2018 edition), has similar requirements to address business use collaboration rooms.

Bibliography: National Fire Protection Association (NFPA), 101, Life Safety Code, 2018

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

The code change proposed may decrease the cost of construction since collaboration rooms/spaces are primarily only used by employees to transition temporarily from their regular work-station area in order to obtain privacy and/or to avoid disturbing other employees located in the open office environment. Therefore, if these rooms are compelled to comply with the more conservative occupant load factors associated with Assembly Use areas, the total calculated number of occupants on a floor of the building would increase and may necessitate extra wider exit stairs or additional exit stairs.

E7-21

E8-21

IBC: TABLE 1004.5 (IFC:[BE] TABLE 1004.5)

Proponents: Stephen Thomas, Colorado Code Consulting, a Shums Coda Assoc Company, representing Colorado Chapter ICC (sthomas@coloradocode.net); Timothy Pate, representing Colorado Chapter Code Change Committee (tpate@broomfield.org)

2021 International Building Code

Revise as follows:

**TABLE 1004.5
MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT**

Portions of table not shown remain unchanged.

FUNCTION OF SPACE	OCCUPANT LOAD FACTOR ^a
Business areas	150 gross
<u>Conference Rooms</u>	<u>30 gross</u>
Concentrated business use areas	See Section 1004.8

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m².

a. Floor area in square feet per occupant.

Reason Statement: Calculating the occupant load has always been an issue for design professionals and code officials. There is a theory about non-simultaneous use of the space where if employees are in the conference room, they are not in their office. However, the discussion centers around the fact that people from outside the business may be coming into the facility. This proposal addresses this issue by increasing the occupant load factor to the same value as the concentrated business factor. It is very common for conference rooms to have large tables in the middle of the room that takes up floor area that cannot be occupied. By changing the occupant load factor, we can address this issue as well. This proposal will also assist in determining the number of exits or exit access doors from a tenant space and provide a more reasonable approach to tenant space design.

Cost Impact: The code change proposal will decrease the cost of construction
The reduction in the occupant load in conference rooms will potentially reduce the number of exits provided in a tenant space.

E9-21

IBC: 1004.5.1 (IFC:[BE]1004.5.1)

Proponents: Daniel Nichols, representing Metropolitan Transportation Authority, Construction and Development (dnichols@mnr.org)

2021 International Building Code

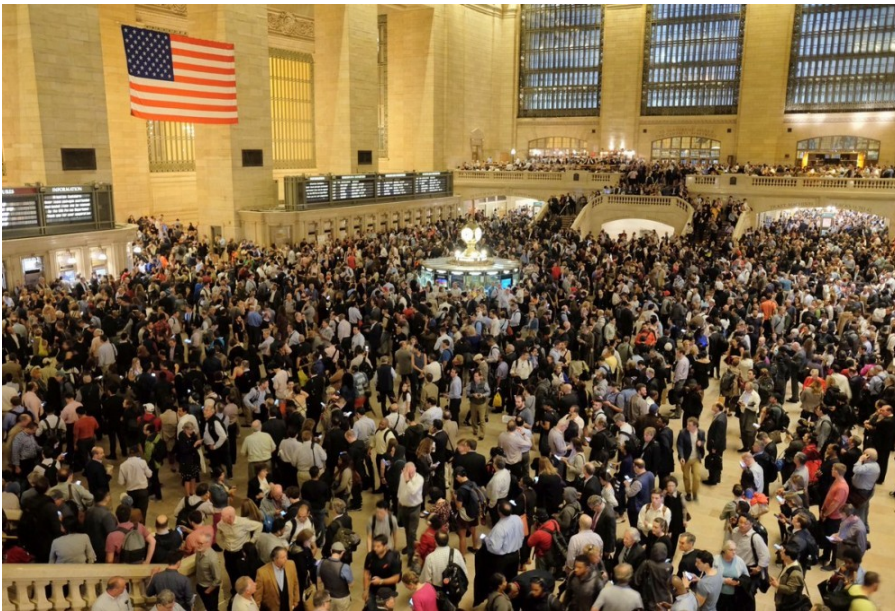
Revise as follows:

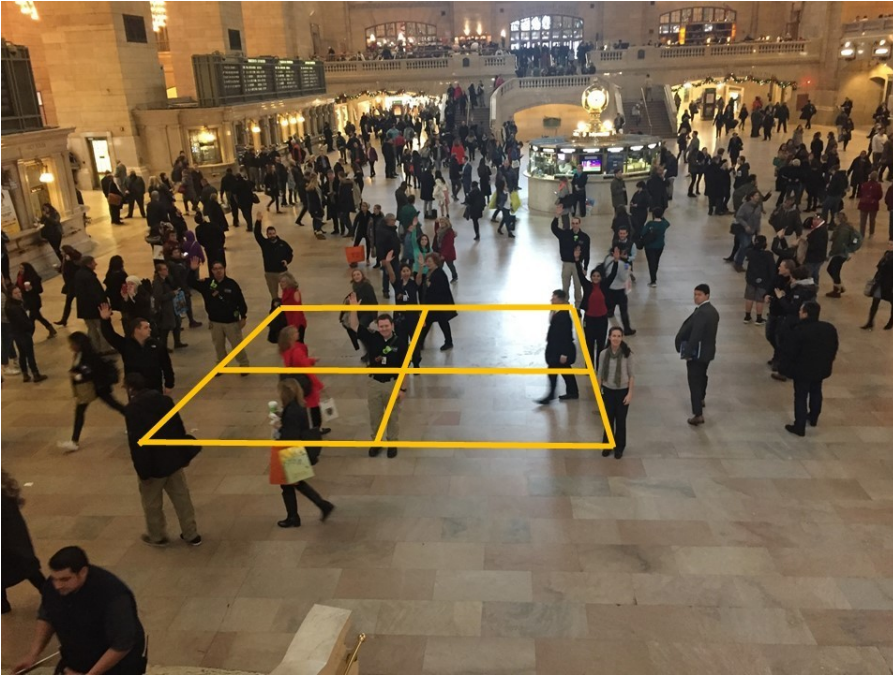
1004.5.1 Increased occupant load. The *occupant load* permitted in any building, or portion thereof, is permitted to be increased from that number established for the occupancies in Table 1004.5, provided that all other requirements of the code are met based on such modified number and the *occupant load* does not exceed one occupant per ~~5.7~~ square feet (~~0.47~~ ~~0.65~~ m^2) of occupiable floor space. Where required by the *building official*, an *approved aisle*, seating or fixed equipment diagram substantiating any increase in *occupant load* shall be submitted. Where required by the *building official*, such diagram shall be posted.

Reason Statement: 1004.5.1 permits the building official to accept an occupant load higher than Table 1004.5 permits, but not any higher than 7sf/person. This does create an issue for the building official that wants to utilize 5sf/person for concentrated standing spaces similar to a concentrated assembly standing area but is closely matches another category that the designer has designed to. What this proposal is changing is to allow the building official the full range of occupant load values within the Table to be applied when information is presented to them. As an example, an airport concourse is 100 SF/person and is a direct application to designer for this specific use. However, the sole use of 100 SF/person is not appropriate in times of service delays.

Examples of service delay situations in rail stations is provided as a comparison to this concept. The picture with the grid shows 10' x 10' boxes, the requirement for an airport concourse. The other photo shows how 100SF/person is not indicative of a service delay in a similar arrangement by comparing the two photos. Please compare these findings with your experiences with delays at ATL, ORD, JFK, or any other main airport (LGA is only at 100 SF/person when it's closed).

What is important is that the proper determination of occupant loading is not only for the consideration of new buildings, but the capacity when the means of egress is being altered or rehabilitated. By allowing the code official to have the full range, egress can be sized for exiting in all situations.





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

E10-21

IBC: 1004.8 (IFC:[BE]1004.8)

Proponents: Lee Kranz, representing Myself (lkranz@bellevuewa.gov)

2021 International Building Code

Revise as follows:

1004.8 Concentrated business use areas. The *occupant load* factor for concentrated business use shall be applied to telephone call centers, trading floors, ~~electronic data processing centers~~ and similar business use areas with a higher density of occupants than would normally be expected in a typical business occupancy environment. Where approved by the *building official*, the *occupant load* for concentrated business use areas shall be the actual *occupant load*, but not less than one occupant per 50 square feet (4.65 m²) of gross occupiable floor space.

Reason Statement: A data processing center is as a place where various electronic equipment, especially computers and telecommunications equipment is used and stored. As its name suggests, it serves primarily to process the information necessary for a business. The occupant load of data processing centers is typically very low, in the range of 300 to 500 SF per person. There is no reason to include this use for concentrated business areas.

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

This change is submitted to clarify that data processing centers are not related to concentrated business uses. If approved, it will not impact the cost to construct a building.

E10-21

E11-21

IBC: 1004.9 (IFC:[BE]1004.9)

Proponents: Timothy Stacy, representing Southern Oregon Fire Code Officials

2021 International Building Code

Revise as follows:

1004.9 Posting of occupant load. Every room or space that is ~~an~~ used for assembly ~~occupancy~~ shall have the *occupant load* of the room or space posted in a conspicuous place, near the main *exit* or *exit access doorway* from the room or space, for the intended configurations. Posted signs shall be of an approved legible permanent design and shall be maintained by the owner or the owner's authorized agent.

Reason Statement: Posting the occupant load in spaces used for assembly purposes could increase the safety of the occupants during an emergency and help reduce confusion during fire code maintenance inspections. Small spaces used for assembly purposes with an occupant load less than 50, while classified as a non-assembly occupancy group may still function as an assembly use. Posting a sign that indicates a maximum occupant load of 49, for example, can be important for occupant load awareness in a space that has the potential for a far greater number of occupants, and may have a means of egress capacity that cannot accommodate a higher number.

Cost Impact: The code change proposal will increase the cost of construction
The cost of the sign would likely be a minimal increase in the cost of construction.

E11-21

E12-21

IBC: 1005.3.1.1 (New) [IFC:[BE] 1005.3.1.1 (New)]

Proponents: Daniel Dain, Huckabee, representing Huckabee (daniel.dain@huckabee-inc.com)

2021 International Building Code

1005.3.1 Stairways. The capacity, in inches, of means of egress *stairways* shall be calculated by multiplying the *occupant load* served by such *stairways* by a *means of egress* capacity factor of 0.3 inch (7.6 mm) per occupant. Where *stairways* serve more than one *story*, only the *occupant load* of each *story* considered individually shall be used in calculating the required capacity of the *stairways* serving that *story*.

Exceptions:

1. For other than Group H and I-2 occupancies, the capacity, in inches, of means of egress *stairways* shall be calculated by multiplying the *occupant load* served by such *stairways* by a means of egress capacity factor of 0.2 inch (5.1 mm) per occupant in buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2 and an *emergency voice/alarm communication system* in accordance with Section 907.5.2.2.
2. Facilities with *smoke-protected assembly seating* shall be permitted to use the capacity factors in Table 1030.6.2 indicated for stepped *aisles* for *exit access* or *exit stairways* where the entire path for *means of egress* from the seating to the *exit discharge* is provided with a smoke control system complying with Section 909.
3. Facilities with *open-air assembly seating* shall be permitted to the capacity factors in Section 1030.6.3 indicated for stepped *aisles* for *exit access* or *exit stairways* where the entire path for *means of egress* from the seating to the *exit discharge* is open to the outdoors.

Add new text as follows:

1005.3.1.1 Handrails. Stairway capacity shall be calculated in accordance with the handrail requirements in Section 1014.9.

1014.9 Intermediate handrails. *Stairways* shall have intermediate *handrails* located in such a manner that all portions of the *stairway* minimum width or required capacity are within 30 inches (762 mm) of a *handrail*. On monumental *stairs*, *handrails* shall be located along the most direct path of egress travel.

Staff Note: Proposals to E2-21 and E12-21 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 existing section 1014.9 sentence about intermediate handrails is located as a pointer here as it directly relates to egress sizing at stairways in this section 1005.3.1.

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

This is a reference that will not change construction requirements, but may save people money where it would have been missed.

E12-21

E13-21

IBC: 1004.4, 1004.5.1, 1004.8, 1004.9, 1006.2.1, TABLE 1006.2.1 (IFC:[BE]1004.4, 1004.5.1, 1004.8, 1004.9, 1006.2.1, TABLE 1006.2.1)

Proponents: Jeff Perras, representing Code Red Consultants, LLC (jeffp@crcfire.com)

2021 International Building Code

Revise as follows:

1006.2.1 Egress based on occupant load and common path of egress travel distance. Two *exits* or *exit access doorways* from any space shall be provided where the design *occupant load* or the *common path of egress* travel distance exceeds the values *listed* in Table 1006.2.1. The cumulative *occupant load* from adjacent rooms, areas or spaces shall be determined in accordance with Section 1004.2.

Exceptions:

1. The number of *exits* from foyers, lobbies, vestibules or similar spaces need not be based on cumulative *occupant loads* for areas discharging through such spaces, but the capacity of the *exits* from such spaces shall be based on applicable cumulative *occupant loads*. The maximum number of occupants served by a single exit shall be such that the sum of the ratios of the calculated number of occupants of the space divided by the allowable number of occupants indicated in Table 1006.2.1 for each occupancy or function does not exceed one.
2. *Care suites* in Group I-2 occupancies complying with Section 407.4.
3. Unoccupied mechanical rooms and *penthouses* are not required to comply with the common path of egress travel distance measurement.

1004.4 Multiple ~~occupancies~~ functions. Where a building contains two or more ~~occupancies~~ functions, the *means of egress* requirements shall apply to each portion of the building based on the ~~occupancy~~ function of that space. Where two or more ~~occupancies~~ functions utilize portions of the same *means of egress* system, those egress components shall meet the more stringent requirements of all ~~occupancies~~ functions that are served.

1004.5.1 Increased occupant load. The *occupant load* permitted in any building, or portion thereof, is permitted to be increased from that number established for the ~~occupancies~~ functions in Table 1004.5, provided that all other requirements of the code are met based on such modified number and the *occupant load* does not exceed one occupant per 7 square feet (0.65 m²) of occupiable floor space. Where required by the *building official*, an *approved aisle*, seating or fixed equipment diagram substantiating any increase in *occupant load* shall be submitted. Where required by the *building official*, such diagram shall be posted.

1004.8 Concentrated business use areas. The *occupant load* factor for concentrated business use shall be applied to telephone call centers, trading floors, electronic data processing centers and similar business use areas with a higher density of occupants than would normally be expected in a typical business ~~occupancy~~ environment. Where approved by the *building official*, the *occupant load* for concentrated business use areas shall be the actual *occupant load*, but not less than one occupant per 50 square feet (4.65 m²) of gross occupiable floor space.

1004.9 Posting of occupant load. Every room or space that is an assembly ~~occupancy~~ function shall have the *occupant load* of the room or space posted in a conspicuous place, near the main *exit* or *exit access doorway* from the room or space, for the intended configurations. Posted signs shall be of an approved legible permanent design and shall be maintained by the owner or the owner's authorized agent.

**TABLE 1006.2.1
SPACES WITH ONE EXIT OR EXIT ACCESS DOORWAY**

OCCUPANCY FUNCTION	MAXIMUM OCCUPANT LOAD OF SPACE	MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE (feet)		
		Without Sprinkler System (feet)		With Sprinkler System (feet)
		Occupant Load		
		OL ≤ 30	OL > 30	
A ^c , E, M	49	75	75	75 ^a
B	49	100	75	100 ^a
F	49	75	75	100 ^a
H-1, H-2, H-3	3	NP	NP	25 ^b
H-4, H-5	10	NP	NP	75 ^b
I-1, I-2 ^d , I-4	10	NP	NP	75 ^a
I-3	10	NP	NP	100 ^a
R-1	10	NP	NP	75 ^a
R-2	20	NP	NP	125 ^a
R-3 ^e	20	NP	NP	125 ^{a, g}
R-4 ^e	20	NP	NP	125 ^{a, g}
S ^f	29	100	75	100 ^a
U	49	100	75	75 ^a

For SI: 1 foot = 304.8 mm.

NP = Not Permitted.

- a. Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where automatic sprinkler systems are permitted in accordance with Section 903.3.1.2.
- b. Group H occupancies equipped throughout with an *automatic sprinkler system* in accordance with Section 903.2.5.
- c. For a room or space used for assembly purposes having *fixed seating*, see Section 1030.8.
- d. For the travel distance limitations in Group I-2, see Section 407.4.
- e. The *common path of egress travel* distance shall only apply in a Group R-3 occupancy located in a mixed occupancy building.
- f. The length of *common path of egress travel* distance in a Group S-2 *open parking garage* shall be not more than 100 feet.
- g. For the travel distance limitations in Groups R-3 and R-4 equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.3, see Section 1006.2.2.6.

Reason Statement: There are many times where areas of a building contain multiple occupancies or functions, and it is not clear in the code how to apply this section. A common example is a study/lounge smaller than 750 square feet located at the end of a corridor in a dormitory or apartment building. The study/lounge is required to be calculated using 15 net square feet per person for an assembly space with movable tables and chairs; however, it is classified as a Group R occupancy due to its size, limiting it to 300 square feet in areas with only one exit. If a sleeping or dwelling unit also opens into this area, it is likely the only option is to locate the stair at the end of the corridor.

This proposed code change incorporates the sum of the ratios criteria that is used by multiple sections of the code, including Section 1006.3.2.1 for determining stories with a single exit.

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

This code change impacts the potential location of the required exit and will not impact the cost of construction.

E14-21

IBC: TABLE 1006.2.1 (IFC:[BE]TABLE 1006.2.1)

Proponents: Timothy Stacy, representing Southern Oregon Fire Code Officials

2021 International Building Code

Revise as follows:

**TABLE 1006.2.1
SPACES WITH ONE EXIT OR EXIT ACCESS DOORWAY**

OCCUPANCY	MAXIMUM OCCUPANT LOAD OF SPACE	MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE (feet)		
		Without Sprinkler System (feet)		With Sprinkler System (feet)
		Occupant Load		
		OL ≤ 30	OL > 30	
A ^c , E, M ^h	49	75	75	75 ^a
B	49	100	75	100 ^a
F	49	75	75	100 ^a
H-1, H-2, H-3	3	NP	NP	25 ^b
H-4, H-5	10	NP	NP	75 ^b
I-1, I-2 ^d , I-4	10	NP	NP	75 ^a
I-3	10	NP	NP	100 ^a
R-1	10	NP	NP	75 ^a
R-2	20	NP	NP	125 ^a
R-3 ^e	20	NP	NP	125 ^{a, g}
R-4 ^e	20	NP	NP	125 ^{a, g}
S ^f	29	100	75	100 ^a
U	49	100	75	75 ^a

For SI: 1 foot = 304.8 mm.

NP = Not Permitted.

- a. Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where automatic sprinkler systems are permitted in accordance with Section 903.3.1.2.
- b. Group H occupancies equipped throughout with an *automatic sprinkler system* in accordance with Section 903.2.5.
- c. For a room or space used for assembly purposes ~~having fixed seating~~, see Section 1030.8.
- d. For the travel distance limitations in Group I-2, see Section 407.4.
- e. The *common path of egress travel* distance shall only apply in a Group R-3 occupancy located in a mixed occupancy building.
- f. The length of *common path of egress travel* distance in a Group S-2 *open parking garage* shall be not more than 100 feet.
- g. For the travel distance limitations in Groups R-3 and R-4 equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.3, see Section 1006.2.2.6
- h. The *common path of egress travel* in the *merchandise pad* shall comply with Section 1018.4.

Staff note: This proposal's revision to Table 1006.2.1 footnote c addresses requirements in a different or contradicting manner to those found in Code Change E108-21 to Section 1030.8. The committee is urged to make their intentions clear with their actions on these proposals.

Reason Statement: This proposal is clarifying existing intent in an effort to make the table more useful. Footnote c: remove reference to fixed seating to clarify that section 1030.8 applies to more than fixed seating. This provides consistency with Section 1030.9 which specifically includes tables, displays, similar fixtures or equipment in addition to seats.

Footnote h: Add footnote to clarify that the common path limit in mercantile occupancies is reduced to 30 ft for merchandise pads per Section 1018.4. Similar references are provided such as for assembly uses, I-2, etc.

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

E15-21

IBC: 1006.2.2.2, 1006.2.2.3 (IFC:[BE] 1006.2.2.2, 1006.2.2.3)

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

2021 International Building Code

Revise as follows:

1006.2.2.2 Refrigeration machinery rooms. Machinery rooms larger than 1,000 square feet (93 m²) shall have not less than two *exits* or exit access doorways. Where two *exit access doorways* are required, one such doorway is permitted to be served by a fixed ladder or an *alternating tread device*. *Exit access doorways* shall be separated by a horizontal distance equal to one-half the maximum horizontal dimension of the room.

All portions of machinery rooms shall be within 150 feet (45 720 mm) of an *exit* or *exit access doorway*. ~~An increase in exit access travel distance is permitted in accordance with Section 1017.1.~~

Exit and *exit access doorways* shall swing in the direction of egress travel and shall be equipped with *panic hardware*, regardless of the *occupant load* served. *Exit* and *exit access doorways* shall be tight fitting and *self-closing*.

1006.2.2.3 Refrigerated rooms or spaces.

Rooms or spaces having a floor area larger than 1,000 square feet (93 m²), containing a refrigerant evaporator and maintained at a temperature below 68°F (20°C), shall have access to not less than two *exits* or *exit access doorways*.

Exit access travel distance shall be determined as specified in Section 1017.1. ~~1017.1 but all~~ All portions of a refrigerated room or space shall be within 150 feet (45 720 mm) of an *exit* or *exit access doorway* leading to a nonrefrigerated area where such rooms are not protected by an *approved automatic sprinkler system*. ~~Egress is allowed through adjoining refrigerated rooms or spaces.~~

Exception: Where using refrigerants in quantities limited to the amounts based on the volume set forth in the *International Mechanical Code*.

Egress is allowed through adjoining refrigerated rooms or spaces.

Reason Statement: This proposal is designed to correlate and clarify the egress requirements for refrigerated rooms and associated machinery rooms.

In Section 1006.2.2.2, the second paragraph refers to a travel distance increase for refrigeration machinery rooms that is allowed in Section 1017.1. However, Section 1017.1 does not provide any increase in exit access travel distance for refrigeration machinery rooms; and in fact, Footnote a refers back to Section 1006.2.2.2 for distance limitations in refrigeration machinery rooms. This creates a circular reference and therefore this sentence is proposed to be deleted to eliminate the confusion.

In Section 1006.2.2.3, the second paragraph contains a requirement for nonsprinklered refrigerated rooms or spaces. This paragraph is revised to clarify that there are separate egress requirements.

- Exit access travel distance which is limited by Table 1017.1
- The travel distance within a nonsprinklered refrigerated room, which is limited to 150'

Additionally, language is added to clarify that the travel distance of 150' is to reach an area outside of the refrigerated portion of the building.

The last sentence is moved to after the exception so it is a separate paragraph since it does not affect the exit access travel distance. This clarifies that the egress path can pass through intervening refrigerated rooms.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This revision resolves correlation issues and clarifies the application of the requirements

E15-21

E16-21

IBC: 1006.2.2.3 (IFC:[BE]1006.2.2.3)

Proponents: Greg Johnson, representing Codes & Standards International (gjohnsonconsulting@gmail.com); Jay Peters, representing Vertiv (peters.jay@me.com); Andrew Klein, representing Building Owners and Managers Association International (andrew@asklein.com); Barry Greive, representing Target Corporation (barry.greive@target.com); David Collins, representing The Preview Group, Inc. (dcollins@preview-group.com)

2021 International Building Code

Revise as follows:

1006.2.2.3 Refrigerated rooms or spaces. Rooms or spaces having a floor area larger than 1,000 square feet (93 m²), containing a refrigerant evaporator and maintained at a temperature below 68° F (20° C), shall have access to not less than two *exits* or exit access doorways.

Exit access travel distance shall be determined as specified in Section 1017.1, but all portions of a refrigerated room or space shall be within 150 feet (45 720 mm) of an *exit* or *exit access doorway* where such rooms are not protected by an *approved automatic sprinkler system* or automatic fire-extinguishing system. Egress is allowed through adjoining refrigerated rooms or spaces.

Exception: Where using refrigerants in quantities limited to the amounts based on the volume set forth in the *International Mechanical Code*.

Reason Statement: This proposal adds an automatic fire-extinguishing system as an equivalent to the fire sprinkler relaxation of the exit access provisions of Sec. 1006.2.2.3. This change is needed to address information technology equipment facilities (computer rooms and data centers) which are rooms or spaces that are cooled for process purposes.

Information technology equipment (ITE) will typically need alternative fire-suppression methods because H₂O is bad juju for ITE. A separate proposal creates a new section in Chapter 4 to regulate ITE facilities. It requires compliance with Sec. 1006.2.2.3.

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

E16-21

E17-21

IBC: 1006.3 (IFC:[BE]1006.3)

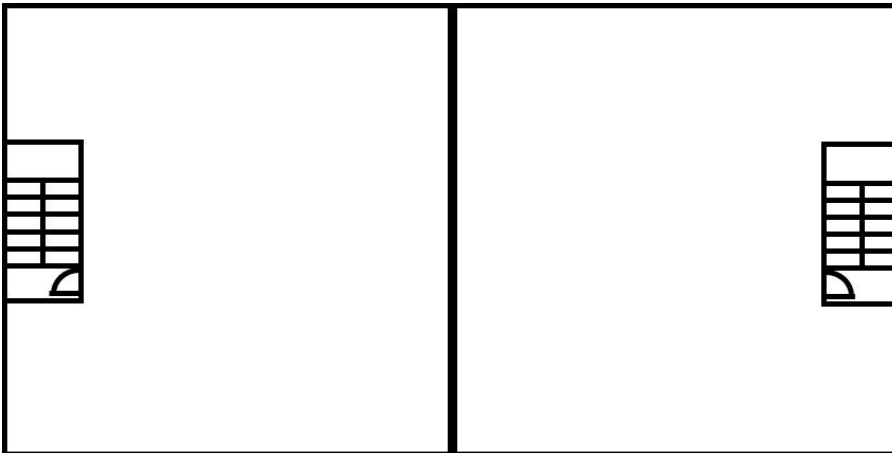
Proponents: Stephen Thomas, Colorado Code Consulting a Shums Coda Assoc. Company, representing Colorado Chapter ICC
(stthomas@coloradocode.net)

2021 International Building Code

Revise as follows:

1006.3 Egress from stories or occupied roofs. ~~The means of egress system serving any story or occupied roof shall be provided with the~~ All spaces located on a story or occupied roof shall have access to the required number of separate and distinct *exits* or access to *exits* based on the aggregate *occupant load* served in accordance with this section.

Reason Statement: As this section was revised over the past couple of cycles, the intent was lost. It has always been intended that occupants on a story or occupied roof have access to the minimum number of required exits. The existing language does not say that. It just says that you have to have the minimum number of exits. Therefore, you could have a story that has two exits and if it is split into separate spaces, the occupants may not have access to the minimum number of exits. An interior exit stairway may only be accessed from a single tenant space and you are not permitted to exit through an adjacent tenant to get to an exit. The drawing below shows what the current language permits. The story has two exits on each end of the building. However, if the story is split in two, the occupants from either side do not access to the other interior exit stairway. This proposal clarifies the intent of the code and requires access to the minimum number of exits from a story. Therefore, the layout below would not be permitted.



Cost Impact: The code change proposal will not increase or decrease the cost of construction. This proposal is intended to just clarify the intent of the code.

E17-21

E18-21

IBC: 1006.3.2 (IFC:[BE]1006.3.2)

Proponents: Ed Roether, representing Ed Roether Consulting (ed@edroetherconsulting.com)

2021 International Building Code

Revise as follows:

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 smoke-protected assembly seating and 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 occupied roofs.

Reason Statement: Smoke-protected assembly seating in many facilities span across multiple stories similar to many facilities with open air seating. This proposal clarifies that exit access travel distance requirements of Section 1030.7 apply to smoke-protected assembly seating and that path of egress travel can pass through more than one adjacent story similar to open air assembly seating. Allowing exit access through more than one story from smoke-protected assembly seating is crucial for these large facilities.

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

This proposed change essentially coordinates the building code with how these large facilities have been designed and built for many years.

E18-21

E19-21

IBC: 1006.3.2, 1019.3, 1030.7 (IFC:[BE]1006.3.2, 1019.3, 1030.7)

Proponents: Sarah Rice, representing The Preview Group, Inc. (srice@preview-group.com)

2021 International Building Code

Revise as follows:

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.*~~
3. 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.*~~
4. 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.
5. 7. Exterior *exit access stairways* and *ramps* between occupied roofs.

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.*~~
5. 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.*~~
6. 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.
7. 9. Exterior *exit access stairways* or *ramps* between occupied roofs.

1030.7 Travel distance. The *exit access* travel distance shall comply with Section 1017. Where *aisles* are provided for seating, the distance shall be measured along the *aisles* and *aisle accessways* without travel over or on the seats.

Exceptions:

1. In facilities with *smoke-protected assembly seating*, the total *exit access* travel distance shall be not greater than 400 feet (122 m). That portion of the total permitted *exit access* travel distance from each seat to the nearest entrance to a vomitory or concourse shall not exceed 200 feet (60 960 mm). The portion of the total permitted *exit access* travel distance from the entrance to the vomitory or concourse to one of the following shall not exceed 200 feet (60 960 mm):
 - 1.1. The closest riser of an *exit ~~access~~ stairway*.
 - 1.2. The closest slope of an *exit ~~access~~ ramp*.
 - 1.3. An exit.
2. In facilities with *open-air assembly seating* of Type III, IV or V construction, the total *exit access* travel distance to one of the following shall not exceed 400 feet (122 m):
 - 2.1. The closest riser of an *exit ~~access~~ stairway*.
 - 2.2. The closest slope of an *exit ~~access~~ ramp*.
 - 2.3. An exit.
3. In facilities with *open-air assembly seating* of Type I or II construction, the total *exit access* travel distance shall not be limited.

Reason Statement: The IBC recognizes that an atrium with smoke control, and assembly venues that are provided with smoke protection or which are open-air have unique characteristics, one of which is to allow the vertical egress system to be totally unenclosed. Those of us who use the I-Codes on a regular basis (ok, us code geeks) know this to be true, so why do we so frequently get asked –“where in the IBC does it say that an exit stairway in an atrium or large assembly venue is not required to be enclosed?” You know this to be true, but...just where does the IBC say that?

The literal answer is that the current IBC NEVER allows an exit stairway to be totally unenclosed – even if it only serves a smoke protected or open-air assembly venue or is located in an atrium. But wait – again, you know in your code heart that the IBC allows stairways in these locations to be completely unenclosed. So then how did you arrive at that conclusion?

We are not going to keep you in suspense by making you read to the end of the “connect-the-dots” summary below before we tell you the answer – it is all about IBC terminology. Stop and think about the question –“where in the IBC does it say that an exit stairway in an atrium or in a smoke protected or open-air assembly venue is not required to be enclosed?” The IBC never allows an “exit stairway” to be unenclosed, but it does all “exit access stairways” to be unenclosed.

In essence, the IBC gives three options for designing the vertical egress system in these locations:

- Classify it as an interior exit stairways or ramps and enclose it in fire rated construction (IBC 1022 & 1023);
- Classify it as an exterior exit stairways or ramps and separate it from the interior of the building with fire rated construction (IBC 1022 & 1027); or
- Classify it as an exit access stair and not be required to enclose it at all - although there is nothing to prohibit it being enclosed by non-rated construction (IBC 1006.3.1 & 1019)

If the designer opts to call the vertical egress system in one of these locations an “exit” stairway or ramp, then IBC Section 1023.1 requires it be “separated from the interior of the building” with fire-resistance rated construction per 1023.2 – without exception.

But if the designer opts to call the vertical egress system an “exit access” stairway or ramp then eventually, it is only after they have worked their way through a multitude of code sections, will they get to the conclusion that the stairway is allowed to be totally unenclosed. This comes after they realize that they need to be looking for provisions for “exit access stairway” requirements and not “exit stairway” requirements. Once through all the code sections, it is only then do they arrive at a conclusion that an “exit access stairway” in one of these locations is the type of vertical transportation that is allowed to NOT be “separated from the interior of the building” with fire-resistance rated construction.

Adding to the myriad of IBC provision that must be worked through, there is still the age-old problem just what the world

thinks an “exit” is. Think about how often you see plans/designs from designers where every corridor, door and stairway

is labeled as an “exit.” And specific to this code change, seeing unenclosed (on all sides) egress stairs in one of these locations are labeled as

"EXIT," when it really should be labeled as an "EXIT ACCESS STAIRWAY."

And how many times do plans examiners or code officials correct the designers plans telling them that to be code compliant they should label that EXIT stairway as an EXIT ACCESS stairway?

This code change is seeking to simplify the path it takes a code user to get to the conclusion that a stairway in one of these locations is not required to be enclosed. Through this code change we propose that this can be accomplished by adding one (1) 2 simple exceptions to IBC Section 1023.1 as shown in the proposal.

The single most common argument we keep hearing for not creating this kind of exception is - that by definition an "exit" is required to always separated from other interior spaces of a building or structure by fire-resistance-rated construction.

And you can't make the code read differently than the definition.

Yes, that is how "exit" was defined - in the 2009 IBC! But it hasn't been defined that way since the 2012 IBC. In the 2021

IBC "exit" is defined as "That portion of a means of egress system between the exit access and the exit discharge or public way. Exit components include exterior exit doors at the level of exit discharge, interior exit stairways and ramps, exit passageways, exterior exit stairways and ramps and horizontal exits."

If successful we will no longer get those calls asking where does it say that the exit stairway in one of these locations is not required to be enclosed.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The proposal is to simplify a current code provision and will not have any effect on the construction requirements.

E19-21

E20-21

IBC: 1006.3.2, 1017.3, 1019.3, 1023.1, 1027.6 (IFC:[BE]1006.3.2, 1017.3, 1019.3, 1023.1, 1027.6)

Proponents: Sarah Rice, The Preview Group. Inc., representing The Preview Group (srice@preview-group.com)

2021 International Building Code

Revise as follows:

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.~~
4. 5. *Exit access stairways* and *ramps* serving *open-air assembly seating* complying with the exit access travel distance requirements of Section 1030.7.
5. 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.
6. 7. Exterior *exit access stairways* and *ramps* between occupied roofs.

1017.3 Measurement. *Exit access* travel distance shall be measured from the most remote point of each room, area or space along the natural and unobstructed path of horizontal and vertical egress travel to the entrance to an *exit*. Where more than one exit is required, *exit access* travel distance shall be measured to the nearest exit.

Exceptions:

1. In *open parking garages*, where the exit stairway or ramp is not located in a fire-resistance rated enclosure in accordance with Section 1023.2, exit access travel distance shall be permitted to be measured to the closest riser of an exit access a stairway or the closest slope of an exit access a ramp.
2. In smoke protected seating and open air assembly seating, exit access travel distance shall be measured in accordance with Section 1030.7.

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.~~
6. 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.
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.

8. 9. Exterior *exit access stairways* or *ramps* between occupied roofs.

1023.1 General. Interior *exit stairways* and *ramps* serving as an exit component in a *means of egress* system shall comply with the requirements of this section. Interior *exit stairways* and *ramps* shall be enclosed and lead directly to the exterior of the building or shall be extended to the exterior of the building with an *exit passageway* conforming to the requirements of Section 1024, except as permitted in Section 1028.2. An interior *exit stairway* or *ramp* shall not be used for any purpose other than as a *means of egress* and a *circulation path*.

Exception: Interior *exit stairways* and *ramps* in open parking garages are not required to be enclosed or lead directly to the exterior of the building when they serve only the open parking garage.

1027.6 Exterior exit stairway and ramp protection. Exterior *exit stairways* and *ramps* shall be separated from the interior of the building as required in Section 1023.2. Openings shall be limited to those necessary for egress from normally occupied spaces. Where a vertical plane projecting from the edge of an exterior *exit stairway* or *ramp* and landings is exposed by other parts of the building at an angle of less than 180 degrees (3.14 rad), the exterior wall shall be rated in accordance with Section 1023.7.

Exceptions:

1. Separation from the interior of the building is not required for occupancies, other than those in Group R-1 or R-2, in buildings that are not more than two stories above grade plane where a *level of exit discharge* serving such occupancies is the first story above grade plane.
2. Separation from the interior of the building is not required where the exterior *exit stairway* or *ramp* is served by an exterior *exit ramp* or balcony that connects two remote exterior *exit stairways* or other *approved exits* with a perimeter that is not less than 50 percent open. To be considered open, the opening shall be not less than 50 percent of the height of the enclosing wall, with the top of the openings not less than 7 feet (2134 mm) above the top of the balcony.
3. Separation from the open-ended *corridor* of the building is not required for exterior *exit stairways* or *ramps*, provided that Items 3.1 through 3.5 are met:
 - 3.1. The building, including open-ended *corridors*, and *stairways* and *ramps*, shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2.
 - 3.2. The open-ended *corridors* comply with Section 1020.
 - 3.3. The open-ended *corridors* are connected on each end to an exterior *exit stairway* or *ramp* complying with Section 1027.
 - 3.4. The exterior walls and openings adjacent to the exterior *exit stairway* or *ramp* comply with Section 1023.7.
 - 3.5. At any location in an open-ended *corridor* where a change of direction exceeding 45 degrees (0.79 rad) occurs, a clear opening of not less than 35 square feet (3.3 m²) or an exterior *stairway* or *ramp* shall be provided. Where clear openings are provided, they shall be located so as to minimize the accumulation of smoke or toxic gases.
4. In Group R-3 occupancies not more than four stories in height, exterior *exit stairways* and *ramps* serving individual *dwelling units* are not required to be separated from the interior of the building where the exterior *exit stairway* or *ramp* discharges directly to grade.
5. Exterior exit stairways and ramps in open parking garages shall not be required to be separated from the interior of the building when they serve only the open parking garage.

Reason Statement: The IBC recognizes that an open parking garage has unique characteristics, one of which is to allow the vertical egress system to be totally unenclosed. Those of us who use the I-Codes on a regular basis (ok, us code geeks) know this to be true, so why do we so frequently get asked –“where in the IBC does it say that an exit stairway in an open parking garage is not required to be enclosed?” You know this to be true, but...just where does the IBC say that?

The literal answer is that the current IBC NEVER allows an exit stairway to be totally unenclosed – even if it only serves the open parking garage. But wait – again, you know in your code heart that the IBC allows an exit stairway in an open parking garage to be completely unenclosed. So how did you arrive at that conclusion?

We are not going to keep you in suspense by making you read to the end of the “connect-the-dots” summary below before we tell you the answer – it is all about IBC terminology. Stop and think about the question –“where in the IBC does it say that an exit stairway in an open parking garage is not required to be enclosed?” The IBC never allows an “exit stairway” to be unenclosed, but it does all “exit access stairways” to be unenclosed.

In essence, the IBC gives three options for designing the vertical egress system in an open parking garage:

- Classify it as an interior exit stairways or ramps and enclose it in fire rated construction (IBC 1022 & 1023);
 - Classify it as an exterior exit stairways or ramps and separate it from the interior of the building with fire rated construction (IBC 1022 & 1027);
- or

- Classify it as an exit access stair and not be required to enclose it at all - although there is nothing to prohibit it being enclosed by non-rated construction (IBC 1006.3.1 & 1019)

If the designer opts to call the vertical egress system in an open parking garage an "exit" stairway or ramp, then both IBC Section 1023.1 and 1027.6 require it be "separated from the interior of the building" with fire-resistance rated construction per 1023.2 – without exception.

But if the designer opts to call the vertical egress system an "exit access" stairway or ramp then eventually, after they have worked their way through a multitude of code sections, will they get to the conclusion that the stairway is allowed to be totally unenclosed. This comes after they realize that they need to be looking for provisions for "exit access stairway" requirements and not "exit stairway" requirements. Once through all the code sections, it is only then do they arrive at a conclusion that an "exit access stairway" in an opening parking garage (and only serving the open parking garage) is the type of vertical transportation that is allowed to NOT be "separated from the interior of the building" with fire-resistance rated construction.

Adding to the myriad of IBC provision that must be worked through, there is still the age-old problem just what the world thinks an "exit" is. Think about how often you see plans/designs from designers where every corridor, door and stairway is labeled as an "exit." And specific to this code change, seeing unenclosed (on all sides) egress stairs in an open parking garage are labeled as "EXIT," when it really should be labeled as an "EXIT ACCESS STAIRWAY."

And how many times do plans examiners or code officials correct the designers plans telling them that to be code compliant they should label that EXIT stairway as an EXIT ACCESS stairway?

This code change is seeking to simplify the path it takes a code user to get to the conclusion that a stairway in an open parking garage (and only serving the open parking garage) is not required to be enclosed. Through this code change we propose that this can be accomplished by adding one (1) simple exception to IBC Section 1023.1 that reads:

"Exception: *Interior exit stairways and ramps* in open parking garages shall not be required to be enclosed or lead directly to the exterior of the building when they serve only the open parking garage."

The single most common argument we keep hearing for not creating this kind of exception is - that by definition an "exit" is required to always separated from other interior spaces of a building or structure by fire-resistance-rated construction. And you can't make the code read differently than the definition.

Yes, that is how "exit" was defined - in the 2009 IBC! But it hasn't been defined that way since the 2012 IBC. In the 2021 IBC "exit" is defined as "That portion of a means of egress system between the exit access and the exit discharge or public way. Exit components include exterior exit doors at the level of exit discharge, interior exit stairways and ramps, exit passageways, exterior exit stairways and ramps and horizontal exits."

If successful we will no longer get those calls asking where does it say that the exit stairway in an open parking garage is not required to be enclosed.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is a change in terminology with no change in construction requirements for stairways.

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)

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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 <u>OR 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 <u>AND OCCUPIED ROOF</u>	OCCUPANCY	MAXIMUM OCCUPANT LOAD PER STORY <u>AND OCCUPIED ROOF</u>	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.

E21-21

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.

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.

E22-21

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	R-2 ^{a,b} <u>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^{ac}	10	75
	S ^{ab-d}	29	75
Second story above grade plane	B, F, M, S ^{bd}	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.

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 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.

E23-21

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.

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 reorganization of existing text.

E25-21

IBC: 1008.2 (IFC:[BE]1008.2)

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

2021 International Building Code

Revise as follows:

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. Self-service storage units accessed directly from the exterior.
23. *Aisle accessways* in Group A.
34. *Dwelling units* and *sleeping units* in Groups R-1, R-2 and R-3.
45. *Sleeping units* of Group I occupancies.

Reason Statement: Although classified as Group S, exterior-access self storage facilities (those with rolling doors that open up for each unit) are similar in nature to Group U occupancies in the fact they are small, easily navigable, and have short dwell times. Many jurisdictions already do not require lighting inside of such units because they are not considered occupiable, and the safety concern of tenants using electricity for personal use and unregulated activities. This code change codifies for all jurisdictions that providing light inside of such units is unnecessary from a safety perspective and therefore not required.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. Most jurisdictions already interpret the code to not require illumination in self-service storage units that are accessible from the exterior. For jurisdictions that do require illumination, this code change will decrease the cost of construction.

E25-21

E26-21 Part I

PART I - IBC: SECTION 202 (New), 1008.3.4, 1013.6.3, NFPA Chapter 35 (New); [IFC:[BE]SECTION 202 (NEW), 1008.3.4, [BE]1013.6.3, NFPA Chapter 80 (New)]

PART II - IFC: 1203.1.1, 1203.1.3, NFPA Chapter 80 (New); [IBC:[F] 2702.1.2, 2702.1.3, NFPA Chapter 35 (New)]

Proponents: Bryan P. Holland, MCP, CStd., National Electrical Manufacturers Association, representing National Electrical Manufacturers Association (bryan.holland@nema.org)

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

Add new definition as follows:

ENERGY STORAGE SYSTEM (ESS). One or more devices, assembled together, capable of storing energy in order to support electrical energy at a future time.

Revise as follows:

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

1013.6.3 Power source. Exit signs shall be illuminated at all times. To ensure continued illumination for a duration of not less than 90 minutes in case of primary power loss, the sign illumination means shall be connected to an emergency power system provided from an energy storage system (ESS), storage batteries, unit equipment or an on-site generator. The installation of the emergency power system shall be in accordance with Chapter 27. Group I-2, Condition 2 exit sign illumination shall not be provided by unit equipment batteries only.

Exception: *Approved* exit sign illumination types that provide continuous illumination independent of external power sources for a duration of not less than 90 minutes, in case of primary power loss, are not required to be connected to an emergency electrical system.

Add new standard(s) as follows:

NFPA

National Fire Protection Association
1 Batterymarch Park
Quincy MA 02169-7471

NFPA 855-20: Standard for the Installation of Stationary Energy Storage Systems

Staff Analysis: A review of the standard proposed for inclusion in the code, NFPA 855-20, 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.

E26-21 Part I

E26-21 Part II

PART II - IFC: 1203.1.1, 1203.1.3, NFPA Chapter 80 (New); [IBC:[F] 2702.1.2, 2702.1.3, NFPA Chapter 35 (New)]

Proponents: Bryan Holland, National Electrical Manufacturers Association, representing National Electrical Manufacturers Association
(bryan.holland@nema.org)

2021 International Fire Code

Revise as follows:

1203.1.1 Stationary generators and energy storage systems (ESS). Stationary emergency and standby power generators required by this code shall be *listed* in accordance with UL 2200. Energy storage systems (ESS) installed as an emergency or standby power system required by this code shall be listed in accordance with UL 9540.

1203.1.3 Installation. Emergency power systems and standby power systems shall be installed in accordance with the *International Building Code*, NFPA 70, NFPA 110 and NFPA 111 and NFPA 855.

Add new standard(s) as follows:

NFPA

National Fire Protection Association
1 Batterymarch Park
Quincy MA 02169-7471

NFPA 855-20: Standard for the Installation of Stationary Energy Storage Systems

Staff Analysis: A review of the standard proposed for inclusion in the code, NFPA 855-20, 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 this proposal is to add energy storage systems (ESS) as a code recognized method to provide emergency or standby power for means of egress illumination and exit signs in Chapter 10 of the code. The proposal also includes product safety certification requirements in 1203.1.1/2702.1.1 and a pointer to the NFPA 855 in 1203.1.3/2702.1.3. Inclusion of ESS in the IFC/IBC aligns the codes with Article 706 of NFPA 70.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. The inclusion of Energy Storage Systems (ESS) as an option to provide code required emergency or standby power will not increase nor decrease the cost of construction.

E26-21 Part II

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.

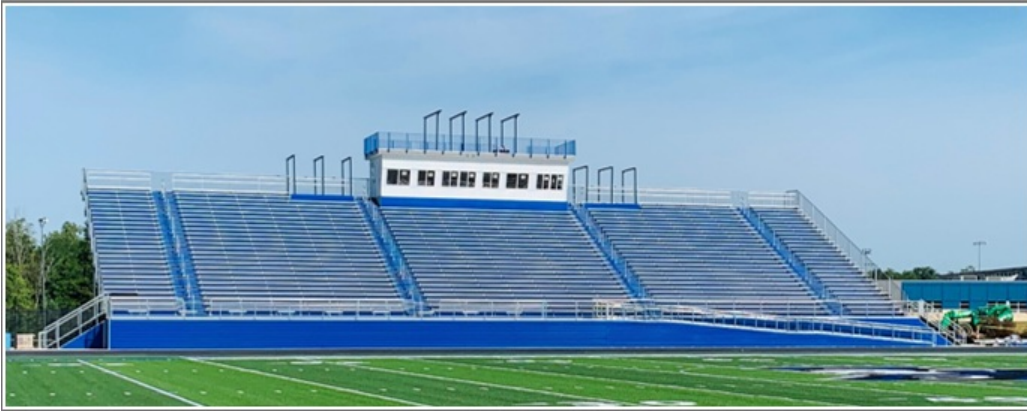
This can apply to spaces such as theaters, stadiums, bleachers, grandstands and folding and telescopic seating. Where this is currently being missed the most in is raised bleacher seating. The designers provide one ramp to get in, but commonly only have one steps on the other ends of the bleachers. Very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

E27-21

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.

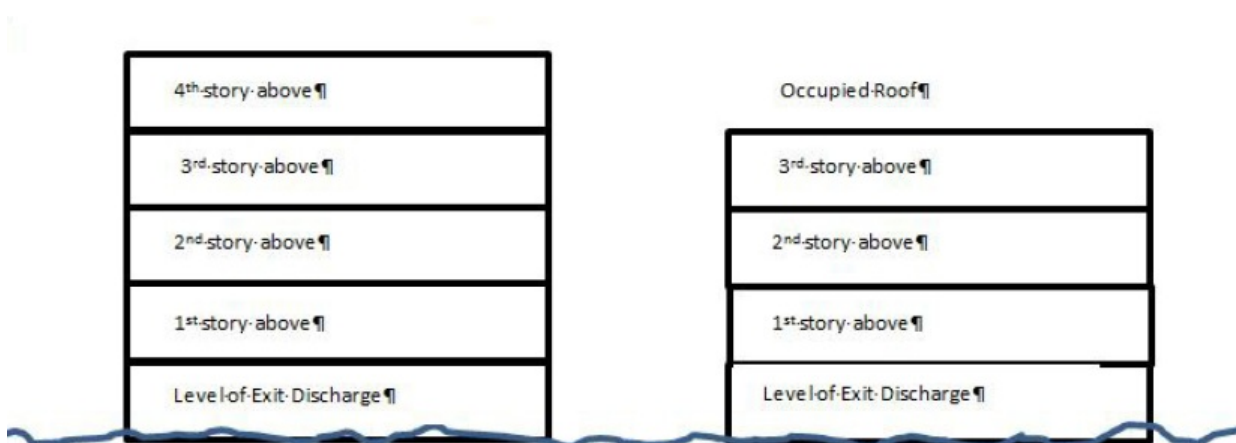
Exceptions:

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.

E28-21

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.

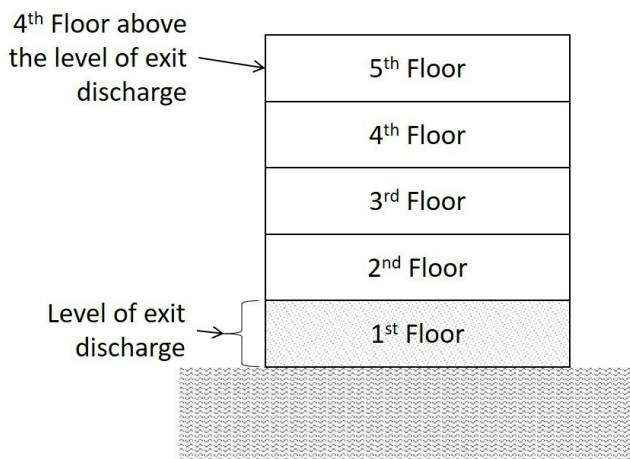


Figure 1

Section 1009.2.1 requires an elevator in this building

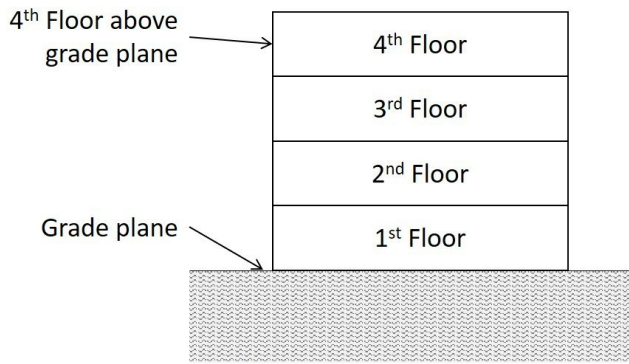


Figure 1

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.

E30-21

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:

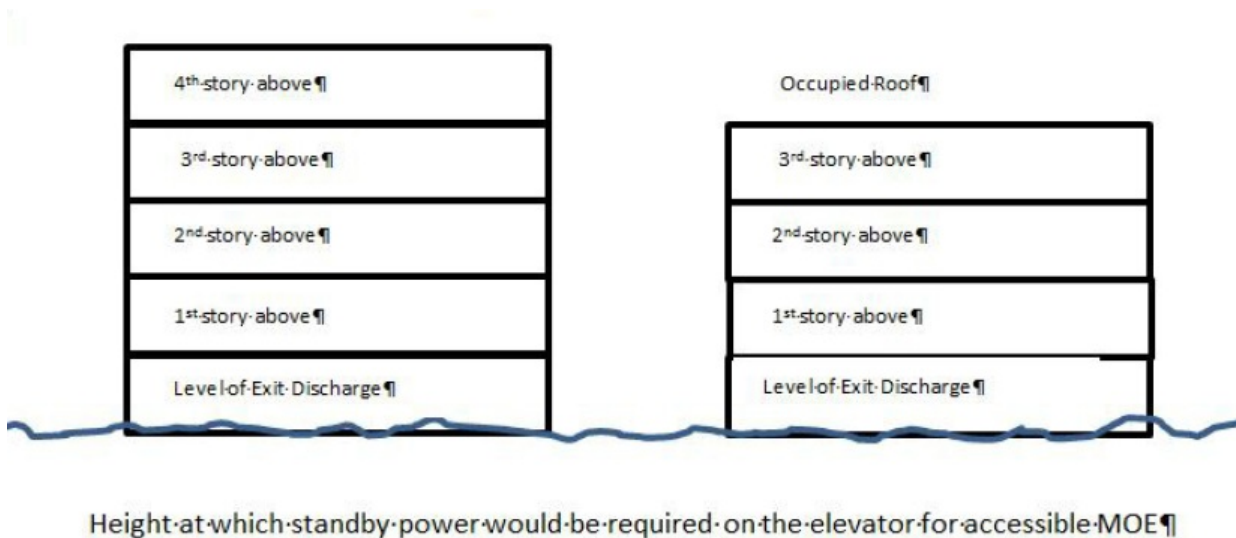
1009.2.1 Elevators required. In buildings where a required accessible floor or occupied roof is four or more stories above or below a *level of exit discharge*, not less than one required *accessible means of egress* shall be an elevator complying with Section 1009.4.

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.

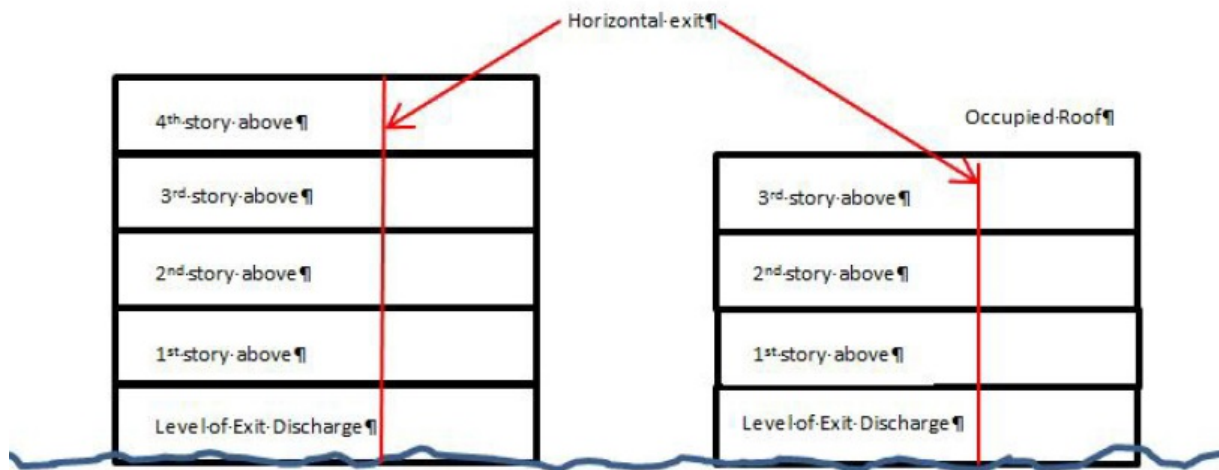


This allowances being asked for is a very minimal exception for standby power to elevators. (This is **not** an exception for the accessible route requirements to these spaces in Chapter 11.) Horizontal exits as an option for elevators to serve as part on an accessible means of egress is already permitted 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 (erich@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.

E32-21

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 an 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 an 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.

E33-21

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.

E34-21

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. Manufacturers 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.

E36-21

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 I

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.

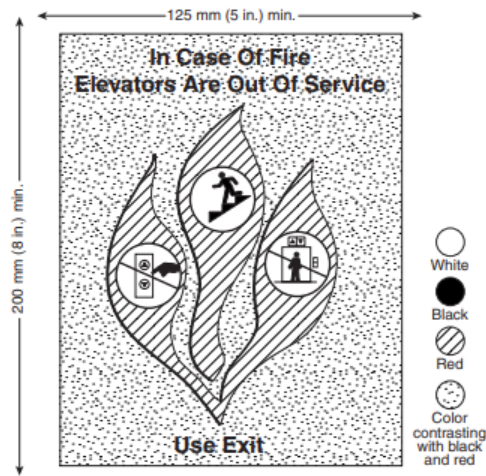


Exhibit S2.5 Elevator Corridor Call Station Pictograph.
(From ASME A17.1 Section 2.27, Fig. 2.27.9)

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.

E38-21

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.

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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.

E39-21

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.

E40-21

E41-21

IBC: 1010.1.3 (IFC:[BE]1010.1.3)

Proponents: John-Jozef Proczka, representing self (john-jozef.proczka@phoenix.gov)

2021 International Building Code

Revise as follows:

1010.1.3 Forces to unlatch and open doors. The forces to unlatch doors shall comply with the following:

1. Where door hardware operates by push or pull, the operational force to unlatch the door shall not exceed 15 pounds (67 N).
2. Where door hardware operates by rotation, the operational force to unlatch the door shall not exceed 28 inch-pounds (315 N-cm).

The force to open doors shall comply with the following:

1. For interior swinging egress doors that are manually operated, other than doors required to be fire rated, the force for pushing or pulling open the door shall not exceed 5 pounds (22 N).
2. For other swinging doors, sliding doors or folding doors, and doors required to be fire rated, the door shall require not more than a 30-pound (133 N) force to be set in motion and shall move to a full-open position when subjected to not more than a 15-pound (67 N) continuous force.

Reason Statement: Opening a door requires continuous force to be applied as the door opens, and not a force of unknown duration. There is the potential that the current wording would require a "single" push or pull of 15 pounds to open the door, which is not the intent.

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

E41-21

E42-21

IBC: 1010.2.1, 1010.2.4 (IFC:[BE]1010.2.1, 1010.2.4)

Proponents: John-Jozef Proczka, representing self (john-jozef.proczka@phoenix.gov)

2021 International Building Code

Revise as follows:

1010.2.1 Unlatching. The unlatching of any door or leaf for egress shall require not more than one motion in a single linear or rotational direction to release all latching and all locking devices.

Exceptions:

1. Places ~~allowed to involve~~ of detention or restraint.
2. Where manually operated bolt locks are permitted by Section 1010.2.5.
3. Doors with automatic flush bolts as permitted by Section 1010.2.4, Item 4.
4. Doors from individual *dwelling units* and *sleeping units* of Group R occupancies as permitted by Section 1010.2.4, Item 5.

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 ~~allowed to involve~~ 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 are permitted to be equipped with a night latch, dead bolt or security chain, 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 proposal seeks to clarify that not any place can be designated as one of detention or restraint in any occupancy, and therefore allow the locking or complication of doors.

The occupancy classification alone is not a sufficient to ensure this misuse does not occur, as I-3 occupancies are only applicable when the number of occupants is over 5. The ability to lock 5 people in a room in an office building is not the intent of the code, as this occupancy will provide no extra measures to ensure they will be able to move to safety during an emergency, such as a fire.

Cost Impact: The code change proposal will increase the cost of construction
This proposal may create additional requirements for detention of small numbers of occupants.

E42-21

E43-21

IBC: SECTION 202 (New), 1010.2.1, 1010.2.4, Table 1010.2.4 (New), 1010.2.5 (IFC:[BE] SECTION 202 (New), 1010.2.1, 1010.2.4, Table 1010.2.4 (New), 1010.2.5)

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

2021 International Building Code

Add new definition as follows:

AUTOMATIC FLUSH BOLT. Door locking hardware, installed on the inactive leaf of a pair of doors, which has a bolt that is extended automatically into the door frame or floor when the active leaf is closed after the inactive leaf, and which holds the inactive leaf in a closed position. When the active leaf is opened, the automatic flush bolt retracts the bolt or rod allowing the inactive leaf to be opened (see CONSTANT LATCHING BOLT, DEAD BOLT, MANUAL BOLT).

CONSTANT LATCHING BOLT. Door locking hardware installed on the inactive leaf of a pair of doors, which has a bolt that automatically latches into the door frame or the floor, and which holds the inactive leaf in a closed position. The latch bolt is retracted manually to allow the inactive leaf to be opened.

DEAD BOLT. Door locking hardware with a bolt which is extended and retracted by action of the lock mechanism (see AUTOMATIC FLUSH BOLT, CONSTANT LATCHING BOLT, MANUAL BOLT).

MANUAL BOLT. Door locking hardware operable from one side of the door, or from the edge of a door leaf, with a bolt or rod extended and retracted by manual movement of the bolt or rod, such as a manual flush bolt or manual surface bolt (see AUTOMATIC FLUSH BOLT, CONSTANT LATCHING BOLT, DEAD BOLT).

Revise as follows:

1010.2.1 Unlatching. The unlatching of any door or leaf for egress shall require not more than one motion in a single linear or rotational direction to release all latching and all locking devices. Manual bolt locks are not permitted.

Exceptions:

1. Places of detention or restraint.
2. Where ~~manually-operated~~ manual bolt locks are permitted by Section ~~1010.2.5~~ 1010.2.4 Item 4.
3. Doors with *automatic flush bolts* as permitted by Section 1010.2.4, Item 4.
4. Doors from individual *dwelling units* and *sleeping units* of Group R occupancies as permitted by Section 1010.2.4, Item 5.

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.~~ Manual bolt locks, automatic flush bolts, and constant latching bolts on the inactive leaf of a pair of doors in accordance with Table 1010.2.4, provided the inactive leaf having a manual bolt lock, automatic flush bolt, or constant latching bolt does not have a doorknob, panic hardware, or similar operating hardware.
5. Doors from individual *dwelling* or *sleeping units* of Group R occupancies having an *occupant load* of 10 or less are permitted to be equipped with a night latch, *dead bolt*, manual bolt, or security chain, 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.

Add new text as follows:

TABLE 1010.2.4

MANUAL BOLTS, AUTOMATIC FLUSH BOLTS AND CONSTANT LATCHING BOLTS ON THE INACTIVE LEAF OF A PAIR OF DOORS

<u>APPLICATION WHERE A PAIR OF DOORS WITH AN ACTIVE LEAF AND INACTIVE LEAF SERVE THE FOLLOWING:</u>	<u>OCCUPANT LOAD OF SPACE SERVED BY THE PAIR OF DOORS</u>	<u>THE PAIR OF DOORS ARE REQUIRED TO COMPLY WITH SECTION 716</u>	<u>PERMITTED USES OF MANUAL BOLT LOCKS, AUTOMATIC FLUSH BOLTS AND CONSTANT LATCHING BOLTS ON THE INACTIVE LEAF OF A PAIR OF DOORS.</u>		
			<u>Manual flush bolts or manual surface bolts with manual extension and retraction of bolt.</u>	<u>Automatic flush bolts with automatic extension and retraction of bolt by action of active leaf.</u>	<u>Constant latching bolts with automatic latching and manual retraction of bolt or latch.</u>
<u>Group B, F, or S occupancy.</u>	<u>Less than 50</u>	<u>NO</u>	<u>P</u>	<u>P</u>	<u>P</u>
		<u>YES</u>	<u>NP</u>	<u>P^b</u>	<u>P</u>
<u>Group B, F, or S occupancies where the building is equipped with an automatic sprinkler system in accordance with Section 903.3.1.1, and where the inactive leaf is not needed to meet egress capacity requirements.</u>	<u>Occupant load served by the active leaf.</u>	<u>NO</u>	<u>P</u>	<u>P</u>	<u>P</u>
		<u>YES</u>	<u>NP</u>	<u>P^b</u>	<u>P</u>
<u>Patient care rooms in Group I-2 occupancies, and where the inactive leaf is not needed to meet egress capacity requirements.</u>	<u>Occupant load served by the active leaf.</u>	<u>NO</u>	<u>NP</u>	<u>P^b</u>	<u>P</u>
		<u>YES</u>	<u>NP</u>	<u>P^b</u>	<u>P</u>
<u>Occupancies where panic hardware is not required, the egress doors are used in pairs, and where both the active and inactive leaves are required to meet egress capacity requirements.</u>	<u>Occupant load served by both leaves.</u>	<u>NO</u>	<u>NP</u>	<u>P</u>	<u>NP</u>
		<u>YES</u>	<u>NP</u>	<u>P^b</u>	<u>NP</u>
<u>Storage or equipment rooms.</u>	<u>Occupant load served by the active leaf.</u>	<u>NO</u>	<u>P^a</u>	<u>P</u>	<u>P</u>
		<u>YES</u>	<u>P^a</u>	<u>P</u>	<u>P</u>

P - Permitted; NP - Not permitted.

- a. Not permitted in Group I-2 where corridor doors are required to be positive latching, and the storage or equipment room door is in the corridor.
- b. Permitted where both doors are self-closing or automatic-closing, and have a coordinator that causes the inactive leaf to be closed prior to the active leaf.

Delete without substitution:

1010.2.5 Bolt locks. Manually operated flush bolts or surface bolts are not permitted.

Exceptions:

- On doors not required for egress in individual dwelling units or sleeping units.
- Where a pair of doors serves a storage or equipment room, manually operated edge or surface-mounted bolts are permitted on the inactive leaf.
- Where a pair of doors serves an occupant load of less than 50 persons in a Group B, F or S occupancy, manually operated edge or surface-mounted bolts are permitted on the inactive leaf. The inactive leaf shall not contain doorknobs, panic bars or similar operating hardware.
- Where a pair of doors serves a Group B, F or S occupancy, manually operated edge or surface-mounted bolts are permitted on the inactive leaf provided that such inactive leaf is not needed to meet egress capacity requirements and the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. The inactive leaf shall not contain doorknobs, panic bars or similar operating hardware.
- Where a pair of doors serves patient care rooms in Group I-2 occupancies, self-latching edge or surface-mounted bolts are permitted on the inactive leaf provided that the inactive leaf is not needed to meet egress capacity requirements and the inactive leaf shall not contain doorknobs, panic bars or similar operating hardware.

Reason Statement: The IBC is rather confusing regarding dead bolts, manual bolt locks, and automatic flush bolts leading to significant variability in

interpretations and application of the code.

This proposal offers four definitions, and revises sections of the IBC where these hardware items are addressed with requirements.

The most significant revision is to incorporate all the requirements of Section 1010.2.5 into Sections 1010.2.1 and 1010.2.4.

Here's what happened with requirements and exceptions of 1010.2.5:

- The charging language that “manually operated flush bolts and surface bolts are not permitted” is revised based on the proposed definition of “manual bolt” and included in the charging language of 1010.2.1. Exception 2 of 1010.2.1 was also revised based on the definition of “manual bolt”.
- Exception 1 of 1010.2.5 is included in revised 1010.2.4 Item 5 with inserting “manual bolt” in that item.
- Exceptions 2 through 5 of 1010.2.5 are included in proposed Table 1010.2.4. Item 4 of 1010.2.4 is revised to reference Table 1010.2.4.

The applications in Exceptions 2 through 5 of 1010.2.5 are incorporated into proposed Table 1010.2.4. Also included in this table is Item 4 of 1010.2.4, which is an application where automatic flush bolt are acceptable: Spaces served by egress doors in pairs where the doors are not required to be equipped with panic hardware, and both door leaves are used for egress capacity.

Also, doors required to comply with IBC Section 716 (opening protectives) are also required to be self-latching or automatic latching. Proposed Table 1010.2.4 includes this determining factor as to what hardware may be used.

Several technical changes were incorporated in proposed Table 1010.2.4 that are not currently in these sections:-

- For Group I-2, the table clarifies manual bolt locks are not appropriate for use on patient care room doors where the door is required to be positive latching.
- The current requirements don't differentiate between doors required to be fire-rated or not. That is, required to comply with Section 716 or not.
- For I-2 patient care rooms, Exception 5 of 1010.2.5 permitted what are called constant latching bolts. But the code was silent on other applications where these door hardware items may be desired and appropriate (where the inactive leaf is not needed for egress).
- Didn't address using automatic flush bolts on the inactive leaf of patient care rooms, if the doors have closers and a coordinator which causes the inactive leaf to close prior to the active leaf.
- For storage and equipment rooms, manual bolts have been permitted, but automatic flush bolts and constant latching bolts would also be considered acceptable on the inactive leaf of storage and equipment rooms.

Manual bolt locks are typically located on the egress side of a door and have no operating parts on the other side of the door. Manual bolt are typically installed on the surface of the door panel, or installed flush with the edge or surface of the door

A dead bolt is manually extended from the egress side of the door by turning a thumb turn, or by manually pushing a button causing spring action to extend the lock bolt. Dead bolts are typically retracted (unlocked) from the egress side of the door by a thumb turn, or operation of the handle or lever. In very limited applications dead bolts may be extended and retracted by use of a key (see IBC Section 1010.2.4 Exception 3). On the ingress side of the door (the access side), dead bolts are typically extended (locked) and retracted (unlocked) by use of a key. Dead bolts are not considered to be manual bolt locks (see the definition for manual bolts).

The image below illustrates two manual bolts, an automatic flush bolt, and a constant latching (flush) bolt.



- 1 – Manual bolt mounted on the face of the door; the bolt is operated manually.
- 2 – Manual bolt mounted flush on the door edge; the bolt is projected and retracted manually using a small lever.
- 3 – Automatic flush bolt installed on the inactive leaf, and projected automatically when the active leaf closes, and retracted when the active leaf opens.
- 4 – Constant-latching (flush) bolt has a self-latching bolt which is retracted manually.



Dead bolt. Courtesy Allegion

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This proposal provides updated guidance on “shall be permitted” locking hardware, and is an attempt to bring clarity to the requirements in the IBC.

E43-21

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.

E44-21

E45-21

IBC: 1010.2.4 (IFC:[BE]1010.2.4)

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

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 doors are the main exterior doors to the building, or the doors are the main doors to the tenant space.
 - 3.13.2. The locking device is readily distinguishable as locked.
 - 3.23.3. 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.
 - 3.33.4. 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 are permitted to be equipped with a night latch, dead bolt or security chain, provided such devices are operable 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: What is now Item 3 in 2021 IBC Section 1010.2.4 permits doors to be locked not allowing ingress or egress from certain occupancies while the space is not occupied. Item 3 was revised per proposal E63-12 to recognize the main doors to a space may not be exterior doors – for example doors to a tenant space from an indoor shopping mall corridor. Unfortunately, removing the word “exterior” in what is now Item 3 has resulted in BHMA members seeing interpretations that the “main doors” can be just about any door to a space within a building. Our understanding is that this broad interpretation and application of the provisions in Item 3 are not as intended with the revisions approved in proposal.

This proposal attempts to clarify Item 3 is limited to the main exterior doors a space, or the main doors to the tenant space

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

The code proposal may increase the cost of construction if doors which were capable of being locked with a key-operated lock on the egress side would not be permitted to be locked, and a different, higher cost, lock was needed. On the other hand, this proposal may decrease the cost of construction as the locations where the key cylinder locks may be permitted may decrease slightly.

E45-21

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.

E46-21

E47-21

IBC: 1010.2.7 (IFC:[BE]1010.2.7)

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:

1010.2.7 Stairway doors. Interior *stairway* means of egress doors shall be openable from both sides without the use of a key or special knowledge or effort.

Exceptions:

1. *Stairway* discharge doors shall be openable from the egress side and shall only be locked from the opposite side.
2. This section shall not apply to doors arranged in accordance with Section 403.5.3.
3. *Stairway* exit doors are permitted to be locked from the side opposite the egress side, provided that they are openable from the egress side and capable of being unlocked simultaneously without unlatching upon one of the following:
 - 3.1. A signal from the fire command center, if present, or a signal by emergency personnel from a single location inside the main entrance to the building.
 - 3.2. Activation of a fire alarm signal when a fire alarm system is present in an area served by the stairway.
 - 3.3. Failure of the power supply.
4. *Stairway exit* doors shall be openable from the egress side and shall only be locked from the opposite side in Group B, F, M and S occupancies where the only interior access to the tenant space is from a single *exit stairway* where permitted in Section 1006.3.4.
5. *Stairway exit* doors shall be openable from the egress side and shall only be locked from the opposite side in Group R-2 occupancies where the only interior access to the *dwelling unit* is from a single *exit stairway* where permitted in Section 1006.3.4.

Staff Note: Proposals E47-21, G60-21 and G61-21 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 is an important code change for non-high rise buildings that propose to lock stairway doors from the side opposite to the side from which egress is sought. It is not unusual during an emergency or power outage that building occupants need to access other stories of a building through the stairways. The IBC seems to include provisions for unlocking of locked stairway doors by fire fighting personnel when they arrive at the scene of the incident and assess the situation. that might be quite some time for someone trapped in a vertical exit way that may for example blocked at the bottom.

Frequently door locking systems are connected to emergency backup power sources or batter systems and as a result door do not unlock during an emergency. For example, during a power outage, fire department personnel may need to access floors from stairways to perform rescue or evacuation operations for elderly persons who may have difficulty evacuating the building. My jurisdiction had a vandalism incident where hose valves for standpipes serving an 8 level plus two basement building were simultaneously opened, and the fire department was not able to access stories from the stairwell side. The remote unlocking location was not accessible due to flooding and water flow put the building into alarm and evacuation was initiated. Occupants were trapped in the stairways due to rising water level at the discharge level. While not common, this incident highlights that there may be cases where occupants may require options prior to the arrival of fire rescue personnel at a fire command center or other central location in a building.

The proposed code change does not intend to trigger a fire alarm system and is purposefully vague on whether the locking system is power by local battery backup or an emergency power circuit. This code change was adapted based on a local amendment adopted in Clark County Nevada that is attached for reference."

Section 1010.1.9.12

Amend Section 1010.1.9.12 to read as follows:

1010.1.9.12 Stairway doors. Interior *stairway means of egress* doors shall be openable from both sides without the use of a key or special knowledge or effort.

Exceptions:

1. *Unchanged*
2. *Unchanged*
3. *Stairway* exit doors are permitted to be locked from the side opposite the egress side, provided they are openable from the egress side, unlocked simultaneously without unlatching upon a signal from the *fire command center*, if present, or a signal by emergency personnel from a location inside the building.
4. *Unchanged*
5. *Unchanged*
6. Upon approval of the *building official*, *stairway* doors opening directly into *sleeping units, dwelling units* or tenant spaces are permitted to be locked from the side opposite the egress side, provided they are openable from the egress side. The doors are permitted to unlock without unlatching only upon signal from the *fire command center*, if present, or a signal by emergency personnel from an *approved* location inside the building.

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

The cost impact should be minimal since the stairway doors are controlled remotely and therefore require an additional signal. Backup power is usually at the lock so when power is lost it unlocks if the battery is depleted.

E47-21

E48-21

IBC: 1010.2.9 (IFC:[BE]1010.2.9)

Proponents: Daniel Willham, representing Fairfax County (daniel.willham@fairfaxcounty.gov)

2021 International Building Code

Revise as follows:

1010.2.9 Panic and fire exit hardware. Swinging doors serving a Group H occupancy and swinging doors serving rooms or spaces with an *occupant load* of 50 or more in a Group A or E occupancy shall not be provided with a latch or lock other than *panic hardware* or *fire exit hardware*.

Exceptions:

1. A main exit of a Group A occupancy shall be permitted to have locking devices in accordance with Section 1010.2.4, Item 3.
2. Doors provided with *panic hardware* or *fire exit hardware* and serving a Group A or E occupancy shall be permitted to be electrically locked in accordance with Section 1010.2.11 ~~or 1010.2.12~~.
3. Exit access doors serving occupied exterior areas shall be permitted to be locked in accordance with Section 1010.2.4, Item 8.
4. Courtrooms shall be permitted to be locked in accordance with Section 1010.2.13, Item 3.

Reason Statement: A recent change added sensor released doors to be used where panic hardware is required. Some have understood this section to not require panic hardware when sensor released locks are used, despite it explicitly stating that it applies to doors provided with panic hardware. Section 1010.2.12 of the code recognizes that motion sensors are not reliable when it comes to life-safety since a wall mounted push-button release is required adjacent to the door for use when the motion detector fails to release the door. This is not functionally equivalent to the reliability of listed panic hardware and is not a suitable a substitute.

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

A significant increase or decrease in cost is not expected since listed hardware is required either way. This change would revert the code to the 2015 language.

E48-21

E49-21

IBC: 1010.2.10 (New) [IFC:[BE]1010.2.10 (New)]

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

2021 International Building Code

Add new text as follows:

1010.2.10 Access control door locking systems. Where electrical door locking systems that prevent or control ingress to a space are incorporated in a locking system of a door in the means of egress, the locking system shall comply with Section 1010.2.12, 1010.2.13, 1010.2.14, 1010.2.15, or 1010.2.16, or shall be readily openable from the egress side without the use of a key or special knowledge or effort.

Reason Statement: Modeled from and similar to current 2021 IBC Section 1010.2.10 Monitored or recorded egress, this proposed section describes how access control systems – ingress control systems – may be incorporated into the locking system of a door in the means of egress. This proposed section of the IBC is technically not necessary in the IBC as the IBC is essentially silent regarding requirements for ingress control systems (access control systems). In other words, what is not prohibited by the code is, by default, permitted.

However, BHMA members are being drawn into conversations and debates with code officials as to what section(s) of the IBC with requirements for door locking arrangements are applicable to electrical locking systems which control or prevent **ingress** to a space (access control systems). This proposed new section is intended to prevent these debates by requiring doors in the means of egress which incorporate ingress control systems (access control systems) to require, on the egress side of the door, the door to be readily openable without the use of a key or special knowledge or effort, or comply with any one of the “shall be permitted” electrical locking systems.

FYI: with relatively few exceptions, the code does not regulate ingress control / access control into a building or room. For most doors, the building owner / occupant can do as desired regarding ingress control (access control) as long as all the requirements for egress are satisfied. The code does have requirements for stairway re-entry into the building (IBC Section 1010.2.7 Stairway doors), for authorized personnel access into locked occupied rooms (IBC Section 1010.2.8 Locking arrangements in educational occupancies), and for access to pools (IBC Section 1010.2.3, and ISPSC).

Cost Impact: The code change proposal will increase the cost of construction
This proposal would not increase the cost of construction as ingress control systems are not required by the IBC.

E49-21

E50-21

IBC: 1010.2.11, 1010.2.12 (IFC:[BE]1010.2.11, 1010.2.12)

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

2021 International Building Code

Revise as follows:

1010.2.11 Door hardware release of electrically locked egress doors. Door hardware release of electric locking systems shall be permitted on the egress side of doors in the *means of egress* in any occupancy except Group H where installed and operated in accordance with all of the following:

1. The door hardware that is affixed to the door leaf has an obvious method of operation that is readily operated under all lighting conditions.
2. The door hardware is capable of being operated with one hand and shall comply with Section 1010.2.1.
3. Operation of the door hardware directly interrupts the power to the electric lock and unlocks the door immediately.
4. Loss of power to the electric locking system automatically unlocks the door.
5. Where *panic* or *fire exit hardware* is required by Section 1010.2.9, operation of the *panic* or *fire exit hardware* also releases the electric lock.
6. The locking system units shall be *listed* in accordance with UL 294.

1010.2.12 Sensor release of electrically locked egress doors. Sensor release of electric locking systems shall be permitted on the egress side of doors located in the *means of egress* in any occupancy except Group H where installed and operated in accordance with all of the following criteria:

1. The sensor shall be installed on the egress side, arranged to detect an occupant approaching the doors, and shall cause the electric locking system to unlock.
2. The electric locks shall be arranged to unlock by a signal from or loss of power to the sensor.
3. Loss of power to the lock or locking system shall automatically unlock the electric locks.
4. The doors shall be arranged to unlock from a manual unlocking device located 40 inches to 48 inches (1016 mm to 1219 mm) vertically above the floor and within 5 feet (1524 mm) of the secured doors. Ready access shall be provided to the manual unlocking device and the device shall be clearly identified by a sign that reads "PUSH TO EXIT." When operated, the manual unlocking device shall result in direct interruption of power to the electric lock—independent of other electronics—and the electric lock shall remain unlocked for not less than 30 seconds.
5. Activation of the building *fire alarm system*, where provided, shall automatically unlock the electric lock, and the electric lock shall remain unlocked until the *fire alarm system* has been reset.
6. Activation of the building *automatic sprinkler system* or fire detection system, where provided, shall automatically unlock the electric lock. The electric lock shall remain unlocked until the *fire alarm system* has been reset.
7. Emergency lighting shall be provided on the egress side of the door.
8. The door locking system units shall be *listed* in accordance with UL 294.

Reason Statement: The requirements of these two section apply on the egress side of doors should either of these electrical locking systems be incorporated on doors in the means of egress.

BHMA members are seeing some code officials enforcing these requirements on the ingress side of the door (i.e. the access side of the door; the side of the door opposite the egress side of the door).

This proposal attempts to clarify which side of a door in the means of egress these requirements are applicable to.

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

The proposed revisions to these locking systems, which are not required by the IBC, should not affect costs. This proposal may decrease costs if AHJ's are inadvertently enforcing these shall be permitted locking arrangements on the ingress side of the door.

E51-21

IBC: 1010.2.11, 1010.2.12, 1010.2.13, 1010.2.13.1, 1010.2.14 (IFC:[BE]1010.2.11, 1010.2.12, 1010.2.13, 1010.2.13.1, 1010.2.14)

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

2021 International Building Code

Revise as follows:

1010.2.11 Door hardware release of electrically locked egress doors. Door hardware release of ~~electric~~ electrical locking systems shall be permitted on doors in the *means of egress* in any occupancy except Group H where installed and operated in accordance with all of the following:

1. The door hardware that is affixed to the door leaf has an obvious method of operation that is readily operated under all lighting conditions.
2. The door hardware is capable of being operated with one hand and shall comply with Section 1010.2.1.
3. Operation of the door hardware directly interrupts the power to the electric lock and unlocks the door immediately.
4. Loss of power to the electrical locking system automatically unlocks the ~~door~~ electric lock.
5. Where *panic* or *fire exit hardware* is required by Section 1010.2.9, operation of the *panic* or *fire exit hardware* also releases the electric lock.
6. The locking system units shall be *listed* in accordance with UL 294.

1010.2.12 Sensor release of electrically locked egress doors. Sensor release of ~~electric~~ electrical locking systems shall be permitted on doors located in the *means of egress* in any occupancy except Group H where installed and operated in accordance with all of the following criteria:

1. The sensor shall be installed on the egress side, arranged to detect an occupant approaching the doors, and shall cause the electrical locking system to unlock the electric lock.
2. ~~The electric locks shall be arranged to unlock by a signal from or loss of power to the sensor. Upon a signal from a sensor or loss of power to the sensor, the electrical locking system shall unlock the electric lock.~~
3. Loss of power to the electric lock or electrical locking system shall automatically unlock the electric locks.
4. The doors shall be arranged to unlock the electric lock from a manual unlocking device located 40 inches to 48 inches (1016 mm to 1219 mm) vertically above the floor and within 5 feet (1524 mm) of the secured doors. Ready access shall be provided to the manual unlocking device and the device shall be clearly identified by a sign that reads "PUSH TO EXIT." When operated, the manual unlocking device shall result in direct interruption of power to the electric lock—*independent of other electronics*—and the electric lock shall remain unlocked for not less than 30 seconds.
5. Activation of the building *fire alarm system*, where provided, shall automatically unlock the electric lock, and the electric lock shall remain unlocked until the *fire alarm system* has been reset.
6. Activation of the building *automatic sprinkler system* or fire detection system, where provided, shall automatically unlock the electric lock. The electric lock shall remain unlocked until the *fire alarm system* has been reset.
7. Emergency lighting shall be provided on the egress side of the door.
8. The door locking system units shall be *listed* in accordance with UL 294.

1010.2.13 Delayed egress. Delayed egress electrical locking systems shall be permitted ~~to be installed~~ on doors in the means of egress serving the following occupancies in buildings that are equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or an *approved automatic smoke or heat detection system* installed in accordance with Section 907.

1. Group B, F, I, M, R, S and U occupancies.
2. Group E classrooms with an *occupant load* of less than 50.
3. In courtrooms in Group A-3 and B occupancies, delayed egress electrical locking systems shall be permitted to be installed on exit or *exit access doors*, other than the main exit or *exit access door*, in buildings that are equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

1010.2.13.1 Delayed egress locking system. The delayed egress electrical locking system shall be installed and operated in accordance with all of the following:

1. The delay ~~electronics~~ of the delayed egress electrical locking system shall deactivate upon actuation of the *automatic sprinkler system* or *automatic fire detection system*, allowing immediate free egress.

2. The delay ~~electronics~~ of the delayed egress electrical locking system shall deactivate upon loss of power ~~controlling to the lock~~ electrical locking system or electric lock ~~mechanism~~, allowing immediate free egress.
3. The ~~delay of the~~ delayed egress electrical locking system shall have the capability of being deactivated at the *fire command center* and other *approved* locations.
4. An attempt to egress shall initiate an irreversible process that shall allow such egress in not more than 15 seconds when a physical effort to exit is applied to the egress side door hardware for not more than 3 seconds. Initiation of the irreversible process shall activate an audible signal in the vicinity of the door. Once the delay ~~electronics have~~ has been deactivated, rearming the delay electronics shall be by manual means only.

Exception: Where *approved*, a delay of not more than 30 seconds is permitted on a delayed egress door.

5. The egress path from any point shall not pass through more than one delayed egress locking system.

Exceptions:

1. In Group I-1, Condition 2, Group I-2 or I-3 occupancies, the egress path from any point in the building shall pass through not more than two delayed egress locking systems provided that the combined delay does not exceed 30 seconds.
2. In Group I-1, Condition 1 or Group I-4 occupancies, the egress path from any point in the building shall pass through not more than two delayed egress locking systems provided the combined delay does not exceed 30 seconds and the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
6. A sign shall be provided on the door and shall be located above and within 12 inches (305 mm) of the door exit hardware.

Exception: Where approved, in Group I occupancies, the installation of a sign is not required where care recipients who because of clinical needs require restraint or containment as part of the function of the treatment area.

- 6.1. For doors that swing in the direction of egress, the sign shall read, "PUSH UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30] SECONDS."
- 6.2. For doors that swing in the opposite direction of egress, the sign shall read, "PULL UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30] SECONDS."
- 6.3. The sign shall comply with the visual character requirements in ICC A117.1.
7. Emergency lighting shall be provided on the egress side of the door.
8. The delayed egress locking system units shall be *listed* in accordance with UL 294.

1010.2.14 Controlled egress doors in Groups I-1 and I-2. ~~Electric-Controlled egress electrical locking systems, including electro-mechanical locking systems and electromechanical locking systems, where egress is controlled by authorized personnel, shall be permitted to be locked on doors in the means of egress in Group I-1 or I-2 occupancies where the clinical needs of persons receiving care require their containment.~~ Controlled egress doors shall be permitted in such occupancies where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or an *approved automatic smoke detection system* installed in accordance with Section 907, provided that the doors are installed and operate in accordance with all of the following:

1. The door's electric locks shall unlock on actuation of the *automatic sprinkler system* or *automatic smoke detection system*, allowing immediate free egress.
2. The door's electric locks shall unlock on loss of power ~~controlling to the lock~~ electrical locking system or to the electric lock mechanism, allowing immediate free egress.
3. The ~~door electrical~~ locking system shall be installed to have the capability of ~~being unlocked~~ unlocking the electric locks by a switch located at the *fire command center*, a nursing station or other *approved* location. The switch shall directly break power to the electric lock.
4. A building occupant shall not be required to pass through more than one door equipped with a controlled egress locking system before entering an *exit*.
5. The procedures for unlocking the doors shall be described and *approved* as part of the emergency planning and preparedness required by Chapter 4 of the International Fire Code.
6. All clinical staff shall have the keys, codes or other means necessary to operate the controlled egress electrical locking systems.
7. Emergency lighting shall be provided at the door.
8. The door locking system units shall be *listed* in accordance with UL 294.

Exceptions:

1. Items 1 through 4 shall not apply to doors to areas occupied by persons who, because of clinical needs, require restraint or containment as part of the function of a psychiatric or cognitive treatment area.
2. Items 1 through 4 shall not apply to doors to areas where a *listed* egress control system is utilized to reduce the risk of child abduction from nursery and obstetric areas of a Group I-2 *hospital*.

Reason Statement: Proposing editorial revisions to the four “shall be permitted” electrical locking systems to to improve the grammar of these sections, and clarify the requirements of each system.

Some of the revisions were made from this grammar perspective:

Electrical means of or relating to electricity, such as an electrical system or an electrical fault.

Electric is typically used when referring to devices which run on electricity, such as an electric lock.

Other revisions are intended to reduce ambiguity of the requirements of these electrical locking systems.

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

There's a possibility this proposal may decrease the cost of construction if it helps with consistency of interpretation, application, and enforcement of these electrical door locking provisions. This proposal is intended to not change the technical requirements of these electrical locking systems.

E51-21

E52-21

IBC: 1010.2.11, 1010.2.12, 1010.2.13.1, 1010.2.14, UL Chapter 35 (New) [IFC:[BE]1010.2.11, 1010.2.12, 1010.2.13.1, 1010.2.14, UL Chapter 80 (New)]

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

2021 International Building Code

Revise as follows:

1010.2.11 Door hardware release of electrically locked egress doors. Door hardware release of electric locking systems shall be permitted on doors in the *means of egress* in any occupancy except Group H where installed and operated in accordance with all of the following:

1. The door hardware that is affixed to the door leaf has an obvious method of operation that is readily operated under all lighting conditions.
2. The door hardware is capable of being operated with one hand and shall comply with Section 1010.2.1.
3. Operation of the door hardware directly interrupts the power to the electric lock and unlocks the door immediately.
4. Loss of power to the electric locking system automatically unlocks the door.
5. Where *panic* or *fire exit hardware* is required by Section 1010.2.9, operation of the *panic* or *fire exit hardware* also releases the electric lock.
6. The ~~locking system units~~ electro-mechanical or electromagnetic locking device shall be *listed* in accordance with either UL 294 or UL 1034.

1010.2.12 Sensor release of electrically locked egress doors. Sensor release of electric locking systems shall be permitted on doors located in the *means of egress* in any occupancy except Group H where installed and operated in accordance with all of the following criteria:

1. The sensor shall be installed on the egress side, arranged to detect an occupant approaching the doors, and shall cause the electric locking system to unlock.
2. The electric locks shall be arranged to unlock by a signal from or loss of power to the sensor.
3. Loss of power to the lock or locking system shall automatically unlock the electric locks.
4. The doors shall be arranged to unlock from a manual unlocking device located 40 inches to 48 inches (1016 mm to 1219 mm) vertically above the floor and within 5 feet (1524 mm) of the secured doors. Ready access shall be provided to the manual unlocking device and the device shall be clearly identified by a sign that reads "PUSH TO EXIT." When operated, the manual unlocking device shall result in direct interruption of power to the electric lock—*independent of other electronics*—and the electric lock shall remain unlocked for not less than 30 seconds.
5. Activation of the building *fire alarm system*, where provided, shall automatically unlock the electric lock, and the electric lock shall remain unlocked until the *fire alarm system* has been reset.
6. Activation of the building *automatic sprinkler system* or fire detection system, where provided, shall automatically unlock the electric lock. The electric lock shall remain unlocked until the *fire alarm system* has been reset.
7. Emergency lighting shall be provided on the egress side of the door.
8. The ~~door locking system units~~ electro-mechanical or electromagnetic locking device shall be *listed* in accordance with either UL 294 or UL 1034.

1010.2.13.1 Delayed egress locking system. The delayed egress locking system shall be installed and operated in accordance with all of the following:

1. The delay electronics of the delayed egress locking system shall deactivate upon actuation of the *automatic sprinkler system* or *automatic fire detection system*, allowing immediate free egress.
2. The delay electronics of the delayed egress locking system shall deactivate upon loss of power controlling the lock or lock mechanism, allowing immediate free egress.
3. The delayed egress locking system shall have the capability of being deactivated at the *fire command center* and other *approved* locations.
4. An attempt to egress shall initiate an irreversible process that shall allow such egress in not more than 15 seconds when a physical effort to exit is applied to the egress side door hardware for not more than 3 seconds. Initiation of the irreversible process shall activate an audible signal in the vicinity of the door. Once the delay electronics have been deactivated, rearming the delay electronics shall be by manual means only.

Exception: Where *approved*, a delay of not more than 30 seconds is permitted on a delayed egress door.

5. The egress path from any point shall not pass through more than one delayed egress locking system.

Exceptions:

1. In Group I-1, Condition 2, Group I-2 or I-3 occupancies, the egress path from any point in the building shall pass through not more than two delayed egress locking systems provided that the combined delay does not exceed 30 seconds.
2. In Group I-1, Condition 1 or Group I-4 occupancies, the egress path from any point in the building shall pass through not more than two delayed egress locking systems provided the combined delay does not exceed 30 seconds and the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

6. A sign shall be provided on the door and shall be located above and within 12 inches (305 mm) of the door exit hardware.

Exception: Where approved, in Group I occupancies, the installation of a sign is not required where care recipients who because of clinical needs require restraint or containment as part of the function of the treatment area.

- 6.1. For doors that swing in the direction of egress, the sign shall read, "PUSH UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30] SECONDS."
 - 6.2. For doors that swing in the opposite direction of egress, the sign shall read, "PULL UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30] SECONDS."
 - 6.3. The sign shall comply with the visual character requirements in ICC A117.1.
7. Emergency lighting shall be provided on the egress side of the door.
8. ~~The delayed egress locking system units~~ electro-mechanical or electromagnetic locking device shall be *listed* in accordance with either UL 294 or UL 1034.

1010.2.14 Controlled egress doors in Groups I-1 and I-2. Electric locking systems, including electro-mechanical locking systems and electromagnetic locking systems, shall be permitted to be locked in the *means of egress* in Group I-1 or I-2 occupancies where the clinical needs of persons receiving care require their containment. Controlled egress doors shall be permitted in such occupancies where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or an *approved automatic smoke detection system* installed in accordance with Section 907, provided that the doors are installed and operate in accordance with all of the following:

1. The door locks shall unlock on actuation of the *automatic sprinkler system* or *automatic smoke detection system*.
2. The door locks shall unlock on loss of power controlling the lock or lock mechanism.
3. The door locking system shall be installed to have the capability of being unlocked by a switch located at the *fire command center*, a nursing station or other *approved* location. The switch shall directly break power to the lock.
4. A building occupant shall not be required to pass through more than one door equipped with a controlled egress locking system before entering an *exit*.
5. The procedures for unlocking the doors shall be described and *approved* as part of the emergency planning and preparedness required by Chapter 4 of the International Fire Code.
6. All clinical staff shall have the keys, codes or other means necessary to operate the locking systems.
7. Emergency lighting shall be provided at the door.
8. ~~The door locking system units~~ electro-mechanical or electromagnetic locking device shall be *listed* in accordance with either UL 294 or UL 1034.

Exceptions:

1. Items 1 through 4 shall not apply to doors to areas occupied by persons who, because of clinical needs, require restraint or containment as part of the function of a psychiatric or cognitive treatment area.
2. Items 1 through 4 shall not apply to doors to areas where a *listed* egress control system is utilized to reduce the risk of child abduction from nursery and obstetric areas of a Group I-2 *hospital*.

Add new standard(s) as follows:

UL

UL LLC
333 Pfingsten Road
Northbrook IL 60062

UL 1034-2011: Burglary-Resistant Electric Locking Mechanisms – with revisions through June 2020

Staff Analysis: A review of the standard proposed for inclusion in the code, UL 1034-2011, 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: This code change proposal will add an additional listing option to these four “shall be permitted” electrical locking systems for UL 1034. Listing to UL 1034 will provide an additional safety and performance certification option for the electro-mechanical or electromagnetic lock devices that typically is part of an electrical locking system.

These sections have created confusion for building designers specifying electric locking systems and for code officials approving systems for this application. The proposed revisions will help eliminate that confusion by allowing what is already available and commonly utilized for these applications. The addition of UL 1034 is also intended to provide clarity as to allow these code sections to match the certified products in use and available in the market.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
It provides an additional standard by which to certify components already required to be listed. This may reduce the cost of construction.

E52-21

E53-21

IBC: 1010.2.12 (IFC:[BE]1010.2.12)

Proponents: Daniel Willham, representing Fairfax County (daniel.willham@fairfaxcounty.gov)

2021 International Building Code

Revise as follows:

1010.2.12 Sensor release of electrically locked egress doors. Sensor release of electric locking systems shall be permitted on doors located in the *means of egress* in any occupancy except Group H where installed and operated in accordance with all of the following criteria:

1. The sensor shall be installed on the egress side, arranged to detect an occupant approaching the doors, and shall cause the electric locking system to unlock.
2. The electric locks shall be arranged to unlock by a signal from or loss of power to the sensor.
3. Loss of power to the lock or locking system shall automatically unlock the electric locks.
4. The doors shall be arranged to unlock from a manual unlocking device located 40 inches to 48 inches (1016 mm to 1219 mm) vertically above the floor and within 5 feet (1524 mm) of the secured doors. Ready access shall be provided to the manual unlocking device and the device shall be clearly identified by a sign that reads "PUSH TO EXIT." When operated, the manual unlocking device shall result in direct interruption of power to the electric lock—independent of other electronics—and the electric lock shall remain unlocked for not less than 30 seconds.
5. Activation of the building *fire alarm system*, where provided, shall automatically unlock the electric lock, and the electric lock shall remain unlocked until the *fire alarm system* has been reset.
6. Activation of the building *automatic sprinkler system* or fire detection system, where provided, shall automatically unlock the electric lock. The electric lock shall remain unlocked until the *fire alarm system* has been reset.
7. Emergency lighting shall be provided on the egress side of the door.
8. The door locking system units shall be *listed* in accordance with UL 294.
9. Where *panic or fire exit hardware* is required by Section 1010.2.9, operation of the *panic or fire exit hardware* also releases the electric lock.

Reason Statement: A prior code change added this section to the options for providing panic hardware. This change adds requirements for sensor released doors where panic hardware is required similar to that of section **1010.2.11 Door hardware release of electrically locked egress doors**, item 5, by adding the same language to require panic hardware to release the sensor controlled lock. This code section already recognizes that motion sensors are a convenience and not always reliable when it comes to life-safety since a wall mounted push-button release is required adjacent to the door for use when the motion detector fails to release the door, which is not functionally equivalent to the reliability of listed panic hardware.

Cost Impact: The code change proposal will increase the cost of construction. This change *may* increase the cost somewhat, but up until the 2018 code, it was not permitted to use sensor release locks with panic hardware. The prior change should have included this requirement.

E53-21

E54-21

IBC: 1010.2.15 (New) [IFC:[BE]1010.2.15 (New)]

Proponents: Jeff Manzetti, representing Self-Represented (jeffmanzetti@mac.com)

2021 International Building Code

1010.2.14 Controlled egress doors in Groups I-1 and I-2. Electric locking systems, including electro-mechanical locking systems and electromagnetic locking systems, shall be permitted to be locked in the *means of egress* in Group I-1 or I-2 occupancies where the clinical needs of persons receiving care require their containment. Controlled egress doors shall be permitted in such occupancies where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or an *approved automatic smoke detection system* installed in accordance with Section 907, provided that the doors are installed and operate in accordance with all of the following:

1. The door locks shall unlock on actuation of the *automatic sprinkler system* or *automatic smoke detection system*.
2. The door locks shall unlock on loss of power controlling the lock or lock mechanism.
3. The door locking system shall be installed to have the capability of being unlocked by a switch located at the *fire command center*, a nursing station or other *approved* location. The switch shall directly break power to the lock.
4. A building occupant shall not be required to pass through more than one door equipped with a controlled egress locking system before entering an *exit*.
5. The procedures for unlocking the doors shall be described and *approved* as part of the emergency planning and preparedness required by Chapter 4 of the International Fire Code.
6. All clinical staff shall have the keys, codes or other means necessary to operate the locking systems.
7. Emergency lighting shall be provided at the door.
8. The door locking system units shall be *listed* in accordance with UL 294.

Exceptions:

1. Items 1 through 4 shall not apply to doors to areas occupied by persons who, because of clinical needs, require restraint or containment as part of the function of a psychiatric or cognitive treatment area.
2. Items 1 through 4 shall not apply to doors to areas where a *listed* egress control system is utilized to reduce the risk of child abduction from nursery and obstetric areas of a Group I-2 *hospital*.

Add new text as follows:

1010.2.16 Controlled egress doors in airport passenger terminals with Group A occupancy. Electric locking systems, including electro-mechanical locking systems and electromagnetic locking systems, shall be permitted to be locked in the means of egress in Group A occupancies at airport passenger terminals where the security needs of passenger safety requires their containment. Controlled egress doors shall be permitted in such occupancies where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or an approved automatic smoke or heat detection system installed in accordance with Section 907, provided that the doors are installed and operate in accordance with all of the following:

1. The door locks shall unlock on actuation of the *automatic sprinkler system* or *automatic smoke detection system*.
2. The door locks shall unlock on loss of power controlling the lock or lock mechanism.
3. The door locking system shall be installed to have the capability of being unlocked by a switch located at the *fire command center*, the airports security office, or other *approved* location. The switch shall directly break power to the lock.
4. A building occupants shall not be required to pass through more than one door equipped with a controlled egress locking system before entering an *exit*.
5. The procedures for unlocking the doors shall be described and *approved* as part of the emergency planning and preparedness required by Chapter 4 of the *International Fire Code*.
6. All security staff shall have the keys, codes or other means necessary to operate the locking systems.
7. Emergency lighting shall be provided at the door.
8. The door locking system units shall be *listed* in accordance with UL 294.

Reason Statement: Note: Please reference 1010.2.14 as it is related to the reason.

Short Summary: For all the same reasons section 1010.2.14 exists for use in Healthcare occupancies, a similar section needs to exist for Assembly occupancies in Airport Passenger Terminals.

Detailed Version:

As passenger's "clear" security, they are supposedly clean with threats to the Airport, others, and the aircraft, all of which would result in high loss of life if not for screening procedures in place by Transportation Security Administration and Homeland Security. This Sterile area is considered by the IBC to be an Assembly area. Large amounts of occupants (Aircraft Capacity) assemble in the sterile area, it consists of the Concourse and Hold-room at Gate locations, and overall, it can be called the Airport Passenger Terminal. This Assembly area is where security measures and life safety objectives are in contradiction. The Exits from this area would benefit from proven measures already in place in the Code. One such, place is 1010.2.14. Controlled egress doors in Group I-1 and I-2. Exactly that condition for Life safety in the terminal is needed. In day-to-day operations controlling the lock is needed for a number of reasons, but most notably for threat security. Airport staff are, in their day to day tasks "escorting" or controlling egress as per TSA guidelines through the doors. Similar to Clinic Staff controlling patients that leave the space. However, under evacuation procedures the exit door would need to provide the appropriate level of emergency egress, just as described in the I-2 and I-2 section "...provided that the doors are installed and operate in accordance with all of the items listed in section 1010.2.14." All of which are recommended at an Airport as well and are included but revised to describe Airports. This addition to the code converts Section 1010.2.14 to be applicable to Airport Passenger Terminals and be added as it's own section. 1010.2.16 Controlled Egress Doors in Airport Passenger Terminals with Group A Occupancy.

Bibliography: TSA:<https://www.tsa.gov/travel/security-screening>

Transportation Research Board, Airport Cooperative Research Program (ACRP) Report 25, Airport Passenger Terminal Planning and Design Guidebook, Washington DC, Cooperative Research Program, 2010

Transportation Research Board, Airport Cooperative Research Program (ACRP) Report 96, Apron Planning and Design Guidebook, Washington DC, Cooperative Research Program, 2013

US Department of Transportation Federal Aviation Administration, AC 150/5360-13A, Planning and Design Guidelines for Airport Terminal Facilities, dated July 13, 2018

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

There will be no change to construction cost. If anything a single compliant controllable hardware system will be less cost than multiple systems, (Cameras, Access Control, Delayed Egress set to immediate release) to achieve work arounds and getting approvals through variance or local sign-off.

E54-21

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.

E55-21

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.

1. *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.
2. 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.

3. 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.

4. *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.

E57-21

IBC: 1010.3.2 (IFC:[BE]1010.3.2)

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

2021 International Building Code

Revise as follows:

1010.3.2 Power-operated doors. Where means of egress doors are operated or assisted by power, the design shall be such that in the event of power failure, the door is capable of being opened manually to permit means of egress travel or closed where necessary to safeguard *means of egress*. The forces required to open these doors manually shall not exceed those specified in Section 1010.1.3, except that the force to set the door in motion shall not exceed 50 pounds (220 N). The door shall be capable of opening from any position to the full width of the opening in which such door is installed when a force is applied to the door on the side from which egress is made. *Power-operated* swinging doors, *power-operated* sliding doors and *power-operated* folding doors shall comply with BHMA A156.10. *Power-assisted* swinging doors and low-energy *power-operated* swinging doors shall comply with BHMA A156.19. Low-energy *power-operated* sliding doors and low-energy *power-operated* folding doors shall comply with BHMA A156.38. Where an automatic sprinkler system or automatic fire detection system is provided, upon activation of such system power-operated doors required to be fire-rated shall automatically close and shall deactivate the powered operation of the doors.

Exceptions:

1. Occupancies in Group I-3.
2. Special purpose horizontal sliding, accordion or folding doors complying with Section 1010.3.3.
3. For a biparting door in the emergency *breakout* mode, a door leaf located within a multiple-leaf opening shall be exempt from the minimum 32-inch (813 mm) single-leaf requirement of Section 1010.1.1, provided that a minimum 32-inch (813 mm) clear opening is provided when the two biparting leaves meeting in the center are broken out.

Reason Statement: Doors required to be fire-rated are required by the IBC to comply with NFPA 80. NFPA 80, with different wording, requires power-operated fire-rated doors to close, and to also disable the power operation of the doors to prevent activation of the powered operation by falling debris. This proposal is help prevent a too common oversight in the construction process.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
There should not be an increase in cost as this is a current requirement, but the requirement is within a reference standard.

E57-21

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.

E58-21

E59-21

IBC: 1011.3, 1011.5.5.1, 1011.5.5.2, 1014.2, 1015.3 (IFC:[BE]1011.3, 1011.5.5.1, 1011.5.5.2, 1014.2, 1015.3)

Proponents: David Cooper, representing Stairbuilders and Manufacturers Association (Coderep@stairways.org)

2021 International Building Code

Revise as follows:

1011.3 Headroom. *Stairways* shall have a headroom clearance of not less than 80 inches (2032 mm) measured vertically from a line connecting ~~the edge of the nosings.~~ Such headroom shall be continuous above the *stairway* to the point where the line intersects the landing below, one tread depth beyond the bottom riser. The minimum clearance shall be maintained the full width of the *stairway* and landing.

Exceptions:

1. *Spiral stairways* complying with Section 1011.10 are permitted a 78-inch (1981 mm) headroom clearance.
2. In Group R-3 occupancies; within *dwelling units* in Group R-2 occupancies; and in Group U occupancies that are accessory to a Group R-3 occupancy or accessory to individual *dwelling units* in Group R-2 occupancies; where the *nosings* of treads at the side of a *flight* extend under the edge of a floor opening through which the *stair* passes, the floor opening shall be allowed to project horizontally into the required headroom not more than 4³/₄ inches (121 mm).

1011.5.5.1 Nosing projection size. The ~~leading edge (nosings) of treads~~ nosings shall project not more than 1¹/₄ inches (32 mm) beyond the tread below.

1011.5.5.2 Nosing projection uniformity. ~~Nosing projections of the leading edges~~ shall be of uniform size, including the projections of the ~~nosings' leading edge nosings~~ of the floor or landing at the top of a *flight*.

1014.2 Height. *Handrail* height, measured above ~~stair tread~~ the nosings of flights of stairs or finish surface of *ramp* slope, shall be uniform, not less than 34 inches (864 mm) and not more than 38 inches (965 mm). *Handrail* height of *alternating tread devices* and ships ladders, measured above ~~tread~~ the nosings, shall be uniform, not less than 30 inches (762 mm) and not more than 34 inches (864 mm).

Exceptions:

1. Where *handrail* fittings or bendings are used to provide continuous transition between flights, the fittings or bendings shall be permitted to exceed the maximum height.
2. In Group R-3 occupancies; within *dwelling units* in Group R-2 occupancies; and in Group U occupancies that are associated with a Group R-3 occupancy or associated with individual *dwelling units* in Group R-2 occupancies; where *handrail* fittings or bendings are used to provide continuous transition between flights, transition at *winder* treads, transition from *handrail* to guard, or where used at the start of a *flight*, the *handrail* height at the fittings or bendings shall be permitted to exceed the maximum height.
3. *Handrails* on top of a *guard* where permitted along stepped *aisles* and ramped *aisles* in accordance with Section 1030.16.

1015.3 Height. Required *guards* shall be not less than 42 inches (1067 mm) high, measured vertically as follows:

1. From the adjacent walking surfaces.
2. On *stairways* and stepped *aisles*, from the line connecting the ~~leading edges of the tread nosings~~.
3. On *ramps* and ramped *aisles*, from the *ramp* surface at the guard.

Exceptions:

1. For occupancies in Group R-3 not more than three stories above grade in height and within individual *dwelling units* in occupancies in Group R-2 not more than three stories above grade in height with separate *means of egress*, required *guards* shall be not less than 36 inches (914 mm) in height measured vertically above the adjacent walking surfaces.
2. For occupancies in Group R-3, and within individual *dwelling units* in occupancies in Group R-2, *guards* on the open sides of *stairs* shall have a height not less than 34 inches (864 mm) measured vertically from a line connecting the ~~nosings leading edges of the treads~~.
3. For occupancies in Group R-3, and within individual *dwelling units* in occupancies in Group R-2, where the top of the *guard* serves as a *handrail* on the open sides of *stairs*, the top of the *guard* shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the ~~nosings leading edges of the treads~~.
4. The *guard* height in assembly seating areas shall comply with Section 1030.17 as applicable.

5. Along *alternating tread devices* and ships ladders, *guards* where the top rail serves as a *handrail* shall have height not less than 30 inches (762 mm) and not more than 34 inches (864 mm), measured vertically from a line connecting the leading edge of the treads~~device tread nosing~~.
6. In Group F occupancies where *exit access stairways* serve fewer than three stories and such *stairways* are not open to the public, and where the top of the *guard* also serves as a *handrail*, the top of the *guard* shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the nosings~~leading edges of the treads~~.

Reason Statement: The intent of this proposal is to clarify and correct the references to the leading edge of treads and landings through out sections 1011 Stairways, 1014 Handrails, and 1015 Guards by substitution and/or corrected use of the defined term NOSING. The term Nosing(s) is defined in Chapter 2 of the IBC as:

"NOSING. The leading edge of treads of stairs and of landings at the top of stairway flights."

Understanding the definition, it is clear that the text marked for deletion in each of these code sections is redundant, confusing and unnecessary if the defined term is used properly.

In **1011.3 Headroom** "the edge of the nosing" would read as "the edge of the leading edge" when the definition of nosing is substituted. This is the most simple example. Where similar the substitutions/corrections in other parts of the code have been made, the need to eliminate such redundancy and provide clarification becomes more obvious.

This becomes painfully obvious in **1011.5.5.1 Nosing projection size**. The current text should be interpreted to read "*The leading edge (the leading edge of treads of stairway and of landings at the top of stairway flights) of treads shall project...*". At best it is confusing to those who understand the defined term. Worst case scenario, the current language is misunderstood to not include the nosings at landings.

The addition of "or landing" to 1011.5.5.2 is important to clarify that landings at the top of a flight but not at a just a "floor" level must also comply and be included. Although a floor at the top of a flight provides the required landing, it is possible to have an intermediate landing that is not at a "floor" level.

Similar substitutions/corrections have been made to both the handrail height and guard height sections. In Exception 5 of 1015.3 related to Alternating Tread Devices, the term "a line connecting" has been added to accurately describe where to measure from however the reference to treads is used because alternating tread devices are not considered a flight of stairs and the term nosing has been correctly deleted.

As an editorial note "nosing" should be in italics throughout the published code text to conform with the current formatting practice.

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

E60-21

IBC: 1011.5.2 (IFC:[BE]1011.5.2)

Proponents: Marsha Mazz, representing United Spinal Association (mmazz@accessibility-services.com)

2021 International Building Code

Revise as follows:

1011.5.2 Riser height and tread depth. *Stair* riser heights shall be 7 inches (178 mm) maximum and 4 inches (102 mm) minimum. The riser height shall be measured vertically between the *nosings* of adjacent treads or between the *stairway* landing and the adjacent tread. Rectangular tread depths shall be 11 inches (279 mm) minimum measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's *nosing*. *Winder* treads shall have a minimum tread depth of 11 inches (279 mm) between the vertical planes of the foremost projection of adjacent treads at the intersections with the walkline and a minimum tread depth of 10 inches (254 mm) within the clear width of the stair.

Exceptions:

1. *Spiral stairways* in accordance with Section 1011.10.
2. *Stairways* connecting stepped *aisles* to cross *aisles* or concourses shall be permitted to use the riser/tread dimension in Section 1030.14.2.
3. In Group R-3 occupancies; within *dwelling units* in Group R-2 occupancies not required by Chapter 11 to be Accessible or Type A dwelling or sleeping units; and in Group U occupancies that are accessory to a Group R-3 occupancy or accessory to individual *dwelling units* in Group R-2 occupancies; the maximum riser height shall be 7³/₄ inches (197 mm); the minimum tread depth shall be 10 inches (254 mm); the minimum *winder* tread depth at the walkline shall be 10 inches (254 mm); and the minimum *winder* tread depth shall be 6 inches (152 mm). A *nosing* projection not less than ³/₄ inch (19.1 mm) but not more than 1¹/₄ inches (32 mm) shall be provided on *stairways* with solid risers where the tread depth is less than 11 inches (279 mm).
4. See Section 503.1 of the International Existing Building Code for the replacement of existing *stairways*.
5. In Group I-3 facilities, *stairways* providing access to guard towers, observation stations and control rooms, not more than 250 square feet (23 m²) in area, shall be permitted to have a maximum riser height of 8 inches (203 mm) and a minimum tread depth of 9 inches (229 mm).

Reason Statement: The 2010 ADA Standards, the Uniform Federal Accessibility Standards, and the Architectural Barriers Act (ABA) Accessibility Standard all require all stairs that are a part of a means of egress in accessible buildings and facilities to comply with provisions for stair geometry that are the same as those in the main paragraph of Section 1011.5.2. There is no exception in these documents for stairs within dwelling units or sleeping units that must be accessible. .

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

This code change will increase costs where Accessible or Type A dwelling or sleeping units are required by the code, but are not also required by Federal laws such as, the Americans with Disabilities Act, the Architectural Barriers Act, or Section 504 of the Rehabilitation Act of 1973, as amended.

E60-21

E61-21

IBC: 1011.5.2, 1011.5.5.1 (IFC:[BE] 1011.5.2, 1011.5.5.1)

Proponents: David Cooper, representing Stairbuilders and Manufacturers Association (Coderep@stairways.org)

2021 International Building Code

Revise as follows:

1011.5.2 Riser height and tread depth. *Stair* riser heights shall be 7 inches (178 mm) maximum and 4 inches (102 mm) minimum. The riser height shall be measured vertically between the *nosings* of adjacent treads or between the *stairway* landing and the adjacent tread. Rectangular tread depths shall be 11 inches (279 mm) minimum measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's *nosing*. *Winder* treads shall have a minimum tread depth of 11 inches (279 mm) between the vertical planes of the foremost projection of adjacent treads at the intersections with the walkline and a minimum tread depth of 10 inches (254 mm) within the clear width of the stair.

Exceptions:

1. *Spiral stairways* in accordance with Section 1011.10.
2. *Stairways* connecting stepped *aisles* to cross *aisles* or concourses shall be permitted to use the riser/tread dimension in Section 1030.14.2.
3. In Group R-3 occupancies; within *dwelling units* in Group R-2 occupancies; and in Group U occupancies that are accessory to a Group R-3 occupancy or accessory to individual *dwelling units* in Group R-2 occupancies; the maximum riser height shall be 7³/₄ inches (197 mm); the minimum tread depth shall be 10 inches (254 mm); the minimum *winder* tread depth at the walkline shall be 10 inches (254 mm); and the minimum *winder* tread depth shall be 6 inches (152 mm). ~~A nosing projection not less than 3/4 inch (19.1 mm) but not more than 1 1/4 inches (32 mm) shall be provided on stairways with solid risers where the tread depth is less than 11 inches (279 mm).~~
4. See Section 503.1 of the International Existing Building Code for the replacement of existing *stairways*.
5. In Group I-3 facilities, *stairways* providing access to guard towers, observation stations and control rooms, not more than 250 square feet (23 m²) in area, shall be permitted to have a maximum riser height of 8 inches (203 mm) and a minimum tread depth of 9 inches (229 mm).

1011.5.5.1 Nosing projection size. ~~The leading edge (nosings) nosing of treads shall project not more than 1 1/4 inches (32 mm) beyond over the tread below. The maximum nosing projection shall not be limited on stairways with open risers. A nosing projection not less than 3/4 inch (19.1 mm) but not more than 1 1/4 inches (32 mm) shall be provided on stairways where the tread depth is less than 11 inches (279 mm).~~

Staff note: Proposals E61-21, E63-21 and E64-21 addresses requirements for nosing in a different or contradicting manner. The committee is urged to make their intentions clear with their actions on these proposals.

Reason Statement: Nosing projection regardless of size does not increase or decrease the unit run, or tread depth dimension. As stated in the code the required tread depth is measured horizontally between the nosings of adjacent treads. Currently the requirement for a nosing projection and its size is buried within an exception to tread depth for only residential stairs. This proposal appropriately moves the misplaced requirement to **1011.5.5.1 Nosing projection size**, and will now address the size of the nosing projection as well as the maximum nosing projection and shall apply to all stairs not just certain residential stairs. All steps with or without solid risers benefit from a nosing projection in descent. Nosing projections are essential in descent to allow the user to advance the forefoot further from the tread above as the leading foot points downward to find purchase on the tread below providing clearance for the heel as it lowers in an arc onto the walking surface. The IBC Commentary describes it like this: "A nosing projection allows the descending foot to be placed farther forward on the tread and the heel to then clear the nosing of the tread above as it swings down in an arc, landing on a tread that is effectively deeper than if no nosing projection is used. **Nosing projections are so common in stair design that they are usually only noticed by users where they are absent since the lack of nose projection can affect one's gait.**" (emphasis added)

Nosing projections are required in the IRC and should also be required for all stairways with tread depths less than 11 inches not just those in dwelling units that are allowed in the IBC. Currently the code does not require a nosing projection on open riser stairs. This change will require a nosing projection on open riser stairs but will not limit the maximum nosing projection at open risers. A maximum nosing projection limit where the riser is open does nothing to eliminate the potential of the forefoot extending under the tread above in ascent. A maximum nosing projection on an open riser stair would also frequently complicate enforcement at the lowest step of a flight where it overlaps a floor landing that is usually located independent of the stairway design.

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

The code change proposal may increase the cost of construction for some stairs. Although the required nosing projection for residential has not

changed, this may change the cost of stairs in I-3 facilities requiring a tread about an inch wider. However, tread materials are manufactured to accommodate the currently required nosing projection at treads on stairs with less than 11 inch tread depth and are readily available. The minimal material increase per tread would vary based upon the material used and the width of the stair/length of the tread. No increase in labor would be required.

E61-21

E62-21

IBC: 1011.5.4.1 (IFC:[BE]1011.5.4.1)

Proponents: David Cooper, representing Stairbuilders and Manufacturers Association (Coderep@stairways.org)

2021 International Building Code

Revise as follows:

1011.5.4.1 Nonuniform height risers. Where the bottom or top riser adjoins a sloping *public way*, walkway or driveway having an established grade and serving as a landing, the bottom or top riser is permitted to be reduced along the slope to less than 4 inches (102 mm) in height, with the variation in height of the bottom or top riser not to exceed one unit vertical in 12 units horizontal (8-percent slope) of *stair* width. ~~The nosings or leading edges of treads at such nonuniform height risers shall have a distinctive marking stripe, different from any other nosing marking provided on the stair flight.~~ The distinctive marking stripe shall be visible in descent of the ~~stair and shall have a slip-resistant surface.~~ Marking stripes shall have a width of not less than 1 inch (25 mm) but not more than 2 inches (51 mm).

Reason Statement: The text "leading edges of treads" has been deleted as it is not only redundant and unnecessary it erroneously only referencing the nosings of treads. This code specifically intends to regulate non uniform risers at **landings**. The use of Nosing alone is accurate and sufficient. NOSING is a defined term and also applies to landings. Use of the defined term resolves the erroneous language.

From Chapter 2 Definitions

NOSING. The leading edge of treads of stairs and of landings at the top of stairway flights.

A marking stripe at nonuniform height risers is needed however the reference to slip resistance, as used here is a last bastion of a long ago assumption that a slip resistant surface at the nosings increased safety. In fact, the entire tread surface and all the treads in a flight should be of uniform slip resistance. A rough surface at the nosing causes the foot to drag and can cause a unexpected loss of balance in ascent or descent that can result in a fall. Furthermore enforcement of this subjective term has proven controversial at best. The term "slip resistant" should be eliminated as referenced in this requirement for nonuniform risers that are already enough of an issue to require special marking for identification.

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

A marking stripe is still required to be applied or incorporated in the walking surface the cost of which is unlikely to change due to this change.

E62-21

E63-21

IBC: 1011.5.5 (IFC:[BE]1011.5.5)

Proponents: David Cooper, representing Stairbuilders and Manufacturers Association (Coderep@stairways.org)

2021 International Building Code

Revise as follows:

1011.5.5 Nosing and riser profile. *Nosings* shall have a curvature or bevel of not less than $\frac{1}{16}$ inch (1.6 mm) but not more than $\frac{9}{16}$ inch (14.3 mm) from the foremost projection of the tread. Risers shall be solid and vertical or sloped under the tread above from the underside of the *nosing* above at an angle not more than 30 degrees (0.52 rad) from the vertical. Risers shall be located to provide a nosing projection in compliance with 1011.5.5.1 and 1011.5.5.2.

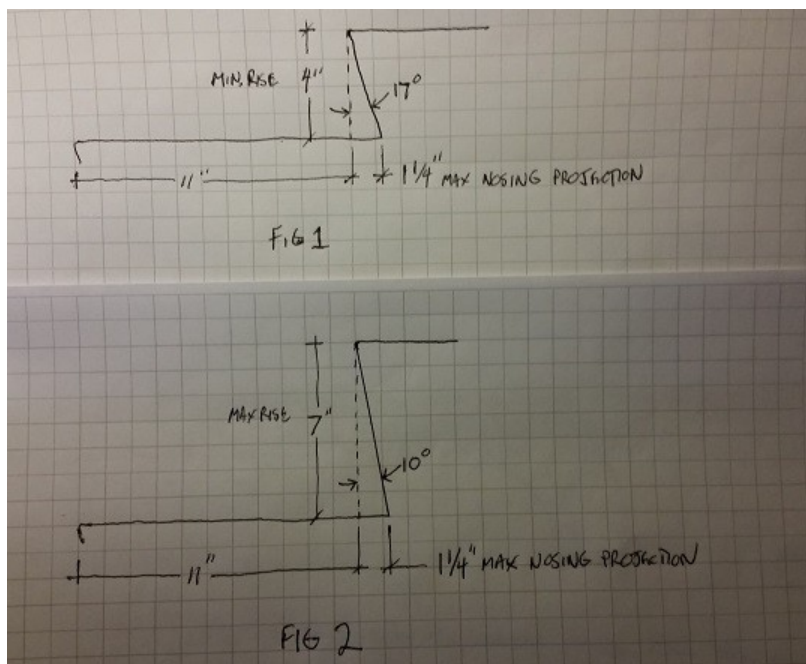
1011.5.5.1 Nosing projection size. The leading edge (*nosings*) of treads shall project not more than $1\frac{1}{4}$ inches (32 mm) beyond the tread below.

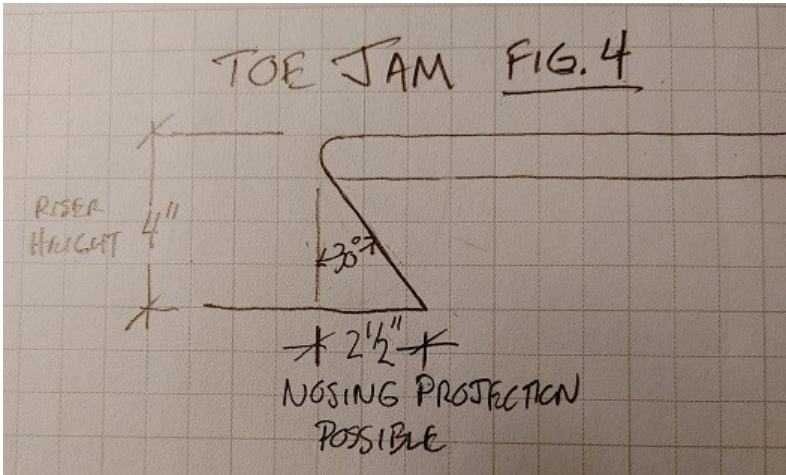
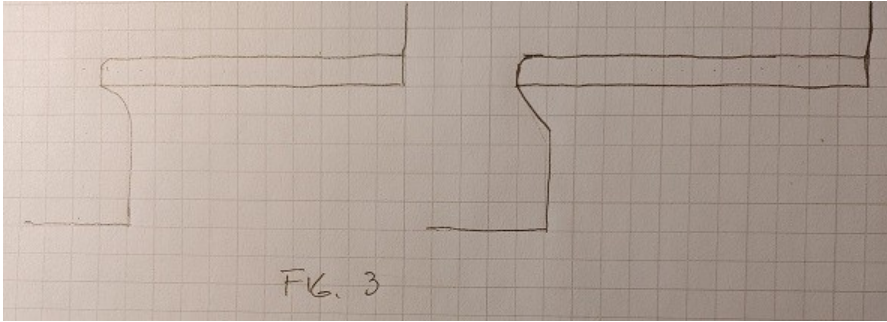
1011.5.5.2 Nosing projection uniformity. *Nosing* projections of the leading edges shall be of uniform size, including the projections of the *nosings* leading edge of the floor at the top of a *flight*.

Staff note: Proposals E61-21, E63-21 and E64-21 addresses requirements for nosing in a different or contradicting manner. The committee is urged to make their intentions clear with their actions on these proposals.

Reason Statement: In the previous cycle we sought to eliminate the 30 degree maximum riser slope as misleading because the limit of the slope would be controlled by the limit of the nosing projection (see figures 1 & 2). The committee pointed out the possibility that the riser face could be "faceted" a combination of angles or curved in compliance with the allowed nosing projection and that the limit was necessary. (see figure 3). Complicating this is that the text clearly states the slope of the riser starts "under the tread above" but some of the committee discussion clearly confused the nosing to be part of the riser.

Left unchanged this requirement will continue to be misinterpreted to result in the very unsafe condition it intends to prevent, that of providing an impediment to a foot that might be dragged up the riser face in ascent. When misinterpreted to slope the riser at 30 degrees beyond the allowed nosing projection, a toe wedging hazard is created (see figure 4) that is amplified at lower riser heights. The text added here provides the needed clarification.





Cost Impact: The code change proposal will not increase or decrease the cost of construction. The change only clarifies and make no material changes that will affect construction costs.

E64-21

IBC: 1011.5.5.1 (IFC:[BE] 1011.5.5.1)

Proponents: Thomas Zuzik Jr, of Railingcodes.com representing the National Ornamental & Miscellaneous Metals Association (NOMMA), representing the National Ornamental & Miscellaneous Metals Association (NOMMA) (coderep@railingcodes.com)

2021 International Building Code

Revise as follows:

1011.5.5.1 Nosing projection size. The leading edge (*nosings*) of treads shall project not more than $1\frac{1}{4}$ inches (32 mm) ~~beyond over the required~~ depth of the tread below.

Exception: When solid risers are not required, the nosing projection is permitted to exceed the maximum projection limit over the tread below.

1011.5.5.2 Nosing projection uniformity. *Nosing* projections of the leading edges shall be of uniform size, including the projections of the *nosings*' leading edge of the floor at the top of a *flight*.

1011.5.5.3 Solid risers. Risers shall be solid.

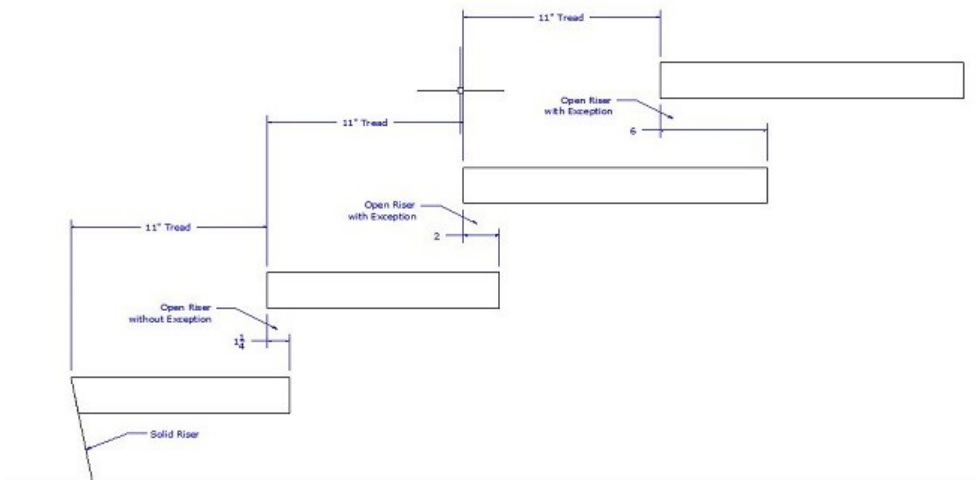
Exceptions:

1. Solid risers are not required for *stairways* that are not required to comply with Section 1009.3, provided that the opening between treads does not permit the passage of a sphere with a diameter of 4 inches (102 mm).
2. Solid risers are not required for occupancies in Group I-3 or in Group F, H and S occupancies other than areas accessible to the public. The size of the opening in the riser is not restricted.
3. Solid risers are not required for *spiral stairways* constructed in accordance with Section 1011.10.

Staff note: Proposals E61-21, E63-21 and E64-21 addresses requirements for nosing in a different or contradicting manner. The committee is urged to make their intentions clear with their actions on these proposals.

Reason Statement: When open risers are allowed per exceptions 1, 2 or 3 of Section 1011.5.5.3 Solid risers; limiting the depth of the nosing projection over the tread below does not limit or prevent how far a foot or other object may project under the tread above. The new exception to Section 1011.5.5.1 removes the maximum limit on the nosing projection allowing for the option of a deeper tread under the tread above when open risers are allowed and present.

The sketch below is provided for reference.



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

This code change proposal only allows for the possibility for the treads to be larger, but does not require them to be larger nor allow for the treads to be smaller. Thus, it adds no cost to a project, unless the project designer elects to add cost.

E65-21

IBC: 1011.7 (IFC:[BE]1011.7)

Proponents: John-Jozef Proczka, representing self (john-jozef.proczka@phoenix.gov)

2021 International Building Code

Revise as follows:

1011.7 Stairway construction. *Stairways* shall be built of materials consistent with the types permitted for the type of construction of the building. *Stairways are not require to be fire-resistance rated where the stairway is inside a fire-resistance rated enclosure.*

Exceptions:

1. Wood handrails shall be permitted in all types of construction.
2. Interior exit *stairways* in accordance with Section 510.2.

Reason Statement: This change is intended primarily to explicitly state what is intended by the words that are already present but leave a lot of room for confusion.

Table 601 regulates *building elements* and the definition of building elements points back to Table 601 for what is included in its definition. Floor construction is not defined. Secondary structural members is defined, and item 1 of its definition would seem to include stairways as stairways contain lots of types of structural members. However whether the stairway construction is associated with a floor is unclear. As such, it is unclear that stairways do not require a fire-resistance rating in accordance with Table 601. In most cases stairways are inside enclosures and if the enclosure is penetrated by fire or on fire itself it is already not usable. Providing fire ratings for stairways inside enclosures is therefore not done. The intent for stairs providing exit access that are not inside enclosures and for stairs provided for purposes other than egress is unclear and is not addressed here.

The wording of this change would not explicitly require other stairways to have a fire-resistance rating, it simply would state that those inside rated enclosures do not need a rating.

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

E65-21

E66-21

IBC: 1011.7.3 (IFC:[BE]1011.7.3)

Proponents: Jeff Perras, representing Code Red Consultants, LLC (jeffp@crcfire.com)

2021 International Building Code

Revise as follows:

1011.7.3 Enclosures under interior exit access stairways. The walls and soffits within enclosed usable spaces under enclosed and unenclosed stairways shall be protected by 1-hour fire-resistance-rated construction ~~or the fire-resistance rating of the stairway enclosure, whichever is greater. Access to the enclosed space shall not be directly from within the stairway enclosure.~~

Exception: ~~Spaces under stairways serving and contained within a single residential dwelling unit in Group R-2 or R-3 shall be permitted to be protected on the enclosed side with 1/2-inch (12.7 mm) gypsum board.~~ In buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.

Reason Statement: The commentary for this section states that the section is intended to address the fire hazard of storage under a stairway. Enclosed stairways are required by Section 1023.2 to be separated from adjacent spaces with rated construction and direct access from normally unoccupied spaces is prohibited by Section 1023.4. Therefore, this section is not necessary for enclosed stairs and should only apply to exit access stairways. The intent of this section is to limit a fire in an enclosed, normally unoccupied space with moderate fuel loads from compromising the use of an exit access stairway. In lieu of needing a 1-hour separation, this code change proposes to add an exception for fully sprinklered buildings. Providing sprinkler protection in the storage room should alleviate the concern with a fire going unnoticed in a storage room and is a concept recognized by multiple sections of the code. There is also no need for the existing exception with the proposed change since all new Group R buildings are sprinklered and dwelling unit separations are required by Section 420.2 & 420.3.

Cost Impact: The code change proposal will decrease the cost of construction
The proposed change eliminates the need for a rated storage room in a building with sprinklers throughout.

E66-21

E67-21

IBC: 1011.11 (IFC:[BE]1011.11)

Proponents: William Conner, representing American Society of Theatre Consultants (bill@bcaworld.com)

2021 International Building Code

Revise as follows:

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

Exceptions:

1. *Flights of stairways* within *dwelling units* and *flights of spiral stairways* are permitted to have a *handrail* on one side only.
2. Decks, patios and walkways that have a single change in elevation where the landing depth on each side of the change of elevation is greater than what is required for a landing do not require *handrails*.
3. In Group R-3 occupancies, a change in elevation consisting of a single riser at an entrance or egress door does not require *handrails*.
4. Changes in room elevations of three or fewer risers within *dwelling units* and *sleeping units* in Groups R-2 and R-3 do not require *handrails*.
5. Where a platform lift is in a stationary position and the floor of the platform lift serves as the upper landing of a *stairway*, *handrails* shall not be required on the *stairway*, provided that all of the following criteria are met:
 - 5.1. The *stairway* contains not more than two risers.
 - 5.2. A handhold, positioned horizontally or vertically, is located on one side of the *stairway* adjacent to the top landing.
 - 5.3. The handhold is located not less than 34 inches (864 mm) and not more than 42 inches (1067 mm) above the bottom landing of the *stairway*.
 - 5.4. The handhold gripping surface complies with Section 1014.3, and is not less than 4.5 inches (114 mm) in length.
6. Stairways between stages and audience seating areas in view of the audience are permitted to have a handrail on one side where the stairways are not required for exit access.

Reason Statement: This proposal is only to the steps that provide access from the seating to the stage, and only if exits for the audience and the stage do not use those steps for access to the exits. The handrails away from the wall are a sightline obstruction for the audience. These railings are frequently omitted currently and have not been shown to be a safety issue.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Insignificant savings perhaps by not requiring one short handrail.

E67-21

E68-21

IBC: 1012.1 (IFC:[BE]1012.1)

Proponents: Eirene Knott, BRR Architecture, representing BRR Architecture (eirene.knott@brrarch.com)

2021 International Building Code

Revise as follows:

1012.1 Scope General. ~~The provisions of this section shall apply to ramps used as a component of a means of egress.~~ Ramps serving occupied portions of a building shall comply with the requirements of Sections 1012.2 through 1012.10.

Exceptions:

1. Ramped *aisles* within assembly rooms or spaces shall comply with the provisions in Section 1030.
2. Curb ramps shall comply with ICC A117.1.
3. Vehicle ramps in parking garages for pedestrian *exit access* shall not be required to comply with Sections 1012.3 through 1012.10 where they are not an *accessible* route serving accessible parking spaces, other required accessible elements or part of an *accessible means of egress*.
4. Ramps associated with loading docks or piers are not required to comply with this section.

Reason Statement: Where does the IBC provide the requirements for a ramp that does not serve a means of egress? There is no language in the IBC yet a ramp that serves other than a means of egress is required to comply with accessibility requirements. There are no provisions in Chapter 11 to address how ramps are to be constructed nor is there any reference to Section 1012 in Chapter 11. So how does one know how to design a ramp without using the provisions in Section 1012? Section 1011 for stairs applies to any stair serving an occupied portion of a building, why should ramps be any different?

What happens when there is a ramp provided for delivery of products to a building or within a building? Where does the code provide direction on how these ramps are to be constructed? They are not used for egress so one would never end up in this section of the code to determine guard and handrail requirements. Since the current language in 1012 says the provisions apply only to ramps used in a means of egress, then there is no direction on how to provide a ramp for any other purpose than egress.

What I've done is taken the language from 1011.1 for stairs and applied it to ramps for 1012. I've included an exception for loading docks as those are exempt from guard requirements per 1015.2.

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

I do not foresee this language increasing the cost of construction. However, some will believe it will. In my opinion, this only clarifies that when a ramp is provided, it does have code requirements associated with it. I believe the code is silent on those ramps.

E68-21

E69-21

IBC: 1013.2 (IFC:[BE] 1013.2)

Proponents: Carl Baldassarra, representing Self (cbaldassarra@wje.com)

2021 International Building Code

Delete without substitution:

~~**1013.2 Low-level exit signs in Group R-1.** Where exit signs are required in Group R-1 occupancies by Section 1013.1, additional low-level exit signs shall be provided in all areas serving guest rooms in Group R-1 occupancies and shall comply with Section 1013.5.~~

~~The bottom of the sign shall be not less than 10 inches (254 mm) nor more than 18 inches (455 mm) above the floor level. The sign shall be flush mounted to the door or wall. Where mounted on the wall, the edge of the sign shall be within 4 inches (102 mm) of the door frame on the latch side.~~

Reason Statement: This proposal deletes a code requirement that provides a negligible fire safety benefit in fully-sprinklered R-1 occupancies. The requirement is no longer necessary in consideration of the substantial changes made in the legacy codes and the IBC to improve the level of safety in R-1 occupancies, as demonstrated by the fire record.

Interest in low-level exit signage for hotels was generated as a result of the MGM Grand Hotel fire in 1980 and other hotel fires in that era. While many people died as a result of that fire, the building is widely recognized as a “case study” of design deficiencies and code violations. The design and construction of that building bears no resemblance to buildings designed in accordance with the current or previous editions of the IBC.

Brief History of Requirement

The requirement for low-level exit signage in R-1 occupancies was proposed a number of times between 1980 and the last edition of the three legacy codes (1999) and was generally disapproved due to the lack of a perceived need. Only one of the three codes adopted such a provision, first adopted in 1994.

The early editions of the IBC did not have a requirement for low-level exit signage. It was first adopted into the 2012 edition of the IBC, the stated reason being that R-1 occupancies have transient occupants who are not familiar with their surroundings and because exit signs installed in the traditional locations would not be visible when occupants are forced to crawl on the floor to reach the exits. This is a false premise.

In fact, the code change proposal was initially rejected by the Code Development Committee on the basis that there was no technical justification. During the public comment period, the proponent stated, “Over the years, thousands have died from smoke inhalation while attempting to flee the burning building.” Again, this statement is grossly lacking a technical basis; there is no substantiation whatsoever that buildings designed and constructed in accordance with the IBC have ever performed in such a manner. The proponent addressed a number of other minor issues cited by the Committee, but never addressed the main issue for the initial Disapproval – the lack of a technical justification. Nevertheless, it was adopted.

Current Fire Safety Features in R-1

The fact is that R-1 occupancies designed and constructed in accordance with the fire safety features in the IBC provide a *very high* degree of life safety, as demonstrated by the “systems concept” performance-based analysis per NFPA 550, and as supported by the fire record.

The fire safety features of R-1 occupancies included in the IBC are based upon long-established, fundamental principles of fire safety and, working together, provide a high degree of redundancy should any one feature fail.

The analysis using the principles in NFPA 550 and the fire safety features in R-1 occupancies include:

Managing the fire by controlling the fuel

- o Noncombustible construction (as required by building geometry)
- o Control of interior finish

- o Control of furnishings (varies with fire code)
- o Control of decorations

Limiting the fire by construction

- o Fire resistance rated construction (as required by building geometry)
- o Fire-rated guest rooms (sleeping units)
- o Rated corridor construction and opening protectives
- o Rated egress paths
- o Manage smoke intrusion into guest rooms and the means of egress system (smoke control)

Limiting fire by suppression

- o Automatic sprinkler protection
- o Quick-response sprinkler technology
- o Manual suppression (standpipe systems) for multi-story buildings
- o Redundant water supplies in very tall buildings
- o Automatic notification to fire department
- o Electrical supervision of automatic sprinkler system components

Moving occupants to safety

- o Redundant, protected means of egress system for building evacuation
- § Number of exits
- § Exit capacity
- § Exit travel distance
- § Dead-end corridor limitations
- § Exit signage
- § Exit path lighting
- § Early detection and occupant notification within sleeping rooms and suites
- § General building-wide occupant notification by automatic and manual means (as required by building geometry)
- § Manage smoke intrusion into means of egress system (smoke control)
- o Alternatively, a defend-in-place strategy for very tall buildings (using fire resistive construction and the other features above)

The above represents the major features required by the 2021 IBC that contribute to the safety of R-1 occupancies. One of the most important and fundamental of these features is the compartmentation of guest rooms, employing rated construction and opening protectives, including self-closing doors to the corridor. That feature alone provides a high-degree of limiting guest room fires to the room of origin. The NFPA reports that 90% of hotel and motel fires are limited to the room of origin ["Structure Fires in Hotels and Motels," Richard Campbell, NFPA; September 2015].

Another significant feature is automatic sprinkler protection. Following the fires that occurred in the late 1970s and early 1980s, the hotel industry responded with an aggressive campaign to include automatic sprinkler systems, and fire detection and alarm systems. Significant improvement in the fire safety record soon followed. Moreover, the development of quick response sprinkler technology significantly improved the level of fire safety for people in the room of origin, with sprinklers that operate early in the fire growth period to reduce the quantities of smoke, carbon monoxide and temperatures, keeping the room of origin tenable for survival. Of course, if the condition of the room is survivable afforded by quick response sprinklers, the tenability of the corridor, even in the event of an open guest room door, will be similar and, likely, much better.

Do low-level exit signs have a benefit? Perhaps, such as when the occupants' path to egress the structure is entirely within the room of origin. As an example, we have seen low-level exit signs required in Special Amusement Buildings by the legacy codes beginning in 1990 and included in the IBC today. That makes sense where the exit path is not clear, occupants are restrained on a conveyance or confused by the sights and sounds of the entertainment and, therefore, people are expected to be in the fire environment for all or a large portion of their egress. We also see another example of such a practical use by the installation of floor lighting and low-level exit signs in aircraft where occupants are within the "room" of origin. Again, that is not the case in R-1 occupancies; the corridor is separated from the room of origin.

This same approach is included in the NFPA Life Safety Code. Low-level exit signs are required in Special Amusement Buildings, not in R-1 occupancies.

The Fire Safety Record

As previously stated, the facts about the high level of fire safety in R-1 occupancies resulting from meeting the current requirements of the IBC are demonstrated by their fire safety record.

NFPA data shows that, for the period 2009 to 2013, U.S. fire departments responded to an estimated average of 3,520 structure fires in hotels and motels each year. These fires resulted in annual losses of 9 civilian deaths, 120 civilian injuries, and \$84 million in direct property damage [Campbell]. This represents a substantial reduction in fatalities from previous annual average of 12,000 fires and 100 fatalities in 1980. The leading area of origin of fatal hotel fires was reported to be the bedroom (68%). Nothing in the fire record cites low-level exit signs as a contributing factor to the fatalities and injuries.

NFPA also reported that "sprinklers provide effective fire protection in hotel and motel properties" [Campbell]. According to the most recent NFPA report on the U.S. experience with automatic extinguishing systems at the time of the report, deaths per thousand reported fires were "100% lower when wet pipe sprinklers were present, compared to fires with no automatic extinguishing equipment" [Campbell]. In other words, there were essentially no reported deaths in sprinklered hotels and motels in the study period.

There has been such a dramatic decline in the number of fire fatalities and injuries in hotel and motel occupancies over the last 40 years that NFPA no longer breaks out the loss experience for hotels and motels as a category, instead aggregating the data into "Residential – Other."

It is generally true that providing a high degree of fire safety for building occupants enhances the safety of first responders. In another study, "A Review of the Validity of Estimates of Hotel and Motel Fire Deaths," prepared by Tri-Data Corporation, December, 1994, there were no reported fire fighter fatalities in hotel and motel fires in the study period of 1988 to 1992.

Conclusion

An analysis of the fire safety requirements in the IBC demonstrates that a robust and redundant strategy is employed and is responsible for an exemplary fire safety record for R-1 occupancies. The recently added requirement for low-level exit signs in R-1 occupancies does not have a technical basis and reduces important fire safety resources that can be better applied in another manner.

In summary, I am hopeful that we can all agree that, by complying with the requirements of the IBC, we do not expect that occupants will need to crawl out of the building in the event of a fire. Therefore, there is no reason to design the building in that manner.

Cost Impact: The code change proposal will decrease the cost of construction. The cost impact will vary based upon the size and configuration of the building.

E70-21

IBC: 1013.2 (New) [IFC:[BE]1013.2 (New)]

Proponents: Timothy Stacy, representing Southern Oregon Fire Code Officials

2021 International Building Code

Add new text as follows:

1013.2 Mounting Location for signs near exits. The center of exit signs shall be located a maximum vertical distance of 4 feet (1220 mm) above the egress opening and a maximum horizontal distance of 4 feet (1220 mm) from the edge of the egress opening.

Exception: The locations of exit signs shall be permitted to exceed these dimensions where approved by the building official.

Reason Statement: Currently, exit signs can be installed at any height above an egress opening, potentially resulting in unreasonable viewing angles and increased difficulty with maintenance and testing. Both the vertical and horizontal 4 ft. dimensions would improve identification of the egress opening, access for maintenance and design flexibility. The 4 ft. vertical limit would allow most people to reach the exit signs with standard equipment, and the 4 ft. horizontal dimension is intended to provide consistency with the vertical distance. The exception is provided to accommodate situations where the code metrics cannot be achieved.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
It is assumed the sign will already be required.

E70-21

E71-21

IBC: 1013.5, 1013.5.1 (New) [IFC:[BE]1013.5, 1013.5.1 (New)]

Proponents: Traci Harvey, Washington State Association of Fire Marshals, representing Washington State Association of Fire Marshals

2021 International Building Code

Revise as follows:

1013.5 Internally illuminated exit signs. Electrically powered, *self-luminous* and *photoluminescent* exit signs shall be *listed* and labeled in accordance with UL 924 and shall be installed in accordance with the manufacturer's instructions and Chapter 27. Exit signs shall be illuminated at all times. Exit signs shall be easily discernable and legible at all times.

Add new text as follows:

1013.5.1 Photoluminescent exit signs installation.. Photoluminescent exit signs shall be installed in locations where normal operating lighting conditions is sufficient to adequately charge the sign.

Reason Statement: This section addresses a pervasive problem the working group has tried to address in photoluminescent exit signs. Photoluminescence is a process whereby luminescence is induced by the absorption of visible light. The use of photoluminescent exit signage in a low light areas [ie: movie theatres] has presented a problem where minimal or no ambient light is available to recharge the sign. The code lacks adequate means to address photoluminescent exit signs.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This proposal would not directly increase construction costs as it clarifies that exit signs need to be seen to perform the intended function.

E71-21

E72-21

IBC: 1014.2, 1014.2.2 (New), 1014.8; (IFC:[BE] 1014.2, 1014.2.2 (New), 1014.8)

Proponents: Lee Kranz, representing Myself (lkranz@bellevuewa.gov)

2021 International Building Code

Add new text as follows:

1014.2 Location. Handrails serving flights of stairways, ramps, stepped aisles and ramped aisles shall comply with the provisions of Sections 1014.2.1 and 1014.2.2.

Revise as follows:

1014.2.1 ~~1014.2~~ Height. *Handrail* height, measured above *stair* tread *nosings*, or finish surface of *ramp* slope, shall be uniform, not less than 34 inches (864 mm) and not more than 38 inches (965 mm). *Handrail* height of *alternating tread devices* and ships ladders, measured above tread *nosings*, shall be uniform, not less than 30 inches (762 mm) and not more than 34 inches (864 mm).

Exceptions:

1. Where *handrail* fittings or bendings are used to provide continuous transition between flights, the fittings or bendings shall be permitted to exceed the maximum height.
2. In Group R-3 occupancies; within *dwelling units* in Group R-2 occupancies; and in Group U occupancies that are associated with a Group R-3 occupancy or associated with individual *dwelling units* in Group R-2 occupancies; where *handrail* fittings or bendings are used to provide continuous transition between flights, transition at *winder* treads, transition from *handrail* to guard, or where used at the start of a *flight*, the *handrail* height at the fittings or bendings shall be permitted to exceed the maximum height.
3. *Handrails* on top of a *guard* where permitted along stepped *aisles* and ramped *aisles* in accordance with Section 1030.16.

Add new text as follows:

1014.2.2 Lateral location. Handrails located outward from the edge of the walking surface of flights of stairways, ramps, stepped aisles and ramped aisles shall be located within 6 inches (152.4 mm) measured horizontally from the edge of the walking surface. Handrails projecting into the width of the walking surface shall comply with Section 1014.8.

Revise as follows:

1014.8 Projections. On *ramps* and on ramped *aisles* that are part of an *accessible* route, the clear width between *handrails* shall be 36 inches (914 mm) minimum. Projections into the required width of stepped and ramped aisles, flights of stairways and ramps at each side shall not exceed 4¹/₂ inches (114 mm) at or below the *handrail* height. Projections into the required width shall not be limited above the minimum headroom height required in Section 1011.3. Projections due to intermediate *handrails* shall not constitute a reduction in the egress width. Where a pair of intermediate *handrails* are provided within the *stairway* width without a walking surface between the pair of intermediate *handrails* and the distance between the pair of intermediate *handrails* is greater than 6 inches (152 mm), the available egress width shall be reduced by the distance between the closest edges of each such intermediate pair of *handrails* that is greater than 6 inches (152 mm).

Staff Note: E72-21, E73-21 and E79-21 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: Surprisingly, the code does not currently regulate the lateral distance that a handrail can be located away from the edge of the walking surface of a stair, ramp or aisle. If an architect wanted to locate a handrail 24 or even 36 inches away from the walking surface, there is currently no code provision to prevent that from happening. Most building officials would not permit that design but there is no code backing to support them. The substantive data provided as part of this code change provides the justification for limiting the lateral distance of the handrail to be not more than 6" from the edge of the walking surface. This code change is needed to insure that handrails will be located close enough to the edge of the walking surface to provide adequate support for pedestrians with limited reach capabilities. Handrails that protrude into the required width of the stairway, ramp or aisle are currently regulated in Section 1014.8.



Note relative distance from the extent of the walking surface to edge of foot in photos 1-5 and in videos from SMA funded pilot study of handrails as used by persons with disabilities at the following links:

<https://stairways.wildapricot.org/resources/code-research-videos/nodevice01hr1.wmv>

<https://stairways.wildapricot.org/resources/code-research-videos/nodevice02hr1.wmv>

<https://stairways.wildapricot.org/resources/code-research-videos/nodevice04hr1.wmv>

<https://stairways.wildapricot.org/resources/code-research-videos/nodevice05hr1.wmv>

The persons in these videos have difficulty walking across a room but use no device such as a cane or walker.

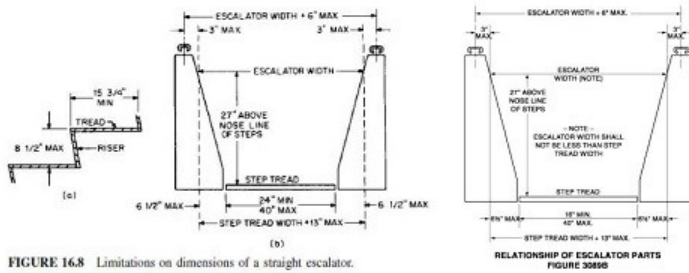
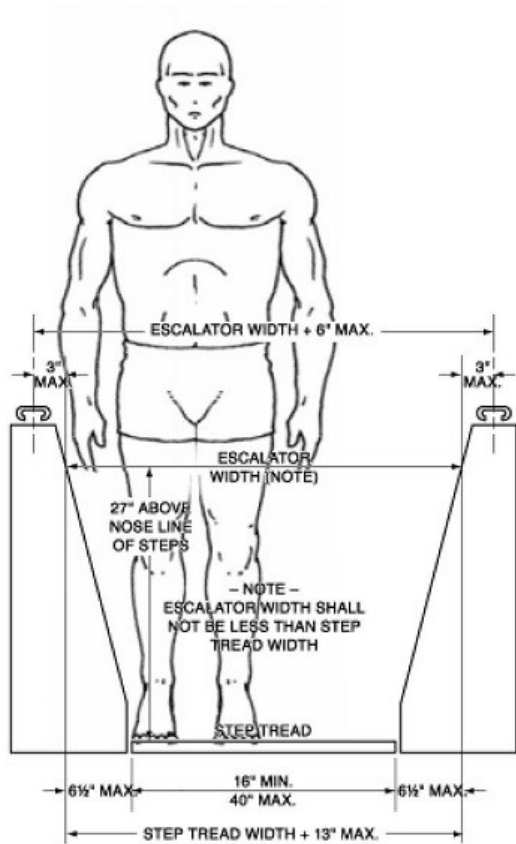


FIGURE 16.8 Limitations on dimensions of a straight escalator.

From Oregon Escalator Regulation

From California Escalator Regulation

Typical Escalator regulations allow up to 9 1/2 inches from end of walking surface to center of handrail

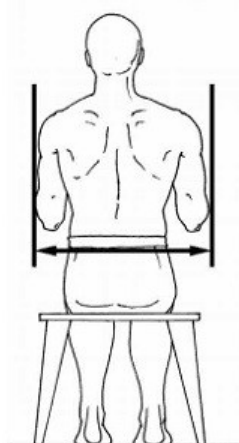


**RELATIONSHIP OF ESCALATOR PARTS
FIGURE 3089B**

Scaled Composite of 5'9" Male Anthropometric Sketch on escalator illustrates relative position of Hand to rail with the side of the foot at the end of the walking surface.

Forearm-Forearm Breadth

FEMALE N = 2208			MALE N = 1774		
Centimeters		Inches	Centimeters		Inches
46.85	Mean	18.44	54.61	Mean	21.50
3.47	Std Dev	1.36	4.36	Std Dev	1.72
60.90	Maximum	23.98	72.52	Maximum	28.54
37.30	Minimum	14.69	39.90	Minimum	15.71
Percentiles			Percentiles		
39.42	1 st	15.52	45.12	1 st	17.76
40.24	2 nd	15.84	46.17	2 nd	18.18
40.76	3 rd	16.05	46.84	3 rd	18.44
41.47	5 th	16.33	47.74	5 th	18.80
42.58	10 th	16.76	49.16	10 th	19.35
43.33	15 th	17.06	50.13	15 th	19.74
43.94	20 th	17.30	50.91	20 th	20.04
44.47	25 th	17.51	51.59	25 th	20.31
44.94	30 th	17.69	52.21	30 th	20.56
45.39	35 th	17.87	52.79	35 th	20.79
45.82	40 th	18.04	53.35	40 th	21.00
46.24	45 th	18.20	53.90	45 th	21.22
46.66	50 th	18.37	54.45	50 th	21.44
47.08	55 th	18.54	55.00	55 th	21.65
47.52	60 th	18.71	55.56	60 th	21.88
47.98	65 th	18.89	56.16	65 th	22.11
48.47	70 th	19.08	56.79	70 th	22.36
49.01	75 th	19.30	57.47	75 th	22.63
49.63	80 th	19.54	58.25	80 th	22.93
50.37	85 th	19.83	59.16	85 th	23.29
51.33	90 th	20.21	60.32	90 th	23.75
52.84	95 th	20.80	62.06	95 th	24.43
53.87	97 th	21.21	63.18	97 th	24.87
54.66	98 th	21.52	64.00	98 th	25.20
55.95	99 th	22.03	65.27	99 th	25.70

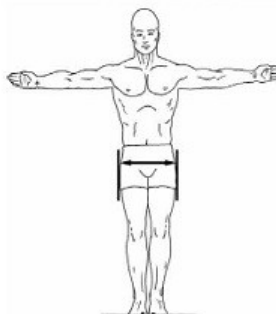


11



Hip Breadth

FEMALE N = 2208			MALE N = 1774		
Centimeters		Inches	Centimeters		Inches
34.27	Mean	13.49	34.18	Mean	13.46
2.24	Std Dev	.88	2.03	Std Dev	.80
42.00	Maximum	16.54	41.60	Maximum	16.38
27.00	Minimum	10.63	28.20	Minimum	11.10
Percentiles			Percentiles		
29.58	1 st	11.65	29.64	1 st	11.67
30.05	2 nd	11.83	30.18	2 nd	11.88
30.35	3 rd	11.95	30.51	3 rd	12.01
30.78	5 th	12.12	30.97	5 th	12.19
31.47	10 th	12.39	31.66	10 th	12.46
31.96	15 th	12.58	32.12	15 th	12.65
32.35	20 th	12.74	32.49	20 th	12.79
32.70	25 th	12.87	32.81	25 th	12.92
33.01	30 th	13.00	33.10	30 th	13.03
33.31	35 th	13.11	33.36	35 th	13.14
33.59	40 th	13.23	33.62	40 th	13.24
33.87	45 th	13.34	33.87	45 th	13.33
34.15	50 th	13.45	34.12	50 th	13.43
34.44	55 th	13.56	34.37	55 th	13.53
34.73	60 th	13.67	34.62	60 th	13.63
35.03	65 th	13.79	34.89	65 th	13.74
35.36	70 th	13.92	35.18	70 th	13.85
35.71	75 th	14.06	35.49	75 th	13.97
36.12	80 th	14.22	35.85	80 th	14.11
36.59	85 th	14.41	36.27	85 th	14.28
37.21	90 th	14.65	36.82	90 th	14.50
38.15	95 th	15.02	37.65	95 th	14.82
38.77	97 th	15.27	38.22	97 th	15.05
39.24	98 th	15.45	38.64	98 th	15.21
40.00	99 th	15.75	39.32	99 th	15.48



19



Anthropometric Data

Apr 21, 2006 — TABLE OF CONTENTS. Anthropometric Data Point. Page #11 & 19 Gordon, Claire C. et. al 1988 Anthropometric Survey of U.S. Personnel:

<https://multisite.eos.ncsu.edu/www-ergocenter-ncsu-edu/wp-content/uploads/sites/18/2016/06/Anthropometric-Detailed-Data-Tables.pdf>

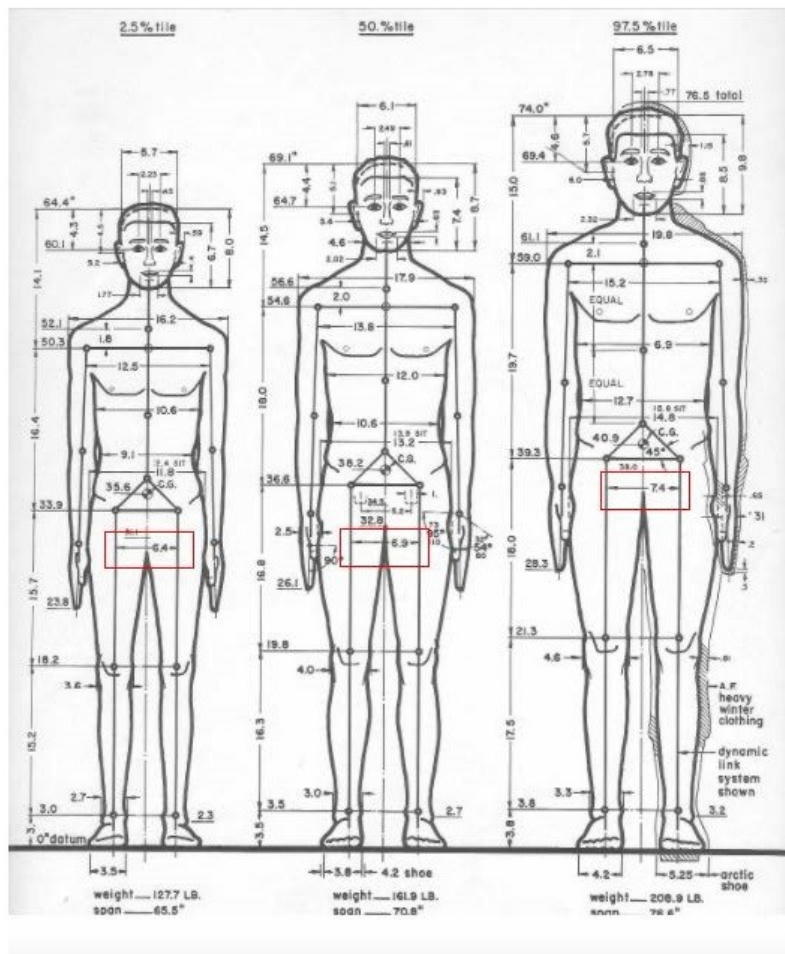
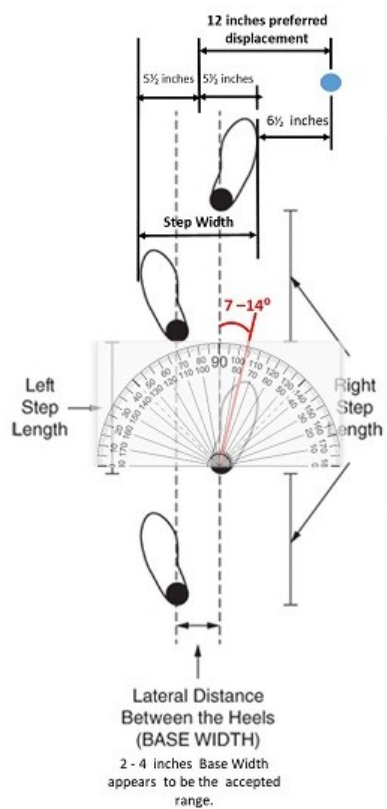


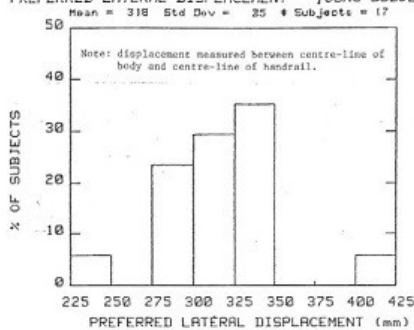
Illustration of only 1 inch range in stance dimension from 6.4 inches for 2.5 percentile to 7.4 inches for 97.5 percentile



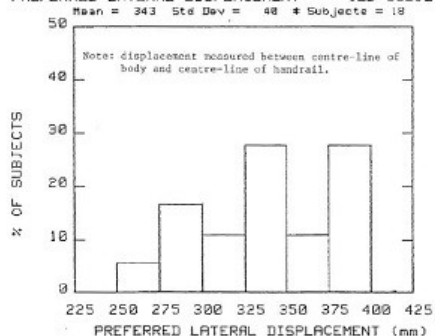
An offset of 6 inches from the limit of the walking surface to the center of the handrail is conservatively justified considering:

1. Data from B. Maki's static measurement of preferred lateral displacement.
2. Step widths shown in the tables below for older persons who widen their gait in an effort to stabilize as determined by Herrero-Larrea, A.

PREFERRED LATERAL DISPLACEMENT YOUNG SUBJECTS 89



PREFERRED LATERAL DISPLACEMENT OLD SUBJECTS



Above Tables from:

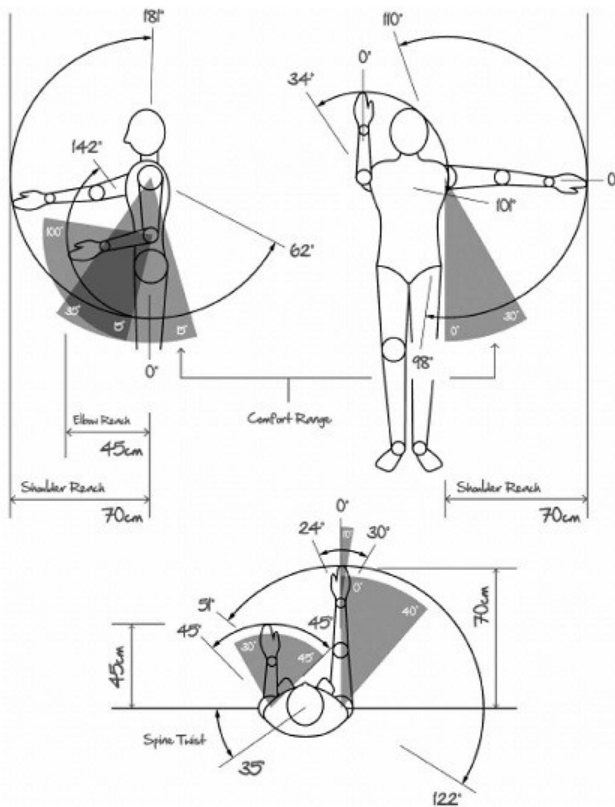
Biomechanical Assessment of Handrail Parameters with Special Consideration to the Needs of Elderly Users; B.E. Maki, G.R. Fernie, West Park Research, May 5, 1983. Prepared for the National Research Council of Canada.

2.

Step width		Mean	SD	Normal limits (95%)		Normal limits (99%)		n
65-79	Men 65-79	10	4.5	1.1	19	-1.6	21.6	71
	Women 65-79	9.4	3.8	1.9	17	-0.4	19.2	98
>79	Men >79	12.5	4.9	2.6	22.3	-0.3	25.2	98
	Women >79	11.4	4.5	2.4	20.5	-0.3	23.2	164
TOTAL (weighted)		10.3	4.37	1.6	19.8	-1	21.7	431

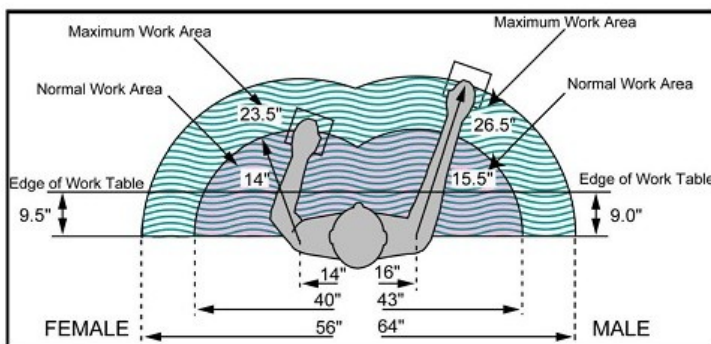
Above Table from:

Herrero-Larrea, A., Miñarro, A., Narvaiza, L. *et al.* Normal limits of home measured spatial gait parameters of the elderly population and their association with health variables. *Sci Rep* 8, 13193 (2018).
<https://doi.org/10.1038/s41598-018-31507-1>



Reach and rotation comfort zones of the average human based on charts developed by Dreyfuss & Tilley (2002).

Looker, Jed. (2015). Reaching for Holograms: Assessing the Ergonomics of the Microsoft™ Hololens™ 3D Gesture Known as the "Air Tap".
https://www.researchgate.net/publication/284283876_Reaching_for_Holograms_Assessing_the_Ergonomics_of_the_Microsoft_Hololens_3D_Gesture_Known_as_the_Air_Tap/citation/download



Reach range illustrations above clearly show that proposed 6 inch offset of the handrail beyond the extent of the walking surface is well within reason.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. The proposal simply limits the distance that a handrail can be from the edge of the walking surface. It will not change the cost of construction.

E73-21

IBC: 1014.3 (New) [IFC:[BE]1014.3 (New)]

Proponents: Lee Kranz, representing Washington Association of Building Officials Technical Code Development Committee (lkranz@bellevuewa.gov); Micah Chappell, representing Washington Association of Building Officials (micah.chappell@seattle.gov)

2021 International Building Code

Add new text as follows:

1014.3 Lateral location. Handrails located outward from the edge of the walking surface of flights of stairways, ramps, stepped aisles and ramped aisles shall be located within 6 inches (152.4 mm) measured horizontally from the edge of the walking surface. Handrails projecting into the width of the walking surface shall comply with Section 1014.8.

Staff Note: E72-21, E73-21 and E79-21 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: Surprisingly, the code does not currently regulate the lateral distance that a handrail can be located away from the edge of the walking surface of a stair, ramp or aisle. If an architect wanted to locate a handrail 24 or even 36 inches away from the walking surface, there is currently no code provision to prevent that from happening. Most building officials would not permit that design but there is no code backing to support them. The substantive data provided as part of this code change provides the justification for limiting the lateral distance of the handrail to be not more than 6" from the edge of the walking surface. This code change is needed to insure that handrails will be located close enough to the edge of the walking surface to provide adequate support for pedestrians with limited reach capabilities. Handrails that protrude into the required width of the stairway, ramp or aisle are currently regulated in Section 1014.8
See the reason statement for E72-21 for additional anthropometric data.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This code change will not increase the cost of construction. The intent is to improve the safety for those needing to use a handrail while traversing on stairways, ramps and aisles.

E73-21

E74-21

IBC: 1014.4; (IFC:[BE] 1014.4)

Proponents: David Cooper, Stair Manufacturing and Design Consultants, representing Stairbuilders and Manufacturers Association (Coderep@stairways.org)

2021 International Building Code

Revise as follows:

1014.4 Continuity. *Handrail* gripping surfaces shall be continuous, without interruption by newel posts or other obstructions.

Exceptions:

1. ~~*Handrails*~~ *Within a dwelling unit, the continuity of handrail gripping surfaces is allowed* to be interrupted by a newel post at a turn or landing.
2. Within a *dwelling unit*, the use of a volute, turnout, starting easing or starting newel is allowed over the lowest tread.
3. Handrail brackets or balusters attached to the bottom surface of the *handrail* that do not project horizontally beyond the sides of the *handrail* within 1½ inches (38 mm) of the bottom of the *handrail* shall not be considered obstructions. For each ½ inch (12.7 mm) of additional *handrail* perimeter dimension above 4 inches (102 mm), the vertical clearance dimension of 1½ inches (38 mm) shall be permitted to be reduced by ⅛ inch (3.2 mm).
4. Where *handrails* are provided along walking surfaces with slopes not steeper than 1:20, the bottoms of the *handrail* gripping surfaces shall be permitted to be obstructed along their entire length where they are integral to crash rails or bumper *guards*.
5. *Handrails* serving stepped *aisles* or ramped *aisles* are permitted to be discontinuous in accordance with Section 1030.16.1.

Reason Statement: This change clarifies the intent of the exception is not to allow the use of newel posts at a turn or landing, but to allow the interruption of handrail continuity by a newel post at a turn or landing. The use of newels is not prohibited in the code and does not require an exception. This correlates with a similar approved change to the IRC due to conflicting interpretations offered by staff in Birmingham and Chicago. In addition we have changed the reference to "dwelling units" to "a dwelling unit" to match the language in exception 2.

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

Current interpretations vary across the country making frequency impossible to predict. Newels vary greatly in design, cost and material, making this impossible to fairly calculate. However the difference will likely be no less than several hundred dollars when continuous rails are required at a turn or landing compared to the additional cost of a typical post to post system without fittings and less installation labor. If the entire stair system is to match, the price could conservatively escalate to more than a thousand dollars for the most simple commodity stairs.

E74-21

E75-21

IBC: 1014.6 (IFC:[BE]1014.6)

Proponents: David Cooper, representing Stairbuilders and Manufacturers Association (Coderep@stairways.org)

2021 International Building Code

Revise as follows:

1014.6 Handrail extensions. *Handrails* shall return to a wall, *guard* or the walking surface or shall be continuous to the *handrail* of an adjacent *flight of stairs* or *ramp* run. Where *handrails* are not continuous between flights, the *handrails* shall extend horizontally beyond the landing nosing not less than 12 inches (305 mm) as measured horizontally to the center of the return. ~~Handrails shall extend beyond the top riser and~~ continue to slope for the depth of one tread beyond the bottom tread nosing as measured horizontally to the center of the return. ~~riser.~~ At *ramps* where *handrails* are not continuous between runs, the *handrails* shall extend horizontally above the landing 12 inches (305 mm) minimum beyond the top and bottom of *ramp* runs as measured to the center of the returns. The extensions of *handrails* shall be in the same direction of the flights of *stairs* at *stairways* and the *ramp* runs at *ramps*.

Exceptions:

1. *Handrails* within a *dwelling unit* that is not required to be *accessible* need extend only from the top riser to the bottom riser.
2. *Handrails* serving *aisles* in rooms or spaces used for assembly purposes are permitted to comply with the *handrail* extensions in accordance with Section 1030.16.
3. *Handrails* for *alternating tread devices* and ships ladders are permitted to terminate at a location vertically above the top and bottom risers. *Handrails* for *alternating tread devices* are not required to be continuous between flights or to extend beyond the top or bottom risers.

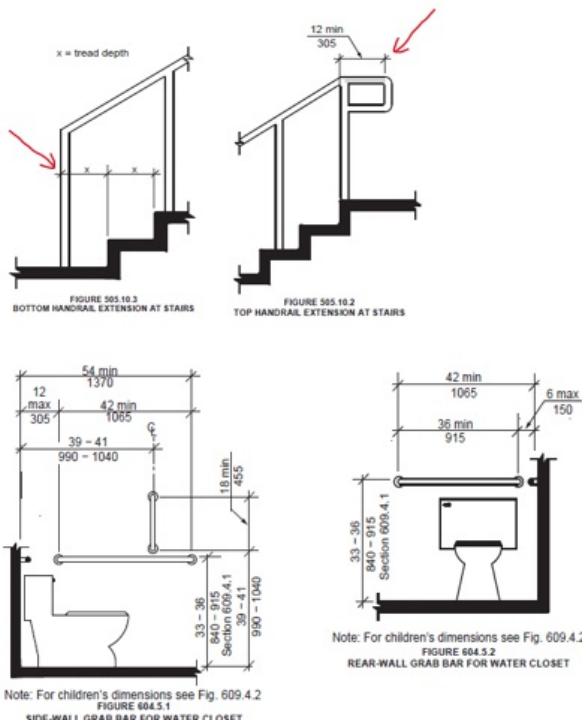
Staff Note: E75-21 and E76-21 addresses requirements in a different or contradicting manner. The committee is urged to make their intentions clear with their actions on these proposals.

Reason Statement: The ICC defined term "nosing" has replaced riser to coordinate with the A117 standard where the nosing is used as the reference. A nosing may project as much as 1¹/₄ inches past the riser resulting in a significant variation between the two standards and confusion for enforcement.

Currently the code gives no direction as to what point to measure at the termination of the extension nor does the text of the A117.1 standard.

However, A117.1 Figures 505.10.2 and 505.10.3 dimension the lower extension length to the extreme end of the return and to the inside of the upper end return. This proposal suggests measuring to the center of the return as is common to the illustrated regulations for grab bars in A117.1, to the center of the return (see A117.1 figures 604.5.1 and 604.5.2).

Changes to drawings in the A117.1 standard are considered editorial and such coordination should not be of consequence.



Cost Impact: The code change proposal will not increase or decrease the cost of construction
No changes in design, material, manufacturing or installation labor affecting cost will be necessary to comply with this change.

E76-21

IBC: 1014.6 (IFC:[BE]1014.6)

Proponents: Thomas Zuzik Jr, of Railingcodes.com representing the National Ornamental & Miscellaneous Metals Association (NOMMA), representing the National Ornamental & Miscellaneous Metals Association (NOMMA) (coderep@railingcodes.com)

2021 International Building Code

Revise as follows:

1014.6 Handrail extensions. *Handrails* shall return to a wall, *guard* or the walking surface or shall be continuous to the *handrail* of an adjacent *flight of stairs* or *ramp* run. Where *handrails* are not continuous between flights, the *handrails* shall extend horizontally not less than 12 inches (305 mm) beyond the top riser and continue to slope for the depth of one tread beyond the bottom riser. At *ramps* where *handrails* are not continuous between runs, the *handrails* shall extend horizontally above the landing 12 inches (305 mm) minimum beyond the top and bottom of *ramp* runs. The extensions of *handrails* shall be in the same direction of the flights of *stairs* at *stairways* and the *ramp* runs at *ramps* and shall extend the required minimum length before any change in direction. The length of the extension shall be measured in accordance with Section 1014.4 or 1014.7, whichever is less.

Exceptions:

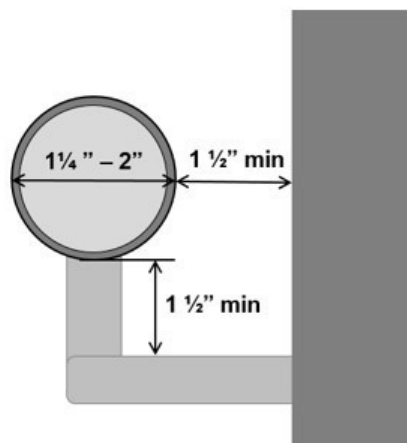
1. *Handrails* within a *dwelling unit* that is not required to be *accessible* need extend only from the top riser to the bottom riser.
2. *Handrails* serving *aisles* in rooms or spaces used for assembly purposes are permitted to comply with the *handrail* extensions in accordance with Section 1030.16.
3. *Handrails* for *alternating tread devices* and ships ladders are permitted to terminate at a location vertically above the top and bottom risers. *Handrails* for *alternating tread devices* are not required to be continuous between flights or to extend beyond the top or bottom risers.

Staff Note: E75-21 and E76-21 addresses requirements in a different or contradicting manner. The committee is urged to make their intentions clear with their actions on these proposals.

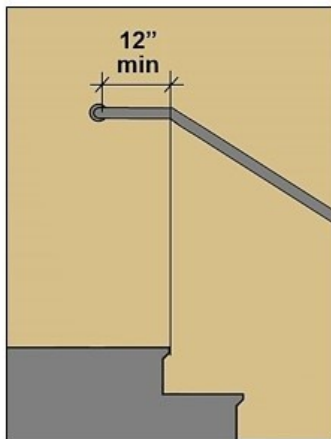
Reason Statement: One of the most common handrail conflicts fabricators undergo with design professionals, contractors and inspectors is the proper termination of handrail extensions. Architectural drawings and plans continue to be widely drawn and distributed with incorrect minimum termination lengths and premature changes in direction. The family of ICC codes, A117.1, ADA and ABA covertly state where to measure the minimum extension length to and understate that handrail extensions “shall be in the same direction” before any change in direction; this leads to the codes and standards largely being misinterpreted by designers, contractors, fabricators, and inspectors that the minimum extension length is required to be met before any change in direction over landings is permitted. The diagram figures of A117.1, 2010 ADA, ABA and posted information on the US Access Boards website clearly explain that handrail extensions are to be measured to the furthest usable portion of the handrail before a return or termination, and specifically not to use a handrails overall length.

This code change specifically addresses both the issues outlined above by clearly defining the parameters a handrail termination is to be measured to, and the minimum length a handrail extension shall meet before any change in direction is allowed. The diagram figures shown below provide visual reference of the intended points to measure extensions to in A117.1, 2010 ADA & ABA, the figures however are not part of the IBC. Thus this code change provides a written description within the IBC that designers, contractors, manufactures and inspectors can clearly follow that will produce a result that meets the intent of the code for the extensions to be fully usable for the entire minimum length before any change in direction or termination occurs.

Specifications for handrails also address the diameter of circular cross sections and required knuckle clearance.

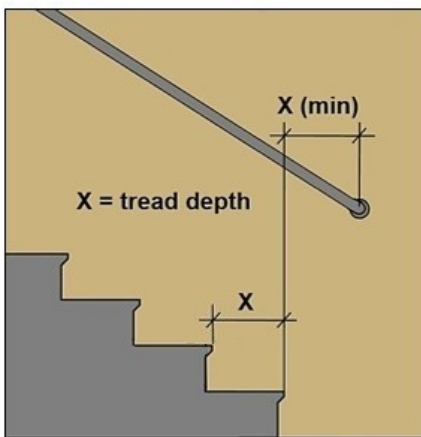


Top Handrail Extension



Handrails at the top of stairways must extend 12" minimum horizontally above the landing beginning directly above the first riser nosing or be continuous to the handrail of an adjacent stair flight (§505.10.2).

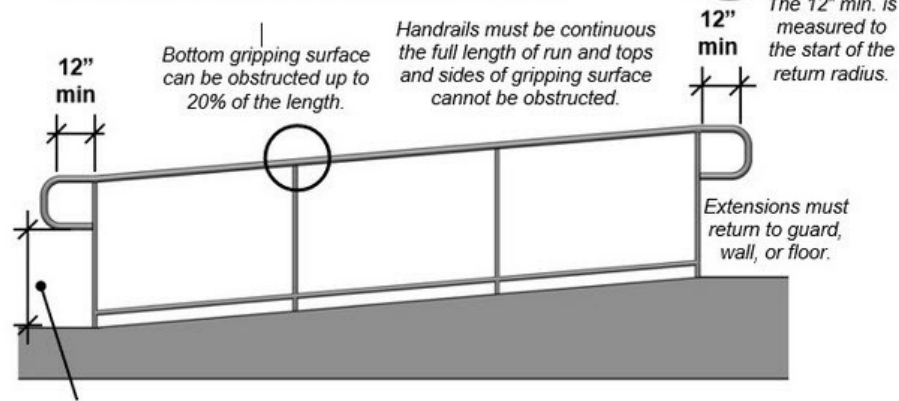
Bottom Handrail Extension



Handrails at the bottom must extend beyond the last riser nosing at the slope of the stair flight for a distance at least equal to one tread depth or be continuous to the handrail of an adjacent stair flight protruding objects.

Handrail Continuity and Extensions

Extensions 12" long min. in the same direction of travel are required at the top and bottom of runs (except for inside rail of switchback ramps) to provide support before entering or exiting ramps.



Extensions with a leading edge 27" high max. can extend any amount from posts. Those with a leading edge higher than 27" are limited to a 12" protrusion from posts (§307.3). The sloping portion of handrails are not required to comply with requirements for protruding objects.

Surface requirements and clearances facilitate a power grip along the length of handrails. Handrails can have circular or non-circular cross-sections, but must have rounded edges. The gripping surface and adjacent surfaces must be free of abrasive or sharp elements.

Bibliography: The figures shown were downloaded from the U.S. Access Board - Home ([access-board.gov](https://www.access-board.gov))

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This proposal is providing clarification of already required parameters within the code.

E77-21

IBC: 1014.7 (IFC:[BE]1014.7)

Proponents: David Cooper, representing Stairbuilders and Manufacturers Association (Coderep@stairways.org)

2021 International Building Code

Revise as follows:

1014.7 Clearance. Clear space between a *handrail* and a wall or other surface shall be not less than 1¹/₂ inches (38 mm). A *handrail* and a wall or other surface adjacent to the *handrail* shall be free of any sharp or abrasive elements.

Exceptions:

1. A decrease in the clearance due to the curvature or angle of handrail returns shall be allowed.
2. Mounting flanges, no more than 1/2" (12.7 mm) thick at the returned ends of handrails shall be allowed.

Reason Statement: **Exception 1** is necessary because the code requires the return of handrails that effectively narrow the required clearance.

To avoid a decrease in the clearance would require a right-angle return that exposes an objectionably sharper outside corner.

Exception 2 provides for commonly used mounting flanges used to connect the returned end to the wall. Using a flange mount can provide for compliant structural attachment and eliminate the need to use a bracket at the end. Unlike brackets that obstruct the bottom grasping surface of Type I handrails at a critical point where entry and exit from the stairway require a change of gait and postural stabilization the use of a flange mount improves safe use and access.

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

This will not affect design, labor or material costs to comply.

E77-21

E78-21

IBC: 1014.7.1 (New) [IFC:[BE] 1014.7.1 (New)]

Proponents: Joseph Summers, representing ICC Region VI

2021 International Building Code

1014.7 Clearance. Clear space between a *handrail* and a wall or other surface shall be not less than 1½ inches (38 mm). A *handrail* and a wall or other surface adjacent to the *handrail* shall be free of any sharp or abrasive elements.

Add new text as follows:

1014.7.1 Spacing. The space between the handrail and projecting objects below the handrail shall be 1 ½ inches (38 mm) minimum. The space between the handrail and projecting objects above the handrail shall be 12 inches (305 mm) minimum.

Reason Statement: The 12-inch minimum space requirement above the handrail is to allow for sufficient access and the possibility that a person may lean on the handrail for support while traversing up or down the stairs. This language is in line with requirements for grab bars in ICC/ANSI A117.1, Section 609.3.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is providing clarification on handrail requirements

E78-21

E79-21

IBC: 1014.8 (IFC:[BE]1014.8)

Proponents: Joseph Summers, representing ICC Region VI

2021 International Building Code

Revise as follows:

1014.8 Projections. On *ramps* and on ramped *aisles* that are part of an *accessible* route, the clear width between *handrails* shall be 36 inches (914 mm) minimum. Projections into the required width of *aisles*, *stairways* and *ramps* at each side shall not exceed 4 1/2 inches (114 mm) at or below the *handrail* height. Projections into the required width shall not be limited above the minimum headroom height required in Section 1011.3. The maximum reach from the edge of the walking surface to the backside of the handrail shall not exceed 4 1/2 inches (114 mm). Projections due to intermediate *handrails* shall not constitute a reduction in the egress width. Where a pair of intermediate *handrails* are provided within the *stairway* width without a walking surface between the pair of intermediate *handrails* and the distance between the pair of intermediate *handrails* is greater than 6 inches (152 mm), the available egress width shall be reduced by the distance between the closest edges of each such intermediate pair of *handrails* that is greater than 6 inches (152 mm).

Staff Note: E72-21, E73-21 and E79-21 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: Design Professionals are coming up with unique ways of construction that are not clearly addressed in the codes. Handrails are intended to aid individuals in maneuvering up and down stairs and ramps with some individuals needing to be close to a handrail for physical reasons. The intent of this code proposal is to help address this issue and not create a situation as pictured here.



Cost Impact: The code change proposal will not increase or decrease the cost of construction. The intent is to provide clarification on handrail placement.

E79-21

E80-21

IBC: 1015.2 (IFC:[BE]1015.2)

Proponents: David Cooper, representing Stairbuilders and Manufacturers Association (Coderep@stairways.org)

2021 International Building Code

Revise as follows:

1015.2 Where required. *Guards* shall be provided for those portions of ~~located along~~ open-sided walking surfaces, including floors, 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. Gaps at the top of guards shall be less than 4 inches (102 mm) in length. *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: The change to the first sentence correlates with a similar change implemented in the 2021 IRC as shown below.

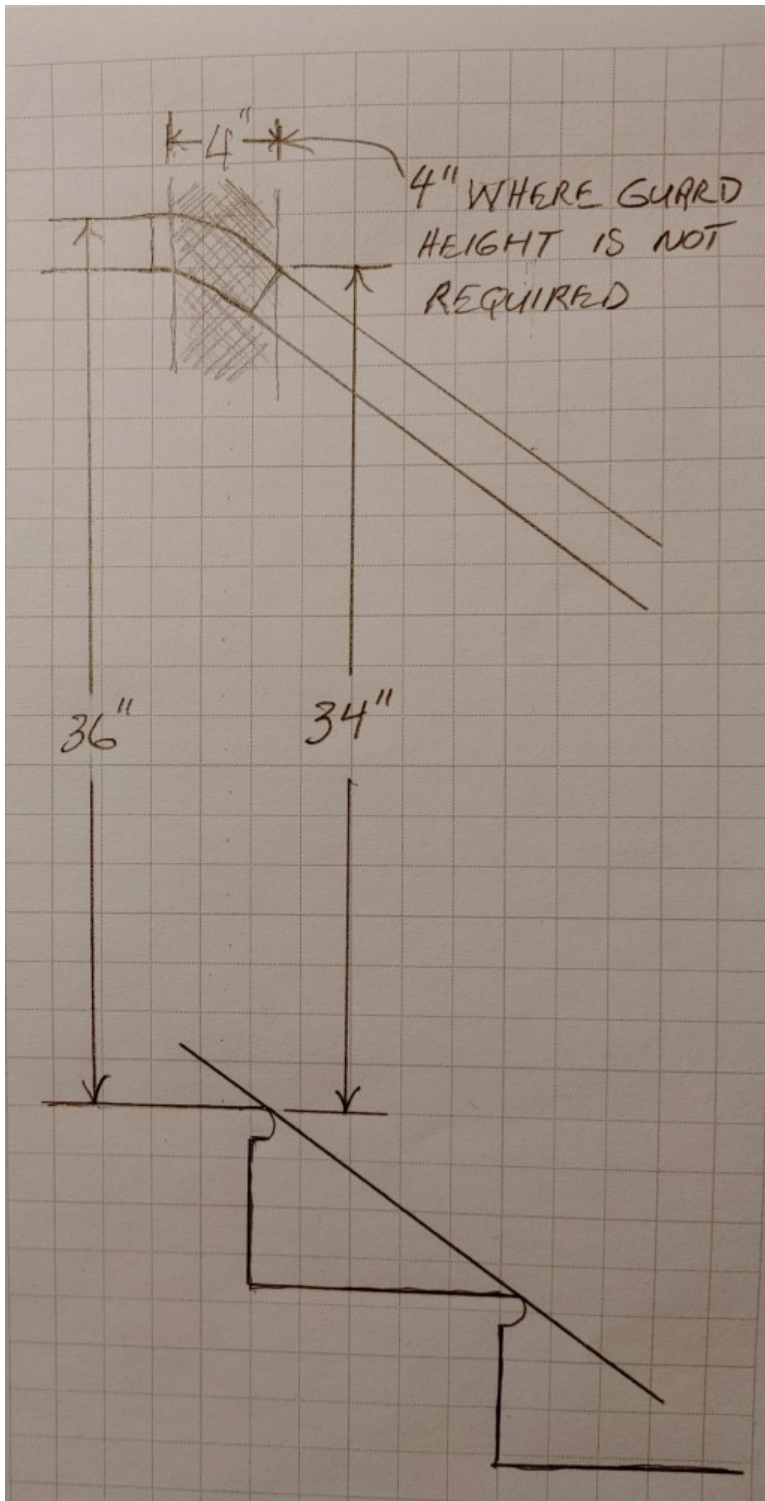
R312.1.1 Where required.

Guards shall be **provided for those portions** of open-sided walking surfaces, including **floors**, 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. Insect screening shall not be considered as a guard. (**emphasis added**)

Many guards are provided in areas where the elevation is not constant. As in the IRC this change to the IBC clarifies the intent of the code to provide a guard only on that portion of an elevated surface exceeding the specified height above the floor or grade below.

The additional sentence inserted recognizes that the code does not specify that guards must have a continuous top, or how guards terminate as it does with handrails. Consequently, the code does not limit the use of simple pilons, or bollards spaced as far apart as 21 inches to suffice as the required guard in applications where a 21-inch opening limitation is allowed. Guards need not be continuous to serve their defined purpose to limit the possibility of a fall to a lower elevation nor does the top of the guard need to terminate in a wall or other portion of the structure when the guard is supported by connections at points below the top of the guard. The limit provided in this proposal of four inches is like the smallest guard opening. Four inches is a reasonable limit for a horizontal gap at the top of the guard that can be easily complied with in any occupancy and will not further restrict the opening limitations allowed below the top of the guard.

It is also the intent of this proposal to provide a four-inch “gap zone” to allow a smooth transition from stair guard height to level guard height at the top of flights. The “gap zone” limit will clarify that a guard of any height or none would be permitted. Currently in certain residential applications the code allows the handrail to serve as the top of the stair guard and requires the handrail to be continuous to the top riser. Where the nosing projects over the top riser a level guard is required at a higher height than allowed for the handrail creating an overlapping conflict. Figure 1 illustrates a very typical residential stair. The handrail serves as the top of the stair guard at the lowest possible height to allow the grasp of children. The handrail does not reach guard height until it is well past the top nosing where a taller level guard height is required. The over easing shown is simply a much safer condition that is currently not allowed by the most common interpretations. This change resolves the conflict in the requirements.



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

Due to the many varied guard designs and materials no exact cost can be determined. Although most guards would not increase in cost those that are currently designed as simple vertical pilons or bollards will be most affected as well as those designed to terminate 21 inches away from a wall or other object will need to be extended. The 21-inch sphere rule guard systems as most commonly installed of pipe would not increase in cost. Other guard systems would not be increased in cost.

E81-21

IBC: 1015.3 (IFC:[BE]1015.3)

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:

1015.3 Height. Required *guards* shall be not less than 42 inches (1067 mm) high, measured vertically as follows:

1. From the adjacent walking surfaces.
2. On *stairways* and stepped *aisles*, from the line connecting the leading edges of the tread *nosings*.
3. On *ramps* and ramped *aisles*, from the *ramp* surface at the guard.

Exceptions:

1. For occupancies in Group R-3 ~~not more than three stories above grade in height~~ and within individual *dwelling units* in occupancies in Group R-2 ~~not more than three stories above grade in height with separate means of egress~~, required *guards* shall be not less than 36 inches (914 mm) in height measured vertically above the adjacent walking surfaces. Guards serving exterior spaces accessed from a dwelling unit and located not more than 3 stories above grade plane shall be not less than 36 inches (914 mm) in height measured vertically above the adjacent walking surfaces.
2. For occupancies in Group R-3, and within individual *dwelling units* in occupancies in Group R-2, *guards* on the open sides of *stairs* shall have a height not less than 34 inches (864 mm) measured vertically from a line connecting the leading edges of the treads.
3. For occupancies in Group R-3, and within individual *dwelling units* in occupancies in Group R-2, where the top of the *guard* serves as a *handrail* on the open sides of *stairs*, the top of the *guard* shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the leading edges of the treads.
4. The *guard* height in assembly seating areas shall comply with Section 1030.17 as applicable.
5. Along *alternating tread devices* and ships ladders, *guards* where the top rail serves as a *handrail* shall have height not less than 30 inches (762 mm) and not more than 34 inches (864 mm), measured vertically from the leading edge of the device tread *nosings*.
6. In Group F occupancies where *exit access stairways* serve fewer than three stories and such *stairways* are not open to the public, and where the top of the *guard* also serves as a *handrail*, the top of the *guard* shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the leading edges of the treads.

Reason Statement: The purpose of this proposal is to make the language easier to understand and more reasonable. The height of a guard located within a dwelling unit should be consistent. Whether it is in a Group R-3 dwelling unit or an individual dwelling unit in a Group R-2 occupancy, the requirements should be the same. The level of hazard is the same in both. The existing language that limited the exception to Group R-2 occupancies 3 stories or less does not make any sense. What makes a fall any more dangerous within a dwelling unit on the second floor than a dwelling unit on the sixth floor. It also does not make sense to limit this to buildings with separate occupancies. The presences of one or two exits has no bearing on the fall protection within a dwelling unit.

We have added language to clarify that guards outside of the dwelling unit such as decks and balconies will need to have guards with a minimum height of 42 inches if the unit is more than three stories above grade plane. This seems reasonable since we believe that is what the original language was intended to do.

Cost Impact: The code change proposal will decrease the cost of construction
The costs will decrease slightly since taller guards will not be required within the dwelling units.

E81-21

E82-21

IBC: 1015.3 (IFC:[BE] 1015.3)

Proponents: Thomas Zuzik Jr, of Railingcodes.com representing the National Ornamental & Miscellaneous Metals Association (NOMMA), representing the National Ornamental & Miscellaneous Metals Association (NOMMA) (coderep@railingcodes.com)

2021 International Building Code

Revise as follows:

1015.3 Height. Required *guards* shall be not less than 42 inches (1067 mm) high, measured vertically as follows:

1. From the adjacent walking surfaces.
2. On *stairways* and stepped *aisles*, from the line connecting the leading edges of the tread *nosings*.
3. On *ramps* and ramped *aisles*, from the *ramp* surface at the guard.

Exceptions:

1. For occupancies in Group R-3 not more than three stories above grade in height and within individual *dwelling units* in occupancies in Group R-2 not more than three stories above grade in height with separate *means of egress*, required *guards* shall be not less than 36 inches (914 mm) in height measured vertically above the adjacent walking surfaces.
2. For occupancies in Group R-2 and R-3, within the interior space in individual dwelling units, where the open-sided walking surface or landing are located not more than 25 feet (7.62 meters) measured vertically to the floor or grade below, required guards shall not be less than 36 inches (914 mm) in height measured vertically above the adjacent walking surface or landing.
- 2.3. For occupancies in Group R-3, and within individual *dwelling units* in occupancies in Group R-2, *guards* on the open sides of *stairs* shall have a height not less than 34 inches (864 mm) measured vertically from a line connecting the leading edges of the treads.
- 3.4. For occupancies in Group R-3, and within individual *dwelling units* in occupancies in Group R-2, where the top of the *guard* serves as a *handrail* on the open sides of *stairs*, the top of the *guard* shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the leading edges of the treads.
- 4.5. The *guard* height in assembly seating areas shall comply with Section 1030.17 as applicable.
- 5.6. Along *alternating tread devices* and ships ladders, *guards* where the top rail serves as a *handrail* shall have height not less than 30 inches (762 mm) and not more than 34 inches (864 mm), measured vertically from the leading edge of the device tread *nosings*.
- 6.7. In Group F occupancies where *exit access stairways* serve fewer than three stories and such *stairways* are not open to the public, and where the top of the *guard* also serves as a *handrail*, the top of the *guard* shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the leading edges of the treads.

Reason Statement: Both the IBC & IRC have accepted the reduction in guard height from 42 inches to 36 inches for private dwelling units since the first model ICC code publications. The current height exceptions within the ICC's family of model codes are focused on a predetermined building height of 3 stories and centered around that the occupants are extremely familiar with their living environment. This code change proposal builds on the established history of the 36-inch height exception currently within the 2021 IBC under exception (1), in Section 1015.3 Height and published in prior model code years also.

This proposal specifically limits the new exception to openside walking surfaces and landings within the interior space of individual dwelling units, within occupancy Groups R-3 & R-2.

The proposal is centered on allowing an owner of a 2 or 3 floor unit within a Group R-2 building who's unit is located on upper floor levels within a building more than 3 stories in height or owns a single-family R-3 dwelling more than 3 stories, by allowing the same guard height exception as a home 3 stories or less; but specifically limits the exception to only the interior area of the dwelling, and only when the interior openside fall in question is less than 25 feet in total rise.

There are many dwelling units that have an interior single floor level rise to a second level located along a stair flight, were the stair flight guard is allowed to be reduced in height from 42-inches to 34-38 inches for the handrail height, however once reaching a mid-landing or the 2nd level are now required to increase the height changing the design of the pattern or ornamental look of the guard. Wanting to keep a consistent height for both the stairs and the landings is highly important when designers are working with ornamental infill in guards.

This new exception is different than exception 1 though similar in wording, however, both exceptions are required to hold the line with the widely established exception allowing the 36-inch guard height for very specific dwelling unit. The history of why previous model code proposals have not had this specific exception is of the concern for making sure that the exception is not used for public areas and private dwelling fall heights above 3 stories. By limiting the exception specifically to interior conditioned space of an individual dwelling and attaching a maximum fall height limit to 25 feet, keeps the exception well within the parameters of the existing exception 1. As to the 25-foot vertical rise limit, this is based on the approximate

maximum rise a dwelling unit might have when 2 stair flights are stacked above each other without any mid-landings in either of the stair flights. The horizontal measuring parameters for the 36-inch is based on long established code language for required guards under Section 1015.1.

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

Having to select a cost impact when submitting a proposal, there will be a savings on projects, but this savings will be very minimal for the most common project if any. The major savings will be seen on much higher cost projects with highly ornamental and detailed guards.

E82-21

E83-21

IBC: 1015.8, 1015.8.1 (IFC:[BE]1015.8, 1015.8.1)

Proponents: Jeff Inks, representing Window & Door Manufacturers Association (jinks@wdma.com); Jennifer Hatfield, J. Hatfield & Associates, representing Fenestration & Glazing Industry Alliance (formerly AAMA) (jen@jhatfieldandassociates.com)

2021 International Building Code

Revise as follows:

1015.8 Window openings. Windows in Group R-2 and R-3 buildings including *dwelling units*, where the bottom of the clear opening of an operable window is located less than 36 inches (914 mm) above the finished floor and more than 72 inches (1829 mm) above the finished grade or other surface below on the exterior of the building, shall comply with ~~one of~~ the following:

1. Where the bottom of the clear opening of the window is located more than 72 inches (1829 mm) and less than 75 feet (22 860 mm) above the finished grade or other surface below on the exterior of the building, the window shall comply with one of the following:
 1. ~~Operable windows where the top of the sill of the opening is located more than 75 feet (22 860 mm) above the finished grade or other surface below and that are provided with window fall prevention devices that comply with ASTM F2006.~~
 - 1.1.2. Operable windows where the openings will not allow a 4-inch-diameter (102 mm) sphere to pass through the opening when the window is in its largest opened position, provided the opening is not required for emergency escape or rescue.
 - 1.2.3. Operable windows where the openings are provided with window fall prevention devices that comply with ASTM F2090.
 - 1.3.4. Operable windows where the openings that are provided with window opening control devices that comply with Section 1015.8.1 ASTM F2090. The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by Section 1031.3.1 for emergency escape rescue openings.
2. Where the bottom of the clear opening of the window is located 75 feet (22 860 mm) or above from the finished grade or other surface below on the exterior of the building, the window shall comply with one of the following:
 - 2.1. Operable windows where the openings are provided with window fall prevention devices that comply with ASTM F2090.
 - 2.2. Operable windows where the openings will not allow a 4-inch-diameter (102 mm) sphere to pass through the opening when the window is in its largest opened position.
 - 2.3. Window fall prevention devices that comply with ASTM F2006.

Delete without substitution:

~~**1015.8.1 Window opening control devices.** Window opening control devices shall comply with F2090—17. The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by Section 1031.3.1.~~

Reason Statement: This proposal clarifies the window opening protection requirements of this section as they apply based on the height above grade of an operable window. It also modifies the specific location of where height is to be measured – “at the bottom of the clear opening” instead of “top of the sill of the opening” – to be consistent with all other I-code definitions and requirements applicable to operable windows where the height of them is a factor.

The intent of the section is to clearly separate window opening protection requirements/options for operable windows where the lowest portion of the window opening is located more than 72 inches (1829 mm) and below 75 feet (22 860 mm) above the finished grade versus those located 75 feet (22 860 mm) or above from the finished grade.

As written, while the charging language states “shall comply with one of the following options”, there has been misinterpretation that the first option (where window fall prevention devices complying with ASTM F2006 are allowed where the lowest portion of the window opening is located 75 feet or above) applies to other options such as Option 2 where the opening of the window restricts the passage of a 4 inch diameter sphere. This proposal clarifies that the ASTM F2006 option is independent of any other option and does not apply to the option where the opening of the window restricts the passage of a 4 inch diameter sphere.

Further, we believe it is also important to expressly state that the option to limit the window opening to 4” is not permissible for required emergency escape and rescue openings.

Finally, it also makes editorial sense to move the provisions In 1015.8.1 to Item 3 for window openings located above 72 inches and below 75 feet above grade as those provisions are only applicable to window opening control devices on window openings in those locations and there is no need

for a separate section for them.

After considering several options for providing better clarity with respect to the requirements of this section, we believe that separating the requirements as they apply based on height is the most effective way for doing so.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
As there are no substantive changes to the technical requirements or application of them, there is no cost impact.

E83-21

E84-21

IBC: 1015.9 (New) [IFC[BE]1015.9 (New)]

Proponents: Peter Zvingilas, ICC Region VI, representing ICC Region VI (pzvingilas@groton-ct.gov)

2021 International Building Code

Add new text as follows:

1015.9 Guards at retaining walls. Where there is a walking surface, parking lot or driveway on the high side of a retaining wall that is closer, measured horizontally, than 3 feet (914.4 mm) to the outward face of the retaining wall and the retaining wall, measured vertically, from the top of the wall to the finished grade is greater than 4 feet (1219 mm), a guard shall be provided complying with Sections 1015.3, 1015.4 and 1607.9. Grass, planting beds or landscaped areas shall not be considered as a walking surface.

Reason Statement: Retaining walls do not always necessitate guard protection. The code language as written is ambiguous and can create an AHJ to make his own determination on how to interpret. If you follow the language in 1015.2 as it is written all elevation changes greater than 30" **SHALL** require guard protection. Yet we also state in section 105.2 **any retaining wall not over 4 feet (1219mm) does not require a permit.** This leaves the space between 30" and 48" of elevation change on a retaining wall with concerns.

1) We require guard protection to be designed to resist a linear load of 50 lbs per linear foot, yet do not require a permit for the wall it sits on if under 48" high. How do we determine this construction design without an engineered design on the wall? Or was it the intent of the code that since retaining walls not over 4 feet do not require permits we do not need to add guards? The fact that we have retaining walls not over 4 feet as not needing a permit in the code already leads us to believe that it was found to be not be a necessary item to enforce, yet we have language requiring protection in a different section. By adding this section into the code we have now incorporated a standard to use for determining when guard protection is required for retaining walls. We are using language which is symbiotic with the permit exemption section and 1015.2 providing guard protection under specific circumstances.

2) When providing landscaping design to commercial projects designers will incorporate retaining walls to help with elevation changes. This does not mean that these areas are readily accessible to the public nor are allowed to be in that area. This is an added cost to construction when enforced as it is written, yet also not enforced all the time. By adding this section we will aid in alleviating the inconsistency in enforcement and provide a standard to follow.

3) By providing detail on a walking surface located closer than 3 feet we are conceding that some situations do call for more protection due to the proximity to the public. If the intent is for public to be near this wall then guard protection should be added, if the intent is that the public should not be there then no we do not need to enforce. We also add that grass, planting beds or landscaped areas are not considered a walking surface to allow designers the ability to design in accordance.

Cost Impact: The code change proposal will decrease the cost of construction
This will allow areas that comply to not require guards.

E84-21

E85-21

IBC: 1016.2 (IFC:[BE]1016.2)

Proponents: Eirene Knott, BRR Architecture, representing Metropolitan Kansas City Chapter of the ICC (eirene.knott@brrarch.com)

2021 International Building Code

Revise as follows:

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

1. *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.
2. In other than Group H occupancies, egress from a room or space is allowed to pass through adjoining or intervening rooms or areas provided that such adjoining rooms or areas and the area served are accessory to one or the other and provide a discernible path of egress travel to an exit. ~~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.~~

3. In Group H occupancies, egress from a room or space is allowed to pass through adjoining or intervening rooms or areas provided that such adjoining rooms or areas are the same or lesser hazard occupancy group and provide a discernible path of egress travel to an exit.
- 3.4. An *exit access* shall not pass through a room that can be locked to prevent egress.
- 4.5. *Means of egress* from *dwelling units* or sleeping areas shall not lead through other sleeping areas, toilet rooms or bathrooms.
- 5.6. 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.

Reason Statement: The proposed code change eliminates an exception to an exception. By specifically calling out what is permitted in an H occupancy, there is no confusion as to how to apply the previous exception which included F and S occupancies.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is editorial in nature only and should not impact construction cost. If anything it may decrease it if the exception only applies to H occupancies, which is the intention.

E85-21

E86-21

IBC: TABLE 1017.2, 1017.2.3 (New) [IFC:[BE] TABLE 1017.2, 1017.2.3 (New)]

Proponents: William Koffel, representing Semiconductor Industry Association (wkoffel@koffel.com)

2021 International Building Code

Revise as follows:

**TABLE 1017.2
EXIT ACCESS TRAVEL DISTANCE^a**

OCCUPANCY	WITHOUT SPRINKLER SYSTEM (feet)	WITH SPRINKLER SYSTEM (feet)
A, E, F-1, M, R, S-1	200 ^e	250 ^b
I-1	Not Permitted	250 ^b
B	200	300 ^c
F-2, S-2, U	300	400 ^c
H-1	Not Permitted	75 ^d
H-2	Not Permitted	100 ^d
H-3	Not Permitted	150 ^d
H-4	Not Permitted	175 ^d
H-5	Not Permitted	200 ^c
I-2, I-3	Not Permitted	200 ^c
I-4	150	200 ^c

For SI: 1 foot = 304.8 mm.

a. See the following sections for modifications to exit access travel distance requirements:

- Section 402.8 : For the distance limitation in malls
- Section 407.4: For the distance limitation in Group I-2.
- Sections 408.6.1 and 408.8.1: For the distance limitations in Group I-3.
- Section 411.2: For the distance limitation in special amusement areas.
- Section 412.6: For the distance limitations in aircraft manufacturing facilities.
- Section 1006.2.2.2: For the distance limitation in refrigeration machinery rooms.
- Section 1006.2.2.3: For the distance limitation in refrigerated rooms and spaces.
- Section 1006.3.4: For buildings with one exit.
- Section 1017.2.2: For increased distance limitation in Groups F-1 and S-1.
- Section 1017.2.3: For increased distance limitation in Group H-5
- Section 1030.7: For increased limitation in assembly seating.
- Section 3103.4: For temporary structures.
- Section 3104.9: For pedestrian walkways.

b. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where automatic sprinkler systems are permitted in accordance with Section 903.3.1.2.

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

d. Group H occupancies equipped throughout with an automatic sprinkler system in accordance with Section 903.2.5.1.

e. Group R-3 and R-4 buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.3. See Section 903.2.8 for occupancies where automatic sprinkler systems are permitted in accordance with Section 903.3.1.3.

1017.2.1 Exterior egress balcony increase. *Exit access* travel distances specified in Table 1017.2 shall be increased up to an additional 100 feet (30 480 mm) provided that the last portion of the *exit access* leading to the exit occurs on an exterior egress balcony constructed in accordance with Section 1021. The length of such balcony shall be not less than the amount of the increase taken.

1017.2.2 Groups F-1 and S-1 increase. The maximum *exit access* travel distance shall be 400 feet (122 m) in Group F-1 or S-1 occupancies where all of the following conditions are met:

1. The portion of the building classified as Group F-1 or S-1 is limited to one *story* in height.
2. The minimum height from the finished floor to the bottom of the ceiling or roof slab or deck is 24 feet (7315 mm).
3. The building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

Add new text as follows:

1017.2.3 Group H-5 Increase. The maximum *exit access* travel distance shall be 300 feet (91 m) in the fabrication areas of Group H-5 occupancies where all of the following conditions are met:

1. The width of the fabrication area is 300 feet (91 m) or greater.
2. The area of the fabrication area is 220,000 sq. ft. (18,600 m²) or greater.
3. The height of the fabrication area, measured between the raised metal floor and the clean filter ceiling, is 16 feet (48768 mm) or greater.
4. The supply ventilation rate is 20 cfm/sq. ft. or greater and shall remain operational.

Reason Statement: The Semiconductor Industry Association commissioned a study by Jensen Hughes to evaluate the feasibility of increasing the exit access travel distance in the fabrication areas of a Group H-5 occupancy. A decision was made to see determine if the travel distance could be increased to 300 feet, as permitted for Group B occupancies. When the Group H-5 requirements were introduced into the Legacy Codes, it was stated that the control requirements would be such that the fire risk associated with a Group H-5 occupancy would be similar to that associated with a Group B occupancy. This concept is reflected in the building area limits in Table 506.2 for other than the recently introduced Type IV building area limits.

The Pathfinder people movement model was utilized to calculate required safe egress times (RSET) and the Fire Dynamics Simulator (FDS) was utilized to evaluate tenability conditions that would result from the design fire.

Bounding facility design parameters were selected based on input from the semiconductor industry to develop minimum requirements for a generic fabrication facility (Fab). These parameters were used as inputs for the computer modeling that was performed and include:

- + Minimum fab width of 300 ft.
- + Minimum fab area of 220,000 SF
- + Minimum distance between raised metal floor (RMF) and clean filter ceiling (CFC) system of 16 ft
- + Minimum (supply) ventilation rate of 20 cfm/SF (at least 25% fan filter unit (FFU) coverage). (must remain running at full capacity during egress)

Performance Criteria

Performance objectives were selected for the generic study to ensure that occupants would not encounter untenable conditions during the period of egress. Visibility, thermal exposure, and smoke toxicity are the commonly used tenability parameters for egress studies. Table 1 summarizes the threshold criteria that were used in the study.

Table 1 – Summary of Performance Criteria for Egress Study

Table 1 – Summary of Performance Criteria for Egress Study

<i>Parameter</i>	<i>Performance Criteria¹</i>
Visibility distance	At least 33 ft (10 m) to backlit object while en route to exit; At least 10 ft (3.3 m) to backlit object while in queue
Temperature	Less than 76 °C (169 °F) ²
Toxic Gas (measured as Carbon Monoxide concentration)	Less than 600 ppm ³

¹ All values measured at 6 ft (1.8 m) above floor

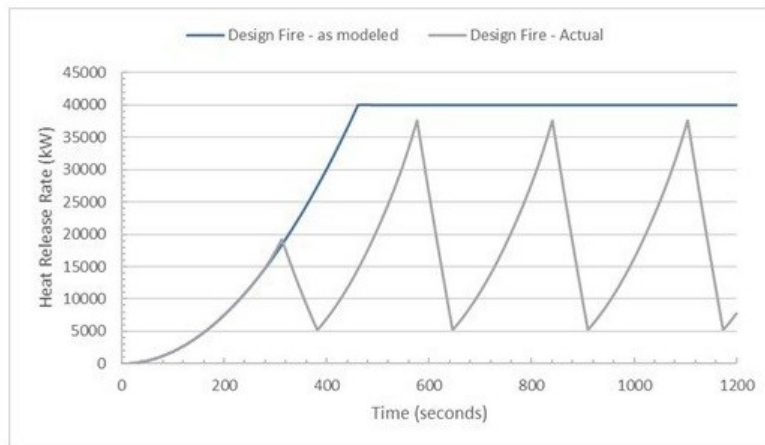
² Based on 20 minute exposure before incapacitation [ref]

³ Concentration levels of approximately 600 ppm can affect cardiac function for some individuals [ref]

Design Fire Scenario

The design fire scenario was based on a flammable liquid spill that ignites and spreads to a process tool. The resulting heat release rate profile was developed based on a generic tool size, the spacing between tools, and a fuel load limit of 1 lb/ft² of non-FM 4910 plastic. This information was used to model the fire development for a worst-case tool, and the ability for fire to spread to adjacent tools either in the same row or across the bay or chase.

A maximum heat release rate of 20 MW was calculated for each tool with potential spread to 2 adjacent tools in the time period of evacuation. At any given time, no more than 2 tools would be burning at this steady-state heat release rate of 20 MW each, for a total of 40 MW. Rather than crediting the decay and growth periods that would occur during the time period of tool fire spread, an ultra-fast growing fire that reaches a steady-state value of 40 MW was used to provide a conservative bound for the tool fire scenario (see Figure 1)



Three fire locations (center, southwest corner and west wall locations) were evaluated to examine the effect of location on smoke spread dynamics and the RSET values resulting when a reduced number of exits are available.

Figure 1 – Heat release rate profile for tool design fire scenario

Summary of Egress Times

RSET values were determined by summing the detection, warning, premovement and travel times required to travel to an exit stair and enter the vestibule. The detection time was identified using FDS model data for smoke detection and sprinkler activation, while allowing for the 90 second delay specified in NFPA 72. The warning time was based on IBC requirements for smoke control systems and the premovement time was conservatively selected based on literature data. Travel times were determined by Pathfinder assuming that 96.6% of building occupants travel unimpeded and 3.4% of building occupants require the use of crutches or a cane. These times are summarized in Table 2.

A safety factor of 1.5 was applied to the evacuation times as specified in IBC Section 909.4.6. As shown in Table 2, RSET values ranged between 10.9 and 15 minutes, with longer values corresponding to the southwest corner and west wall fire scenarios where an exit is closed for at least part of the egress time period. The largest RSET value resulted for the west wall fire location where all of the exits are initially available for use. At 380 seconds, the exit is blocked due to diminished visibility conditions, requiring that occupants in the queue travel to another exit.

Table 2 – Summary of Required Safe Egress Time Model Results

Table 2 – Summary of Required Safe Egress Time Model Results

Event	Center Fire No Exits Closed (seconds / minutes)	Southwest Corner Fire One Exit Closed (seconds / minutes)	West Wall Fire One Exit Closed at 380 seconds (seconds / minutes)
Detection	215 / 3.6	215 / 3.6	215 / 3.6
Warning	10 / 0.2	10 / 0.2	10 / 0.2
Pre-movement delay	30 / 0.5	30 / 0.5	30 / 0.5
Travel time	256 / 4.3	385 / 6.4	250 / 4.2
Evacuation time	511 / 8.5	640 / 10.7	678 / 11.3
RSET	655 / 10.9	847 / 14.1	904 / 15.0

Summary of Fire Modeling

FDS models were constructed for the three fire locations, incorporating sprinkler activation to examine mixing effects but not suppression effects. Model results showed that visibility is the limiting tenability parameter where smoke spreads radially from the fire location but never fills the entire Fab. Rather, a steady-state condition is reached for each scenario where the smoke generation rate is balanced with the ventilation rate. For each fire location, the visibility at 6 ft above the floor will exceed 98 ft in approximately 30-50% of the Fab when the steady-state condition is reached.

A sensitivity study was performed to determine if the model results are dependent on FFU coverage, ventilation rate/SF, FFU capacity, FFU dimensions, tool size, and tool height. With the exception of FFU coverage, it was determined that these parameters do not have a significant impact on the spread of smoke, heat and toxic gases in the Fab. Percentages greater than 25% of the FFUs will result in a smaller region of smoke spread.

Conclusions

Based on these results, Jensen Hughes finds that an egress distance of 300 ft. in a generic H5 fabrication design will meet the intent of the IBC where safe egress conditions exist, provided that the minimum design parameters for building width, square footage, ceiling height, and ventilation rate are met.. Therefore, the increased travel distance of 300 ft. (91.5 m) is acceptable and will not impact the safety of occupants in the event that emergency evacuation during a fire is necessary.

Bibliography: H5 Timed Egress Analysis, Performance-Based Design Study for Increasing the Maximum Exiting Distance for a Generic Semiconductor Fabrication Facility, Jensen Hughes, 2021.

Cost Impact: The code change proposal will decrease the cost of construction
Increasing the maximum exit access travel distance permits more efficient use of the area of the building.

E86-21

E87-21

IBC: 1018.6 (New) [IFC:[BE]1018.6 (New)]

Proponents: Timothy Stacy, representing Southern Oregon Fire Code Officials

2021 International Building Code

SECTION 1018 AISLES.

Add new text as follows:

1018.6 Dead ends. Dead-end aisles in assembly spaces shall comply with Section 1030.9.5. In other than assembly spaces, where more than one exit or exit access doorway is required, the exit access shall be arranged such that dead-end aisles do not exceed 50 feet in length.

Exceptions:

1. The dead-end aisle length shall not exceed the common path of egress travel distance requirements of Section 1006.2.1
2. Dead-end aisles shall not be limited in length where the length of the dead-end aisle is less than 2.5 times the least width of the dead-end aisle.

Reason Statement: The code provides dead-end limits for corridors, but does not provide dead-end limits for aisles with the exception of some occupancy-specific requirements. Enforcement officials may be misapplying requirements for corridors or dead-end aisles. 50 ft. is a reasonable limit since aisles are, by definition, open and therefore occupants are more likely to be aware of a need to evacuate compared to enclosed corridors. For example, in auto-parts stores, large racks of potentially hazardous merchandise create aisles and are often fixed to the floor. The IBC commentary for corridors considers the potential of a single fire event blocking a dead-end exit, and it is reasonable to apply the intent and safety benefits of dead-end limits to aisles

Cost Impact: The code change proposal will increase the cost of construction
May result in additional floor area to accommodate dead-end requirements.

E87-21

E88-21

IBC: 1019.3 (IFC:[BE]1019.3)

Proponents: Jeff Perras, representing Code Red Consultants, LLC (jeffp@crcfire.com)

2021 International Building Code

Revise as follows:

1019.3 Occupancies other than Groups I-2 and I-3. In other than Group I-2 and I-3 occupancies, floor openings containing *exit access stairways* or *ramps* shall be enclosed with a shaft enclosure constructed in accordance with Section 713.

Exceptions:

1. *Exit access stairways* and *ramps* ~~within a two-story opening complying with Section 712.1.9, 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 occupied roofs.

Reason Statement: There has been inconsistent interpretation of the code language in Section 1019.3-1 by designers and AHJs since it was added in the 2009 IBC. Some interpret the language "open to other stories" to mean entire stories and some interpret it to be isolated areas of the stories. The IBC has always allowed two-story vertical openings as long as they were separated from other floor openings with construction conforming to required shaft enclosures. There used to be a restriction in Section 712.1.9 that prohibited the floor openings from being used for egress. Since this restriction was removed there is been an increase in confusion between the two sections.

This code change proposes to align the two sections and eliminate the confusion for designers and AHJs. Section 712.1.9 requires two-story floor openings to be separated from other floor openings with construction conforming to required shaft enclosures. This separation provides an equivalent level of protection as a horizontal separation and utilizing it for egress should not change that concept. Also, section 1006.3.2 limits the number of stories that occupants can travel to reach an exit, so there really should be a need to prohibit the connected stories from being interconnected with other stories.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This code change will clarify the separation requirements for two-story floor openings used for egress.

E88-21

E89-21

IBC: 1020.1 (IFC:[BE]1020.1)

Proponents: Clay Aler, representing Self

2021 International Building Code

Revise as follows:

1020.1 General. Corridors serving as an exit access component in a *means of egress* system shall comply with the requirements of Sections 1020.2 through 1020.7.

Exception: Exit access corridors shall be permitted to comply with the aisle provisions in Sections 1018 where located within any of the following:

1. Care suites
2. Dwelling units of sleeping units
3. Tenant spaces and suites requiring only one means of egress complying with Section 1006.2.

Reason Statement: Corridor requirements per Section 1020 are applicable for enclosed means of egress components that are located in common or shared areas of a building that are used by multiple tenants. However, we are seeing local code officials require full compliance with corridor requirements for exit access components constructed with full height walls within tenant spaces, sleeping units, dwelling units, and care suites that otherwise would be compliant as aisles per Section 1018.

Exit access components within tenant spaces, sleeping units, and care suites serve only those respective occupants and cannot be used as a means of egress for occupants in the remainder of the building. Exit access components within tenant spaces, sleeping units, dwelling units, and care suites may be constructed with full height walls for many reasons, such as to provide privacy and/or to limit noise transmission. Requiring exit access components constructed with full height walls within these areas to comply with the corridor requirements of Section 1020 kicks in additional requirements for dead ends, air movement and construction continuity that would otherwise not be required within these spaces.

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

Approval of this code change will reduce the cost of corridors in some spaces by removing the requirement for fire-resistant walls and doors and some savings in the cost of the HCVAC system.

E89-21

E90-21

IBC: 1020.2 (IFC:[BE]1020.2)

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:

1020.2 Construction. Corridors shall be fire-resistance rated in accordance with Table 1020.2. The *corridor* walls required to be fire-resistance rated shall comply with Section 708 for *fire partitions*.

Exceptions:

1. A *fire-resistance rating* is not required for *corridors* in an occupancy in Group E where each room that is used for instruction has not less than one door opening directly to the exterior and rooms for assembly purposes have not less than one-half of the required means of egress doors opening directly to the exterior. Exterior doors specified in this exception are required to be at ground level.
2. A *fire-resistance rating* is not required for *corridors* contained within a *dwelling unit* or *sleeping unit* in an occupancy in Groups I-1 and R.
3. A *fire-resistance rating* is not required for *corridors* in *open parking garages*.
4. ~~A fire-resistance rating is not required for corridors in an occupancy in Group B that is a space requiring only a single means of egress complying with Section 1006.2.~~ A fire-resistance rating is not required for corridors located within an individual tenant space.
5. *Corridors* adjacent to the *exterior walls* of buildings shall be permitted to have unprotected openings on unrated *exterior walls* where unrated walls are permitted by Table 705.5 and unprotected openings are permitted by Table 705.8.

Reason Statement: Providing a fire-rated corridor within a single tenant space is very difficult and very seldom required. However, the existing language would require a rated corridor if the occupant load exceeds those outlined in Table 1020.2 and the building is not provided with a fire sprinkler system. Most jurisdictions do not enforce this requirement on the individual tenant space. It is also a maintenance and inspection issue for fire departments. If the internal corridor within a space is required to be fire-resistant rated, all of the doors are required to be 20-minute doors and they must be self-closing. No one wants their private office door closed all of the time, so they are typically propped open eliminating any protection. This proposal provides language that allows what is currently common practice in the design of tenant spaces.

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

For those areas where jurisdictions are requiring the rated corridors, the cost of constructing non-rated corridor will be less than the rated corridors.

E90-21

E91-21

IBC: 1020.3 (IFC: [BE] 1020.3)

Proponents: Jeffrey S. Grove, P.E. FSFPE, Jensen Hughes, representing Jensen Hughes (jgrove@jensenhughes.com)

2021 International Building Code

Revise as follows:

1020.3 Width and capacity. The required capacity of *corridors* shall be determined as specified in Section 1005.1, but the minimum width shall be not less than that specified in Table 1020.3.

Exception: In Group I-2 occupancies, ~~corridors are not required to have~~ a clear width of 96 inches (2438 mm) shall not be required for corridors within *care suites* complying with Section 407.4 and in areas where there will not be stretcher or bed movement for access to care or as part of the *defend-in-place* strategy.

Reason Statement: This proposal includes clarification that the increased, 96-inch minimum width requirement for Group I-2 *corridors* does not apply to *care suites*. As provided below, the commentary for the definition of a *care suite* explicitly addresses the “elimination of corridor width” requirements within *care suites* which also aligns with the requirements within NFPA 101, *Life Safety Code*.
From the IBC Code Commentary:

- **Care Suite.** In Group I-2 occupancies, a group of treatment rooms, care recipient sleeping rooms and the support rooms or spaces and circulation space within the suite where staff are in attendance for supervision of all care recipients within the suite, and the suite is in compliance with the requirements of Section 407.4.4.
- Care suites are designed to allow for a group of rooms to function as a unit in the treatment and care of patients. Suites provide flexibility in reaching an exit access. Use of suites is a particularly useful tool at intensive care units and emergency departments in patient treatment areas. Suites allow staff to have clear and unobstructed supervision of patients/care recipients in specific treatment and sleeping rooms through the elimination of corridor width or rating requirements. The term is not intended to apply to day rooms or business sections of the hospital. This term is only applicable to suites of patient rooms in Group I-2 occupancies, and should not be confused with similar layouts in other parts of the hospital or within other occupancies that may be referred to as a “suite.” Care suites are to meet the requirements of Section 407.

This proposal intends to provide clarification to align the requirements of Section 1020.3 and Table 1020.3 with the intent of *care suites* as detailed in the commentary for the definition of a *care suite*. This clarification addresses the allowance for *care suites* complying with Section 407.4.4 within Group I-2 occupancies to omit the increased, 96-inch minimum width intended for corridors used for patient relocation.

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

As the code change intent is to align with the definition commentary, the change is a clarification and it is not anticipated that this proposed change will significantly affect the construction cost. If any cost impact does exist, it is anticipated that the proposed clarification will allow for additional flexibility in *care suites* which may reduce construction cost.

E91-21

E92-21

IBC: 1020.7 (IFC:[BE]1020.7)

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

2021 International Building Code

Revise as follows:

1020.7 Corridor continuity. *Fire-resistance-rated corridors* shall be continuous from the point of entry to an *exit*, and shall not be interrupted by intervening rooms. Where the path of egress travel within a *fire-resistance-rated corridor* to the *exit* includes travel along unenclosed *exit access stairways* or *ramps*, the *fire-resistance rating* shall be continuous for the length of the *stairway* or *ramp* and for the length of the connecting *corridor* on the adjacent floor leading to the exit.

Exceptions:

1. Foyers, lobbies or reception rooms constructed as required for *corridors* shall not be construed as intervening rooms.
2. Enclosed elevator lobbies as permitted by Item 1 of Section 1016.2 shall not be construed as intervening rooms.
3. Corridors terminating at open exterior balconies or vestibule in accordance to Section 909.20 are not required to be continuous to an exit.

Reason Statement: Rated corridors are required to terminate at EXITS. Except for the two existing exceptions. However, per Section 909.20, access need to smokeproof enclosure shall be by way of a vestibule or an open exterior balcony. None of them are considered as exits. So a rated corridor could end at one of those two before someone reaches the smokeproof enclosure. Without this new exception that is not allowed. This exception will allow that.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This exception does not alter construction cost. It is merely to clarify the intend of the code.

E92-21

E93-21

IBC: 1021.4, 1027.5 (IFC[BE] 1021.4, 1027.5)

Proponents: John-Jozef Proczka, representing self (john-jozef.proczka@phoenix.gov)

2021 International Building Code

Revise as follows:

1021.4 Location. Exterior egress balconies shall have a minimum *fire separation distance* of 10 feet (3048 mm) measured at right angles from the exterior edge of the egress balcony to the following:

1. ~~Adjacent~~ Interior lot lines.
2. Other portions of the building.
3. Other buildings on the same lot unless the adjacent building *exterior walls* and openings are protected in accordance with Section 705 based on *fire separation distance*.

For the purposes of this section, other portions of the building shall be treated as separate buildings.

1027.5 Location. *Exterior exit stairways* and *ramps* shall have a minimum *fire separation distance* of 10 feet (3048 mm) measured at right angles from the exterior edge of the *stairway* or *ramps*, including landings, to:

1. ~~Adjacent~~ Interior lot lines.
2. Other portions of the building.
3. Other buildings on the same lot unless the adjacent building *exterior walls* and openings are protected in accordance with Section 705 based on *fire separation distance*.

For the purposes of this section, other portions of the building shall be treated as separate buildings.

Exception: *Exterior exit stairways* and *ramps* serving individual *dwelling units* of Group R-3 shall have a minimum *fire separation distance* of 5 feet (1525 mm).

Reason Statement: This proposal seeks to clarify the wording used to designate a lot line that is not associated with public right of way. The separation of the means of egress from public rights of way is not the intent of the word "adjacent" but it could be misinterpreted to mean this. These sections are intended to prevent the means of egress from being threatened by fire in other buildings or adjacent portions of the same building. This proposal uses the wording that is present and used for the measurement of open spaces associated with unlimited area buildings in Section 507.2. The term "interior" seems to be a better description of all lot lines that do not front public right of way when compared to "adjacent" which is much more confusing.

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

E93-21

E94-21

IBC: 1023.1, 1024.1 (IFC:[BE]1023.1, 1024.1)

Proponents: John-Jozef Proczka, representing self (john-jozef.proczka@phoenix.gov)

2021 International Building Code

Revise as follows:

1023.1 General. *Interior exit stairways* and *ramps* serving as an exit component in a *means of egress* system shall comply with the requirements of this section. *Interior exit stairways* and *ramps* shall be enclosed and lead directly to the exterior of the building or shall be extended to the exterior of the building with an *exit passageway* conforming to the requirements of Section 1024, except as permitted in Section 1028.2. ~~An interior exit stairway or ramp~~ The interior of the exit enclosure shall not be used for any purpose other than as a *means of egress* and a *circulation path*.

1024.1 General. Exit passageways serving as an exit component in a *means of egress* system shall comply with the requirements of this section. The interior of an exit passageway enclosures shall not be used for any purpose other than as a *means of egress* and a *circulation path*.

Reason Statement: This proposal is intended to clarify that the use of the exit component is regulated inside its enclosure, and not simply along its flights and landings. This is to prevent occupiable space and space that could serve as a hazard to the use of the exit component from being inside the enclosure. This is not seen as changing the intent of the provision already in place, but as a clarification.

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

This proposal will reduce the allowable uses inside exit enclosures, so it's possible some scenarios of construction would no longer be compliant that could have been determined compliant before.

E94-21

E95-21

IBC: 1023.5, 1024.6 (IFC:[BE] 1023.5, 1024.6)

Proponents: Peter Zvingilas, Region VI, representing ICC Region VI (pzvingilas@groton-ct.gov)

2021 International Building Code

Revise as follows:

1023.5 Penetrations. Penetrations into or through interior exit *stairways* and *ramps* are prohibited except where they directly serve the enclosure for the following :

1. Equipment and ductwork necessary for independent ventilation or pressurization.
2. *Fire protection systems.*
3. Security systems.
4. Two-way communication systems.
5. Electrical raceway for fire department communication systems.
6. Electrical raceway serving the *interior exit stairway* and *ramp* and terminating at a steel box not exceeding 16 square inches (0.010 m²).
7. Structural elements supporting the *interior exit stairway* or *ramp* or enclosure, such as beams or joists.

Such penetrations shall be protected in accordance with Section 714. There shall not be penetrations or communication openings, whether protected or not, between adjacent interior exit *stairways* and *ramps*.

Exception: *Membrane penetrations* shall be permitted on the outside of the *interior exit stairway* and *ramp*. Such penetrations shall be protected in accordance with Section 714.4.2.

1024.6 Penetrations. Penetrations into or through an *exit passageway* are prohibited except where they directly serve the enclosure for the following:

1. Equipment and ductwork necessary for independent ventilation or pressurization.
2. Fire protection systems.
3. Security systems.
4. Two-way communication systems.
5. Electrical raceway for fire department communication.
6. Electrical raceway serving the *exit passageway* and terminating at a steel box not exceeding 16 square inches (0.010 m²).

Such penetrations shall be protected in accordance with Section 714. There shall not be penetrations or communicating openings, whether protected or not, between adjacent exit passageways.

Exception: *Membrane penetrations* shall be permitted on the outside of the *exit passageway*. Such penetrations shall be protected in accordance with Section 714.4.2.

Reason Statement: The intent of this section is to allow penetrations of the stair enclosure only for systems or items that serve that enclosure, however the code language does not explicitly state this. This change clarifies the application of this section.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is an editorial item.

E95-21

E96-21

IBC: 1023.5, 1024.6 (IFC:[BE]1023.5, 1024.6)

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:

1023.5 Penetrations. Penetrations into or through *interior exit stairways* and *ramps* are prohibited except for the following:

1. Equipment and ductwork necessary for independent ventilation or pressurization.
2. *Fire protection systems.*
3. Security systems.
4. Two-way communication systems.
5. Electrical raceway for fire department communication systems.
6. Electrical raceway serving the *interior exit stairway* and *ramp* and terminating at a steel box not exceeding 16 square inches (0.010 m²).
7. Structural elements ~~supporting the interior exit stairway or ramp or enclosure~~, such as beams or joists.

Such penetrations shall be protected in accordance with Section 714. There shall not be penetrations or communication openings, whether protected or not, between adjacent interior exit *stairways* and *ramps*.

Exception: *Membrane penetrations* shall be permitted on the outside of the *interior exit stairway* and *ramp*. Such penetrations shall be protected in accordance with Section 714.4.2.

1024.6 Penetrations. Penetrations into or through an *exit passageway* are prohibited except for the following:

1. Equipment and ductwork necessary for independent ventilation or pressurization.
2. *Fire protection systems.*
3. Security systems.
4. Two-way communication systems.
5. Electrical raceway for fire department communication.
6. Electrical raceway serving the *exit passageway* and terminating at a steel box not exceeding 16 square inches (0.010 m²).
7. Structural elements such as beams and joists.

Such penetrations shall be protected in accordance with Section 714. There shall not be penetrations or communicating openings, whether protected or not, between adjacent exit passageways.

Exception: *Membrane penetrations* shall be permitted on the outside of the *exit passageway*. Such penetrations shall be protected in accordance with Section 714.4.2.

Reason Statement: Item 7 for structural element penetrations in interior exit stairways and ramps was added in the last code cycle with the intent of matching the allowance for structural element penetrations in shaft enclosures. The reason statement for this change (E98-18) stated that the proposed language is verbatim to that found in Section 713.8 for shaft enclosures. However, the wording was actually changed from "Structural elements, such as beams or joists" to "Structural elements supporting the *interior exit stairway* or *ramp* or enclosure, such as beams or joists". The effect of requiring the structural element to support the stairway, ramp or enclosure is that floor or landing beams and joists are allowed to penetrate stairway enclosures, but roof beams and joists are not. Since fire barriers that form the enclosure are required to continue to the underside of the roof deck or sheathing, it is necessary to include roof beams and joists as allowed penetrations since these are no more hazardous than the floor or landing penetrations. This proposal does this by simply removing the language that is different from the language in Section 713.8 for shaft enclosures. This proposal also adds this same Item 7 to the list of allowed penetrations in exit passageways. The intent of the code is that allowed penetrations are the same for interior exit stairways and ramps and exit passageways, since these are all protected exit elements.

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

This proposal will allow structural penetrations that currently not allowed, which will simplify framing at exit enclosures, thus reducing cost of construction.

E97-21

IBC: 1023.7, 1023.7.1 (New), 1023.7.2 (New) [IFC:[BE]1023.7, 1023.7.1 (New), 1023.7.2 (New)]

Proponents: Lee Kranz, representing Washington Association of Building Officials Technical Code Development Committee (lkranz@bellevuewa.gov); Micah Chappell, representing Washington Association of Building Officials (micah.chappell@seattle.gov)

2021 International Building Code

Revise as follows:

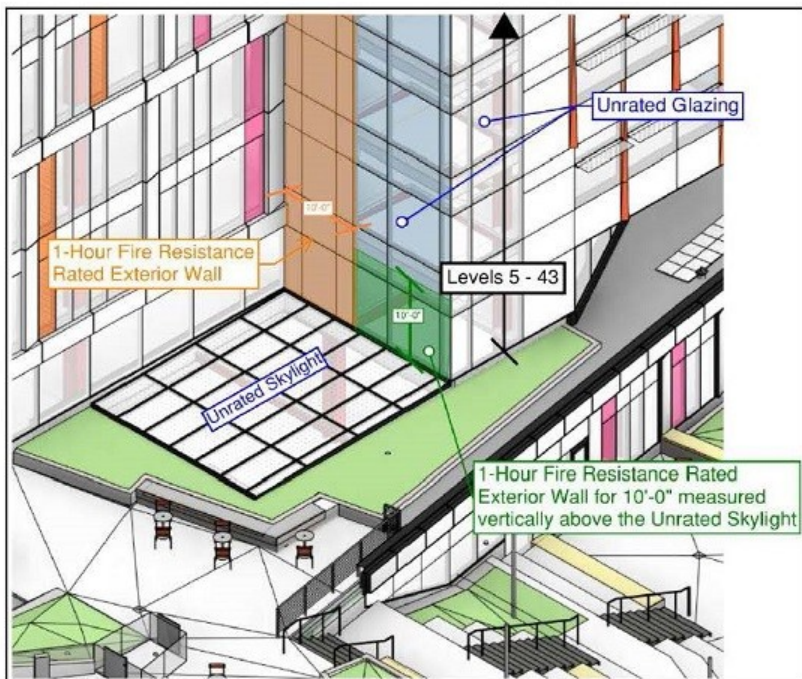
1023.7 Interior exit stairway and ramp exterior walls. *Exterior walls of the interior exit stairway or ramp shall comply with the requirements of Section 705 for exterior walls. Where nonrated walls or unprotected openings enclose the exterior of the stairway or ramps and the walls or openings are exposed by other parts of the building at an angle of less than 180 degrees (3.14 rad), building construction within 10 feet of the exterior walls of the interior exit stairway or ramp shall comply with Section 1023.7.1 and 1023.7.2, the building exterior walls within 10 feet (3048 mm) horizontally of a nonrated wall or unprotected opening shall have a fire-resistance rating of not less than 1 hour. Openings within such exterior walls shall be protected by opening protectives having a fire protection rating of not less than 3/4 hour. This construction shall extend vertically from the ground to a point 10 feet (3048 mm) above the topmost landing of the stairway or ramp, or to the roof line, whichever is lower.*

Add new text as follows:

1023.7.1 Building exterior walls. Building exterior walls within 10 feet (3048 mm) horizontally of a nonrated wall or unprotected opening in an exterior exit stairway or ramp shall have a fire-resistance rating of not less than 1 hour. Openings within such exterior walls shall be protected by opening protectives having a fire protection rating of not less than 3/4 hour. This construction shall extend vertically from the ground to a point 10 feet (3048 mm) above the topmost landing of the stairway or ramp, or to the roof line, whichever is lower.

1023.7.2 Roof assemblies. Where the interior exit stairway or ramp extends above a roof, the lower roof assembly shall have a fire resistance rating of not less than 1 hour and openings shall be protected by opening protectives having a fire protection rating of not less than 3/4 hour. The fire resistance rating and opening protection shall extend horizontally a minimum of 10 feet (3048 mm) from the exterior wall of the stairway or ramp, or to the perimeter of the lower roof, whichever is less.

Reason Statement: This code change is needed to address designs where nonrated exterior walls of an interior exit stairway or ramp are adjacent to nonrated roof assemblies which may also have unprotected openings within 10 feet of the exterior walls of the stairway or ramp. As you can see in the attached illustration, the unrated glazed exterior wall of the interior exit stairway is directly adjacent to an unprotected skylight in the roof of a lobby below. The designer agreed to protect the exterior wall of the stairway for 10 feet above the skylight but currently there is no language in the code to require it. This proposal provides more comprehensive protection for one of the most important egress elements in Chapter 10, interior exit stairways and ramps.



Cost Impact: The code change proposal will increase the cost of construction. The cost of construction will increase due to more roof assemblies and related openings needing to be of rated construction.

E98-21

IBC: 1024.3 (IFC:[BE]1024.3)

Proponents: Jeffrey S. Grove, P.E. FSFPE, Jensen Hughes, representing Jensen Hughes (jgrove@jensenhughes.com)

2021 International Building Code

Revise as follows:

1024.3 Construction. *Exit passageway*

enclosures shall have walls, floors and ceilings of not less than a 1-hour *fire-resistance rating*. ~~The fire-resistance rating of the exit passageway, where extending an exit enclosure from or between interior exit stairways or ramps, shall not be less than that required for the and not less than that required for any connecting interior exit stairway or ramp.~~ Exit passageways shall be constructed as *fire barriers* in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.

Reason Statement: It is clearly the intent of the Code that an exit passageway may be of minimum one-hour fire-resistance rating, regardless of the type of construction or number of stories in a building. The Code Commentary already states that "Where extending an enclosure for an exit stairway, the rating must not be less than the enclosure for the exit stairway so that the degree of protection is kept at the same level." This proposal is intended to clarify these code provisions. For example, a one-hour fire-resistance rated exit passageway could be utilized on the fifth story of a building. This passageway would then connect to a two-hour fire-resistance rated interior exit stairway or ramp. If a horizontal offset would be required for that interior exit stairway or ramp, the required exit passageway would be required to be two-hour fire-resistance rated.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This code change is a clarification that has no impact to the cost of construction.

E98-21

E99-21

IBC: 1026.2, 1026.2.1(New) [IFC:[BE]1026.2, 1026.2.1(New)]

Proponents: Jay Hyde, representing Sacramento Valley Association of Building Officials (jhyde@mogaveroarchitects.com)

2021 International Building Code

Revise as follows:

1026.2 Separation. The separation between buildings or refuge areas connected by a *horizontal exit* shall be provided by a *fire wall* complying with Section 706; or by a *fire barrier* complying with Section 707 or a *horizontal assembly* complying with Section 711, or both. The minimum *fire-resistance rating* of the separation shall be 2 hours. Opening protectives in *horizontal exits* shall also comply with Section 716. Duct and air transfer openings in a *fire wall* or *fire barrier* that serves as a *horizontal exit* shall also comply with Section 717. The *horizontal exit* separation shall extend vertically through all levels of the building unless floor assemblies have a *fire-resistance rating* of not less than 2 hours and do not have unprotected openings.

Exception: A *fire-resistance rating* is not required at *horizontal exits* between a building area and an above-grade *pedestrian walkway* constructed in accordance with Section 3104, provided that the distance between connected buildings is more than 20 feet (6096 mm).

~~*Horizontal exits* constructed as *fire barriers* shall be continuous from *exterior wall* to *exterior wall* so as to divide completely the floor served by the *horizontal exit*.~~

Add new text as follows:

1026.2.1 Horizontal continuity. Horizontal exits constructed as fire barriers or fire wall shall be continuous from exterior wall to exterior wall so as to divide completely the floor served by the horizontal exit.

Exceptions: Where refuge areas on both sides of the horizontal exit are served by an egress balcony, the wall serving as the horizontal exit is permitted to extend to the exterior wall between the refuge areas and the egress balcony in accordance with one of the following:

1. Where the horizontal exit is a fire barrier, such exterior wall, for a minimum of 4 feet (1220 mm) on both sides of the horizontal exit, is constructed as a fire barrier with a minimum fire resistance rating of 1 hour and a minimum opening protection of ¾ hour.
2. Where the horizontal exit is a fire wall, such exterior wall shall comply with Section 706.5. All opening in the rated portion of such exterior wall shall be protected openings.

Reason Statement: This brings the requirements for protection at a horizontal exit at an egress balcony into alignment with the protection requirements at an above grade pedestrian walkway. Inconsistent local interpretation: Building Officials have sometimes required the exit balcony be interrupted by an actual door with four feet of exterior wall on the open side of the exit balcony, others have not.

Cost Impact: The code change proposal will decrease the cost of construction
Clarifies that an actual door is not required on the egress balcony.

E99-21

E100-21

IBC: 1027.2 (IFC:[BE]1027.2)

Proponents: Lee Kranz, City of Bellevue, WA, representing Myself (lkranz@bellevuewa.gov)

2021 International Building Code

Revise as follows:

1027.2 Use in a means of egress. *Exterior exit stairways* shall not be used as an element of a required *means of egress* for Group I-2 occupancies. For occupancies in other than Group I-2, *exterior exit stairways* and *ramps* shall be permitted as an element of a required *means of egress* for buildings not exceeding six stories above grade plane ~~or that are not high-rise buildings~~.

Reason Statement: The current language in Section 1027.2 is confusing because the two test cases overlap. The first test to determine if an *exterior exit stairway* can be used as an element of a required means of egress applies to buildings not exceeding 6-stories above grade plane. The second test is that the building cannot be a high-rise. There is no clear direction if it is permissible to use an *exterior exit stairway* for a 7 or 8-story building that does not meet the definition of a high-rise building. Deleting the high-rise test, which is more liberal than the 6-story test, appears to be the best course of action.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This is a clarification only. It shouldn't impact the cost of construction.

E100-21

E101-21

IBC: 1027.5 (IFC[BE]1027.5)

Proponents: Daniel Nichols, representing Metropolitan Transportation Authority, Construction and Development (dnichols@mnr.org)

2021 International Building Code

Revise as follows:

1027.5 Location. *Exterior exit stairways and ramps* shall have a minimum *fire separation distance* of 10 feet (3048 mm) measured at right angles from the exterior edge of the *stairway or ramps*, including landings, to:

1. Adjacent *lot lines*.
2. Other portions of the building.
3. Other buildings on the same lot unless the adjacent building *exterior walls* and openings are protected in accordance with Section 705 based on *fire separation distance*.

For the purposes of this section, other portions of the building shall be treated as separate buildings.

Exception-Exceptions:

1. *Exterior exit stairways* and ramps serving individual dwelling units of Group R-3 shall have a minimum fire separation distance of 5 feet (1525 mm).
2. *Exterior exit stairways* are permitted to have a *fire separation distance* less than 10 feet (3050 mm) where serving a space with two or more exits.
3. *Exterior exit stairways* and ramps are permitted to have a *fire separation distance* less than 10 feet (3050 mm) where all of the following are met:
 - 3.1. The side closest to the line is protected by fire rated construction in accordance with Table 705.5.
 - 3.2. There are no openings within the fire rated construction.
 - 3.3. The exterior exit stairway or ramp terminates at grade with a minimum fire separation distance of 10 feet (3050 mm).

Reason Statement: Exterior exit stairways and ramps provide a safe exit path due to the separation requirements from the interior of the building to the stairway or ramp. The openness requirement of the exterior exit stairway or ramp provides a level of protection to occupants by providing a way to escape from smoke.

The exterior protection is provided to ensure that safe exiting is able to happen when a fire is occurring on an adjacent premises. The baseline is that the exterior exit stairway or ramp needs to be at least 10 feet away to provide adequate fire separation for use of the stairway or ramp.

This proposal provides to additional ways to ensure safe exiting can be achieved while an adjacent premises is on fire.

Exception #2- The first proposal is to allow exit stairways to be closer than 10 feet when there is another way out. This is proposed since the need to exit from a building due to an adjacent building fire should be done to another exit and, even though there is currently a 10 foot requirement, using such exit does not protect against smoke or radiant heat. Note that this is for stairways only and does not consider exterior exit ramps since that could conflict with the accessible means of egress provided for the space.

Exception #3- The second proposal is to allow for the installation of fire rated construction on the side closer than 10 feet. This proposal maintains the conductive thermal protection that would be provided in an interior exit stairway and requires the same stairway termination distance from the adjacent premises or building. The requirement of no openings is to ensure the intent of openness of an exterior stairway or ramp is provided by the other side of the stairway or ramp.

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

E101-21

E102-21

IBC: 1027.5 (IFC:[BE] 1027.5)

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

2021 International Building Code

Revise as follows:

1027.5 Location. *Exterior exit stairways and ramps* shall have a minimum *fire separation distance* of 10 feet (3048 mm) measured at right angles from the exterior edge of the *stairway* or *ramps*, including landings, to:

1. Adjacent *lot lines*.
2. Other portions of the building.
3. Other buildings on the same lot unless the adjacent building *exterior walls* and openings are protected in accordance with Section 705 based on *fire separation distance*.
4. The centerline of a street, an alley or public way

For the purposes of this section, other portions of the building shall be treated as separate buildings.

Exception: *Exterior exit stairways and ramps* serving individual *dwelling units* of Group R-3 shall have a minimum *fire separation distance* of 5 feet (1525 mm).

Reason Statement: An exterior exit stairway maybe less than 10 feet from the public sidewalk or street. Without New Exception 4, that will not be allowed.

Cost Impact: The code change proposal will decrease the cost of construction
This will allow the exterior stairs to be allowed next to public right of way with no restrictions.

E102-21

E103-21

IBC: 1028.2 (IFC:[BE]1028.2)

Proponents: Alex Mear, representing Code Consultants, Inc. (CCI) (alexm@codeconsultants.com)

2021 International Building Code

Revise as follows:

1028.2 Exit discharge. *Exits* shall discharge directly to the exterior of the building. The *exit discharge* shall be at grade or shall provide a direct path of egress travel to grade. The *exit discharge* shall not reenter a building. The combined use of Exceptions 1 and 2 shall not exceed 50 percent of the number and minimum width or required capacity of the required *exits*.

Exceptions:

1. Not more than 50 percent of the number and minimum width or required capacity of *interior exit stairways* and *ramps* is permitted to egress through areas, including *atriums*, on the level of discharge provided that all of the following conditions are met:
 - 1.1. Discharge of *interior exit stairways* and *ramps* shall be provided with a free and unobstructed path of travel to an exterior *exit* door and such *exit* is readily visible and identifiable from the point of termination of the enclosure.
 - 1.2. The entire area of the *level of exit discharge* is separated from areas below by construction conforming to the *fire-resistance rating* for the enclosure-, except vertical openings as permitted by Section 712.
 - 1.3. The egress path from the *interior exit stairway* and *ramp* on the *level of exit discharge* is protected throughout by an *approved automatic sprinkler system*. Portions of the *level of exit discharge* with access to the egress path shall be either equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, or separated from the egress path in accordance with the requirements for the enclosure of *interior exit stairways* or *ramps*.
 - 1.4. Where a required *interior exit stairway* or *ramp* and an *exit access stairway* or *ramp* serve the same floor level and terminate at the same *level of exit discharge*, the termination of the *exit access stairway* or *ramp* and the *exit discharge* door of the *interior exit stairway* or *ramp* shall be separated by a distance of not less than 30 feet (9144 mm) or not less than one-fourth the length of the maximum overall diagonal dimension of the building, whichever is less. The distance shall be measured in a straight line between the *exit discharge* door from the *interior exit stairway* or *ramp* and the last tread of the *exit access stairway* or termination of slope of the *exit access ramp*.
 2. Not more than 50 percent of the number and minimum width or required capacity of the *interior exit stairways* and *ramps* is permitted to egress through a vestibule provided that all of the following conditions are met:
 - 2.1. The entire area of the vestibule is separated from areas below by construction conforming to the *fire-resistance rating* of the *interior exit stairway* or *ramp enclosure*-, except vertical openings as permitted by Section 712.
 - 2.2. The depth from the exterior of the building is not greater than 10 feet (3048 mm) and the length is not greater than 30 feet (9144 mm).
 - 2.3. The area is separated from the remainder of the *level of exit discharge* by a *fire partition* constructed in accordance with Section 708.
- Exception:** The maximum transmitted temperature rise is not required.
- 2.4. The area is used only for *means of egress* and *exits* directly to the outside.
3. *Horizontal exits* complying with Section 1026 shall not be required to discharge directly to the exterior of the building.

Reason Statement: Applying Exception 1 or Exception 2 to 1028.2 permits an exit to discharge through areas on the level of discharge in lieu of discharging directly to the exterior. The stipulations outlined in Exception 1.1 through 1.4 and Exception 2.1 through 2.3 do not preclude the use of an unprotected vertical opening within the same area on the level of exit discharge. This includes an unprotected vertical opening that connects to the level immediately below the level of exit discharge.

The current language is ambiguous when considering the text in Exception 1.2 and Exception 2.1 that states that “The entire area of the level of exit discharge is separated from areas below by construction conforming to the fire-resistance rating for the enclosure.” This could be interpreted to require all floor openings between the level of exit discharge and the level below the level of exit discharge to be enclosed in fire-resistance rated construction equal to that of the enclosure.

Exception 1.2 and Exception 2.1 intends for the floor construction to have the same fire-resistance rating as the enclosure. The IBC Commentary confirms this intent.

Adding the reference to Section 712 Vertical Openings helps clarify that an exit can be designed according to 1028.2 Exception 1 or Exception 2 and removes the ambiguity. The same area can be connected to the level below by an opening designed in accordance with Section 712.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This code change proposal clarifies the code intent and does not impact the cost of construction.

E103-21

E104-21

IBC: 1028.2 (IFC:[BE]1028.2)

Proponents: Jeffrey S. Grove, P.E. FSFPE, Jensen Hughes, representing Jensen Hughes (jgrove@jensenhughes.com)

2021 International Building Code

Revise as follows:

1028.2 Exit discharge. *Exits* shall discharge directly to the exterior of the building. The *exit discharge* shall be at grade or shall provide a direct path of egress travel to grade. The *exit discharge* shall not reenter a building. The combined use of Exceptions 1 and 2 shall not exceed 50 percent of the number and minimum width or required capacity of the required *exits*.

Exceptions:

1. Not more than 50 percent of the number and minimum width or required capacity of *interior exit stairways* and *ramps* is permitted to egress through areas, including *atriums*, on the level of discharge provided that all of the following conditions are met:
 - 1.1. Discharge of *interior exit stairways* and *ramps* shall be provided with a free and unobstructed path of travel to an exterior *exit* door and such *exit* is readily visible and identifiable from the point of termination of the enclosure.
 - 1.2. The entire area of the *level of exit discharge* is separated from areas below by construction conforming to the *fire-resistance rating* for the enclosure.
 - 1.3. The egress path from the *interior exit stairway* and *ramp* on the *level of exit discharge* is protected throughout by an *approved automatic sprinkler system*. Portions of the *level of exit discharge* with access to the egress path shall be either equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, or separated from the egress path in accordance with the requirements for the enclosure of *interior exit stairways* or *ramps*.
 - 1.4. Where a required *interior exit stairway* or *ramp* and an *exit access stairway* or *ramp* serve the same floor level and terminate at the same *level of exit discharge*, the termination of the *exit access stairway* or *ramp* and the *exit discharge* door of the *interior exit stairway* or *ramp* shall be separated by a distance of not less than 30 feet (9144 mm) or not less than one-fourth the length of the maximum overall diagonal dimension of the building, whichever is less. The distance shall be measured in a straight line between the *exit discharge* door from the *interior exit stairway* or *ramp* and the last tread of the *exit access stairway* or termination of slope of the *exit access ramp*.
 2. Not more than 50 percent of the number and minimum width or required capacity of the *interior exit stairways* and *ramps* is permitted to egress through a vestibule provided that all of the following conditions are met:
 - 2.1. The entire area of the vestibule is separated from areas below by construction conforming to the *fire-resistance rating* of the *interior exit stairway* or *ramp enclosure*.
 - 2.2. The depth from the exterior of the building is not greater than 10 feet (3048 mm) and the length is not greater than 30 feet (9144 mm).
 - 2.3. The area is separated from the remainder of the *level of exit discharge* by a *fire partition* constructed in accordance with Section 708.
- Exception:** The maximum transmitted temperature rise is not required.
- 2.4. The area is used only for *means of egress* and *exits* directly to the outside.
3. *Horizontal exits* complying with Section 1026 shall not be required to discharge directly to the exterior of the building.
4. Exit discharge onto the roof of the same building or an adjoining building is permitted when all of the following criteria are met:
 - 4.1 The roof assembly has the same fire resistance rating required for the exit enclosure.
 - 4.2 A continuous path of egress travel is provided to a public way.

Reason Statement: The code addresses exit discharge that is adjacent to building areas, in which case one hour rated separation of the exit discharge may be required (see 1028.4). This code change proposal extends that concept to exit discharge that is above other building areas. It is not unusual for buildings in urban areas to have below-grade parking garages that have a larger footprint than the above-grade portions of the building. Having an exit discharge onto the below-grade "roof" would be prohibited by 1028.1 because the roof of the parking garage is not "grade". This exception would permit exit discharge onto the roof of the below-grade parking garage provided that the roof has the same fire resistance rating

as the exit.

The NFPA Life Safety Code has a similar provision in section 7.7.6.

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

This code change proposal would reduce the cost of construction because it would allow greater flexibility in building design. Thus, land could be used more efficiently.

E104-21

E105-21

IBC: 1029.3 (IFC:[BE]1029.3)

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:

1029.3 Construction and openings. Where an *egress court* serving a building or portion thereof is less than 10 feet (3048 mm) in width, the *egress court* walls shall have not less than 1-hour *fire-resistance-rated* construction for a distance of 10 feet (3048 mm) above the floor of the *egress court*. Openings within such walls shall be protected by opening protectives having a *fire protection rating* of not less than $\frac{3}{4}$ hour.

Exceptions:

1. *Egress courts* serving an *occupant load* of less than 10.
2. *Egress courts* serving Group R-3.
3. *Egress courts*, located at *grade*, which provide direct and unobstructed access to a *public way* through two or more independent paths. The required width or capacity shall be maintained along each path.

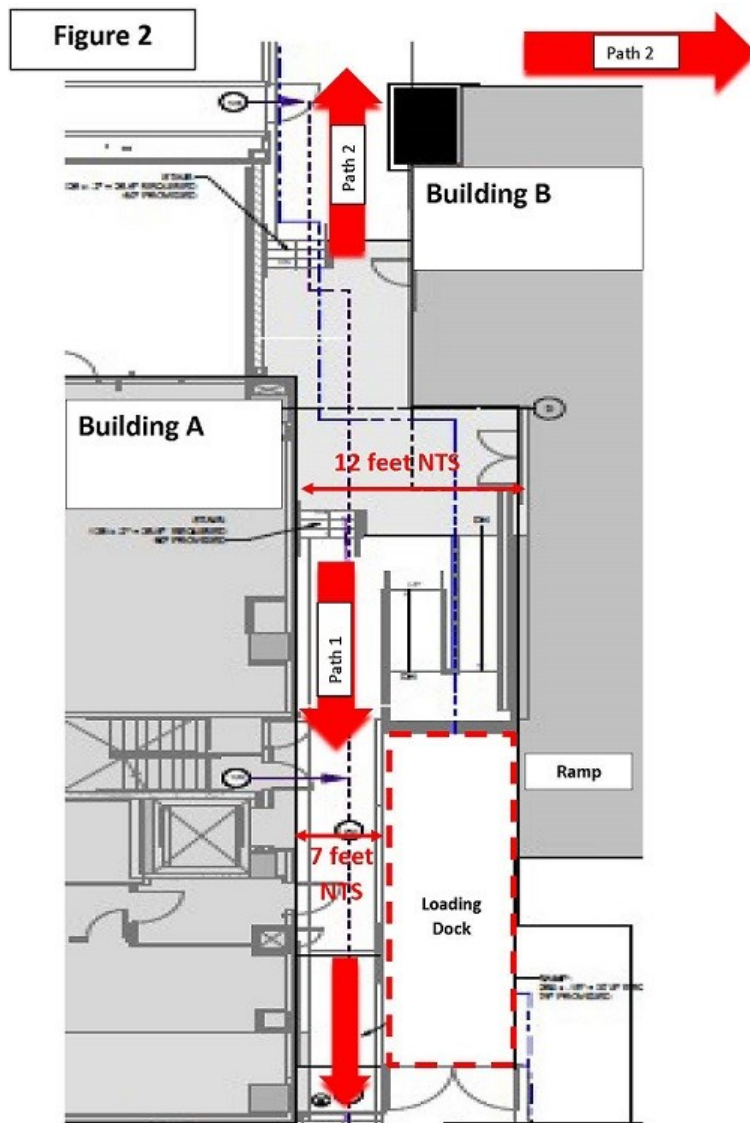
Reason Statement: The proposed code change adds an exception to allow omission of opening protection from openings in walls adjacent to egress courts where occupants have access to the public way through two different paths, in other words from a yard designed to comply as an exit court that has two outlets. This will reduce the cost of construction and will allow design flexibility.

- Protection will not be diminished since the exterior walls for almost all buildings located at an FSD less than 10 feet will have a fire resistance of at least 1-hour and exterior wall openings will be restricted to 25% of the area of the wall (10% if not fire sprinklers).
- Additionally most buildings are protected with fire sprinkler systems and the IBC does account this additional level of protection.

This Code change recognizes the benefit of the egress path within an exit court being located far enough away from the building requiring the egress court. So by providing multiple paths occupants do not have to select the path that may have been compromised by fire in the building from which they accessed the egress court.

- The 2018 IBC commentary explains that an egress court, which is a portion of the exit discharge, is "A portion of the exit discharge that is partially confined by exterior walls or other elements that confine the discharge path to a single narrow route ..." This code change recognizes the benefits of multiple paths.
- The 2018 IBC Commentary on page 10-186 also includes a clarification that "The purpose of this section is to protect the occupants served by the egress court from the building that they are exiting. If occupants must walk closely by the exterior walls of the court, the walls are required to have the specified fire-resistance rating and the openings are required to be protected as specified." The proposed exception recognizes the benefits of two outlets from an exit court that does not require occupants to walk along a particular path.
- The 2018 IBC Commentary also explains that "An exit discharge component could be a large exterior open space where occupants could discharge in a number of different directions or it could be limited to a narrower path by landscaping or walls (i.e., egress court). In all cases, the space must be open enough to the outside that smoke and fumes will vent upward and away from occupants evacuating the building." The proposed exception allows the egress court with multiple outlets to be have like a a surface parking lot in front of the building

In closing, if occupants have choices of paths it is reasonable to assume that one of the alternative paths will be available and provide safe access to the public way and therefore protection of the exit court is not required. See figure 2 attached for an illustration of this concept. We request that the Means of Egress Committee approve this sensible code change.



Cost Impact: The code change proposal will decrease the cost of construction. The proposed code change will reduce the need to add opening protectives at doors and windows along egress courts.

E106-21

IBC: 1029.3 (IFC:[BE]1029.3)

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:

1029.3 Construction and openings. Where an *egress court* serving a building or portion thereof is less than 10 feet (3048 mm) in width, the *egress court* walls shall have not less than 1-hour *fire-resistance-rated* construction for a distance of 10 feet (3048 mm) above the floor of the *egress court*. Openings within such walls shall be protected by opening protectives having a *fire protection rating* of not less than $\frac{3}{4}$ hour.

Exceptions:

1. *Egress courts* serving an *occupant load* of less than 10.
2. *Egress courts* serving Group R-3.
3. When the required path of travel is located more than 5 feet (1524 mm) from the walls of the *egress court*.

Reason Statement: The proposed code change adds an exception to allow omission of opening protection from openings in egress courts where occupants can travel a distance of 5 feet or more from a building requiring the egress court. This will reduce the cost of construction and will allow flexibility. Protection will not be diminished since the exterior walls for almost all buildings located at an FSD less than 10 feet will have a fire resistance of 1- hour and exterior wall openings will be restricted to 25% of the area of the wall (10% if not fire sprinklers). Additionally, most buildings are protected with fire sprinkler systems and the IBC does not account for this additional level of protection even though the presence of sprinklers is permitted as trade off for fire resistance in corridors and to permit exit discharge to be located interior to the building. This Code change recognizes the benefit of the egress path within an exit court being located far enough away from the building requiring the egress court. Conversely it lets the code user understand that even though the IBC does not require the egress court to have a clear width of 10 feet, it does want occupants protected if the provided egress path forces occupants in the exit court to travel closer to the building than they left.

- The 2018 IBC commentary explains that an egress court, which is a portion of the exit discharge, is "A portion of the exit discharge that is partially confined by exterior walls or other elements that confine the discharge path to a single narrow route ..."
- The 2018 IBC Commentary on page 10-186 also includes a clarification that "The purpose of this section is to protect the occupants served by the egress court from the building that they are exiting. If occupants must walk closely by the exterior walls of the court, the walls are required to have the specified fire-resistance rating and the openings are required to be protected as specified." This issue is not commonly known.
- The 2018 IBC Commentary also explains that "An exit discharge component could be a large exterior open space where occupants could discharge in a number of different directions or it could be limited to a narrower path by landscaping or walls (i.e., egress court). In all cases, the space must be open enough to the outside that smoke and fumes will vent upward and away from occupants evacuating the building." So the egress court protection rules provide for the 10 ft width based on this intent which is to allow occupants maneuvering flexibility within the egress court to move away from fire hazards as they traverse the egress court from exits to a public way.

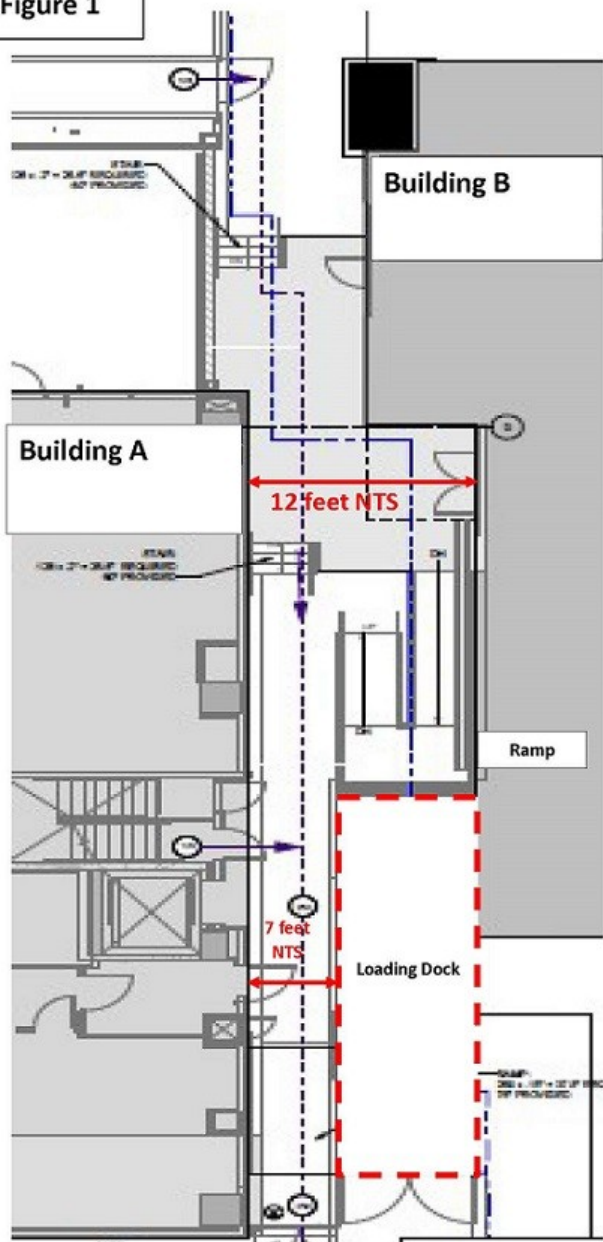
Egress court protection is required when the width is reduced to less than 10 feet. The required clear exit width and capacity must still be provided and are usually less than 5 ft. Exterior wall and opening protection is required when the egress court is less than 10 ft wide.

- The egress court width reduction may be due to two adjoining buildings or due to an obstruction such as a fence or a wall or a continuous outdoor architectural feature that directs occupants closer to the building from which egress to the public way is sought. It is not unusual for egress court widths to be interrupted with stairways, ramps and architectural features such as raised planters and benches that can force the path of travel closer to exterior wall openings that are not protected.
- Lot lines are considered a width obstruction that can reduce the egress court width to less than 10 feet. And while buildings on adjacent lots will comply with Ch 7 exterior wall and opening protection rules based on fire separation distance, the adjoining property owner can install a fence or other barrier to delimitate his/her property and thus cause a width reduction.
- Some have argued that the protection is only required from the building utilizing the court/yard as an egress court to access the public way, so when flanked by two separate buildings it can be argued that both buildings do not evacuate simultaneously and that protection is only provided for the building requiring the egress court.
- It is also worth noting that separation of exits can be reduced in the exit discharge and as a consequence a one way egress court may serve all of the exits in a building.
- Based on Table 705.5 and with the exception of Group R-3 and U buildings of most types of construction and occupancies with include 1-hour exterior walls at a FSD less than 10 feet, and up to 25% of the wall with unprotected openings when the building is protected with fire sprinklers.

Figure 1 highlights a case where two Type IA fully sprinklered buildings share a common exit court that has a loading dock, stairs and a ramp that

direct occupants from both buildings to walk along the walls of building A. The space between the buildings is 12 feet however the walkway is located within a 7 ft wide portion of it. The IBC intends that this egress court be protected for the benefit of occupants in Building A and B. Without the addition of the exception code users will assume that the exterior wall and openings on building A do not require protection.

Figure 1



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

The proposed code change will reduce the need to add opening protection for windows and doors located along egress courts.

E106-21

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 I

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 II

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.

E107-21 Part III

E108-21

IBC: 1030.8 (IFC:[BE]1030.8)

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:

1030.8 Common path of egress travel. The *common path of egress travel for a room or space used for assembly purposes having fixed seating* 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).

Staff note: This proposal's revision to Section 1030.8 addresses requirements in a different or contradicting manner to those found in Code Change E14-21 to Table 1006.2.1 footnote c. The committee is urged to make their intentions clear with their actions on these proposals.

Reason Statement: Footnote c of Table 1006.2.1 states "For a room or space used for assembly purposes having fixed seating, see Section 1030.8". Therefore, the shorter common path of travel in Section 1030.8 does not apply to areas that do not have fixed seating. The common path of travel in the table applies to those uses. However, the existing language in Section 1030.8 is written in such a way that it would apply to all assembly uses as outlined in Section 1030.1. This proposal eliminate the conflict between the two sections and clarifies the intent of the provisions.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This proposal is designed to eliminate a conflict in the code and clarify the language.

E108-21

E109-21

IBC: 1030.9.5(IFC:[BE]1030.9.5)

Proponents: William Conner, representing American Society of Theatre Consultants (bill@bcaworld.com)

2021 International Building Code

Revise as follows:

1030.9.5 Dead-end aisles. Each end of an *aisle* shall be continuous to a cross *aisle*, foyer, doorway, vomitory, concourse or *stairway* in accordance with Section 1030.9.7 having access to an *exit*.

Exceptions:

1. Dead-end *aisles* shall be not greater than 20 feet (6096 mm) in length.
2. Dead-end *aisles* longer than ~~16 rows~~ 20 feet (6096 mm) are permitted where seats beyond the ~~16th row~~ 20 feet (6096 mm) dead-end *aisle* are not more than 24 seats from another *aisle*, measured along a row of seats having a minimum clear width of 12 inches (305 mm) plus 0.6 inch (15.2 mm) for each additional seat above seven in the row where seats have backrests or beyond 10 where seats are without backrests in the row.
3. For *smoke-protected* or *open-air assembly seating*, the dead-end *aisle* length of vertical *aisles* shall not exceed a distance of 21 rows.
4. For *smoke-protected* or *open-air assembly seating*, a longer dead-end *aisle* is permitted where seats beyond the 21-row dead-end *aisle* are not more than 40 seats from another *aisle*, measured along a row of seats having an *aisle* accessway with a minimum clear width of 12 inches (305 mm) plus 0.3 inch (7.6 mm) for each additional seat above seven in the row where seats have backrests or beyond 10 where seats are without backrests in the row.

Reason Statement: Currently, dead end aisles are permitted to be 20' or less; or 16 rows or more. (In an auditorium 20 feet is typically 5 or 6 rows; 16 rows is typically 50 to 60 feet.) This change is to permit more than 5 or 6 rows and fewer than 16 or more rows to be served by a dead end aisle; and delete the overly permissive 16 or more without increasing the width of aisle and aisle accessways. This is consistent with 1029.8 common path of travel requirements. (Editorially it would seem better code if instead of repeating the increase in widths here, it simply referenced a modified 1029.8 instead of repeating similar but not equal requirements.)

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This should not change the typical assembly seating layouts. This is a more specific requirement.

E109-21

E110-21

IBC: 1030.9.5 (IFC:[BE]1030.9.5)

Proponents: William Conner, representing American Society of Theatre Consultants (bill@bcaworld.com)

2021 International Building Code

Revise as follows:

1030.9.5 Dead-end aisles. Each end of an *aisle* shall be continuous to a cross *aisle*, foyer, doorway, vomitory, concourse or *stairway* in accordance with Section 1030.9.7 having access to an *exit*.

Exceptions:

1. Dead-end *aisles* shall be not greater than 20 feet (6096 mm) in length.
2. Dead-end *aisles* longer than 16 rows are permitted where seats beyond the 16th row dead-end *aisle* are not more than 24 seats from another *aisle*, measured along a row of seats having a minimum clear width of 12 inches (305 mm) plus 0.6 inch (15.2 mm) for each additional seat above seven in the row where seats have backrests or beyond 10 where seats are without backrests in the row.
3. Dead-end aisles serving fewer than 50 seats shall be permitted in accordance with Section 1030.8.
- 3.4. For *smoke-protected* or *open-air assembly seating*, the dead-end *aisle* length of vertical *aisles* shall not exceed a distance of 21 rows.
- 4.5. For *smoke-protected* or *open-air assembly seating*, a longer dead-end *aisle* is permitted where seats beyond the 21-row dead-end *aisle* are not more than 40 seats from another *aisle*, measured along a row of seats having an *aisle* accessway with a minimum clear width of 12 inches (305 mm) plus 0.3 inch (7.6 mm) for each additional seat above seven in the row where seats have backrests or beyond 10 where seats are without backrests in the row.

Reason Statement: This added exception permits a low number of seats to be served by a longer dead end aisle as has been the case and is consistent with 1030.8 common path of travel for fewer than 50 and general egress requirements.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This will increase options in theater layouts.

E110-21

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

E111-21

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:

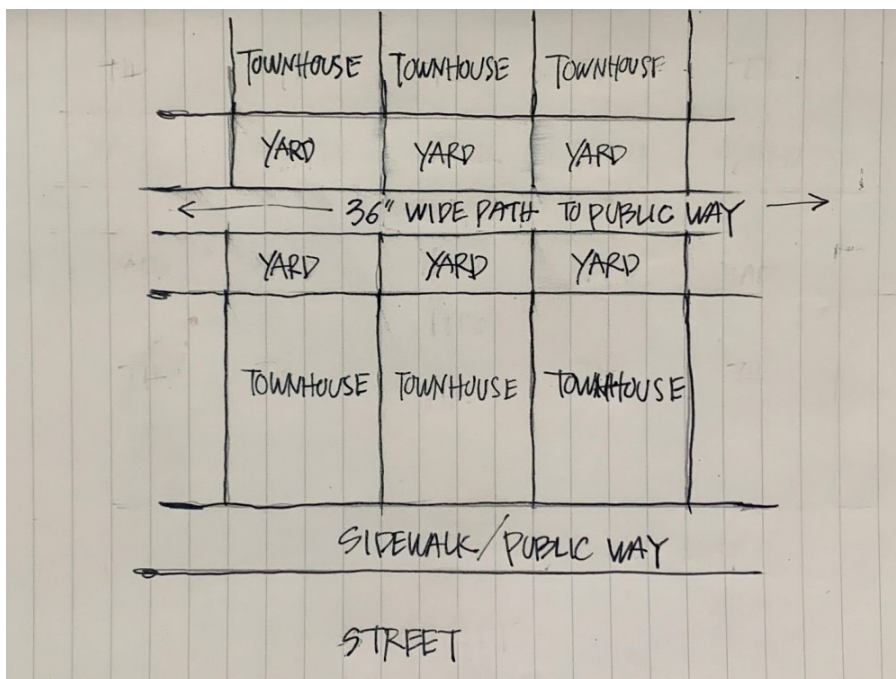
1. *Basements* with a ceiling height of less than 80 inches (2032 mm) shall not be required to have *emergency escape and rescue openings*.
2. *Emergency escape and rescue openings* are not required from *basements* or sleeping rooms that have an *exit* door or *exit access* door that opens directly 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.



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 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.

E112-21

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 1031.5 ~~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 R310.3.1031.4 - 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 no changes to construction requirements. These are clarifications only.

E113-21

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.

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 for the application of the accessibility requirements for small hotels, not a change in requirement.

E114-21

E115-21

IBC: 1104.5

Proponents: Marsha Mazz, representing United Spinal Association (mmazz@accessibility-services.com)

2021 International Building Code

Revise as follows:

1104.5 Location. *Accessible routes* shall comply with all of the following:

1. Accessible routes shall coincide with or be located in the same area as a general circulation path.
2. Where the general circulation path is interior to the building, the accessible route shall also be interior to the building.
3. Where only one accessible route is provided, the accessible route shall not pass through kitchens, storage rooms, restrooms, closets or similar spaces.

Exceptions:

1. *Accessible routes* from parking garages contained within and serving *Type B units* are not required to be interior.
2. A single *accessible route* is permitted to pass through a kitchen or storage room in an *Accessible unit*, *Type A unit* or *Type B unit*.

Reason Statement: This proposal is intended to clarify two things: (1) that the first and second requirements are not interrelated to the extent that complying with one satisfies the other, and (2) that the word "interior" means "interior to the building". Some readers conflate these two requirements and wrongly conclude that locating the accessible route inside the building satisfies requirement #1 to co-locate the accessible route and the general circulation path in the "same general area". The second requirement is intended to prevent the situation where a building by Section 1104.4 to provide vertical access between stories provides an interior stair between stories for people without disabilities and an exterior accessible route connecting two stories for people with disabilities.

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

E115-21

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.

E116-21

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.

E117-21

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.

E118-21

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.

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 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.

E119-21

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.

E120-21

E121-21

IBC: 1106.3, 1106.3.1 (New)

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

2021 International Building Code

Revise as follows:

1106.3 Groups I-1, R-1, R-2, R-3 and R-4. Accessible parking spaces shall be provided in Group I-1, R-1, R-2, R-3 and R-4 occupancies in accordance with the greatest number of parking spaces of any of the following items 1 through 4 as applicable.

1. In Group R-2, R-3 and R-4 occupancies that are required to have Accessible, Type A or *Type B dwelling units or sleeping units*, at least 2 percent, but not less than one, of each type of parking space provided shall be accessible.
2. In Group I-1 and R-1 occupancies, accessible parking shall be provided in accordance with Table 1106.2.
3. Where at least one parking space is provided for each *dwelling unit or sleeping unit*, at least one *accessible* parking space shall be provided for each *Accessible* and *Type A unit*.
4. ~~Where parking is provided within or beneath a building, accessible parking spaces shall be provided within or beneath the building.~~

Add new text as follows:

1106.3.1 Parking beneath a building. Where parking is provided within or beneath a building, accessible parking spaces shall be provided within or beneath the building.

Staff Note: E121-21, E122-21 and E123-21 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: To clarify that the required number of parking spaces should result in the greatest number based on the conditions noted. A similar code change was presented as a public comment to E117-18. This proposed language addresses the concerns the committee had with regards to the placement of the clarification language.

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

Whether or not the code change proposal will increase or decrease the cost of construction depends upon how jurisdictions have been interpreting item 3 of section 1106.3. If jurisdictions have been interpreting that accessible parking spaces required by item 1 of section 1106.3 do not include the accessible parking spaces required by item 3 of section 1106.3 (which must be also be additionally provided), this will not increase construction costs. The reason for this is that the jurisdiction's interpretation of items 1 and 3 of section 1106.3 is consistent with the code change proposal, that reflects the intent of the code. If jurisdictions have been interpreting that accessible parking spaces required by item 1 of section 1106.3 include the accessible parking spaces required by item 3 of section 1106.3, this will increase construction costs. The reason for this is that the jurisdiction's interpretation of items 1 and 3 of section 1106 3 is not consistent with the code change proposal and additional accessible parking spaces and their accompanying accessible access aisles and accessible routes will be required.

E121-21

E122-21

IBC: 1106.3, 1106.3.1 (New)

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

2021 International Building Code

Revise as follows:

1106.3 Groups ~~I-1, R-1, R-2, R-3 and R-4.~~ Accessible parking spaces shall be provided in Group ~~I-1, R-1, R-2, R-3 and R-4~~ occupancies in accordance with Items 1 through 4 or 2, as applicable, whichever requires the greater number of accessible parking spaces. In addition, other parking facilities shall comply with Section 1106.3.1.

1. In Group ~~R-2, R-3 and R-4~~ occupancies, facilities that are required to have Accessible, Type A or *Type B dwelling units or sleeping units*, at least 2 percent, but not less than one, of each type of parking space serving the residents of the dwelling units or sleeping units provided shall be accessible.
2. ~~In Group I-1 and R-1 occupancies, accessible parking shall be provided in accordance with Table 1106.2.~~
32. Where at least one parking space is provided for each *dwelling unit or sleeping unit*, at least one *accessible* parking space shall be provided for each *Accessible and Type A unit*.
4. ~~Where parking is provided within or beneath a building, accessible parking spaces shall be provided within or beneath the building.~~

Add new text as follows:

1106.3.1 Other parking facilities. Where parking is provided for non-residents, or dedicated to residential common-use facilities, amenity facilities or recreational facilities, accessible parking shall be provided for these areas in accordance with Table 1106.2.

Staff Note: E121-21, E122-21 and E123-21 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 clarify the parking required for Groups I-1, R-1, R-2, R-3 and R-4. The current text is not clear on if the items 1 through 4 are additive or not. Last cycle E117-18 tried to say these were additive and the committee responded with:

E117-18 Committee Action: Disapproved

Committee Reason: *While this item does need to be clarified, this is not the right direction to go for this calculation. The proposed language for Item 3 is effectively doubling up requirements for parking for Groups I-1 and R. The intent is to comply with the most restrictive of the 2010 ADA and the Fair Housing requirements, so this calculation should be the opposite of what is indicated. (Vote 14-0)*

The language is not clear as to whether item #3 is additive to that in items #1 and #2 or if it is a specific condition that needs to be addressed or something entirely different. It has been interpreted in various ways and created great confusion as to how it should be applied. Specifically, item #3 is not clearly delineated as to whether it is an additive calculation to the other items or if it is a supplemental calculation and can stand on its own. From what research can be found, it was never the intent that this item apply to all the listed occupancies or that it should be additive.

The existing text was the result of code change E183-12. The commenter's reason statement was:

"The intent of this public comment is to clarify and coordinate parking requirements for what may be considered residential occupancies under Fair Housing and ADA. The additional language in the base paragraph is to editorial to clarify requirements.

"Item 1 - The proposed comment reintroduces the basic requirement that for Group R-2 and R-3 (and R-4 per Section 310.6) when parking is made available at least 2%, but no less than one, space must meet the accessible requirements. See also E218-12 for signage requirements. These spaces are not required to be signed as accessible providing the space is provided.

"Item 2 – This is added as coordination with item 3. If this section will include where Accessible units are required, then accessible parking for R-1 and I-1 must be clear.

"Item 3 - This comment also address [sic] the change in the ADA which requires a one-to-one ratio when parking is provided for each dwelling unit, an accessible parking space is required for each dwelling unit that is an Accessible or Type A dwelling Unit.

"Item 4 – This is existing text."

So it's clear that the intent was to align the IBC language with the requirements in the 2010 ADA Standards for Accessible Design (2010 Standards). Keeping that in mind the proposal reorganizes the items and makes them separate subsections which also allows hierarchy to be incorporated into the application of the code requirement. Rather than have a list of four things with little direction on how each is to be applied, the proposal separates the items into specific sections.

Changes:

1106.3 - Reference to Groups I-1 and R-1 are extraneous since item #2 in the list says to use the table and makes no additional reference to those use groups. It is not necessary to include those in this listing only to say "never mind" later in the section. The revised text regarding the use of the items in the list makes it clear that these are not additive but that the greater number calculated must be used. As stated in prior proposals here, the 2 percent parking spaces number is consistent with Fair Housing Act (FHA) requirements. This calculation method is applicable regardless of the number of parking spaces provided. The added sentence includes a reference to a new section added to provide additional clarity in the application of this section. That will be discussed later.

Item 1 - The group reference is deleted since the scope of this section is now limited to only those groups. It is not necessary to repeat that. The added text makes it clear that the calculation is based on the number of parking spaces which are for the residents. This ties in with the added section 1106.3.1.

Item 2 - This is not necessary. As stated previously, the scope of this section no longer includes Group I-1 and R-1 so this is redundant. I-1 and R-1 must use the table.

Item 3 - This becomes the new Item #2. It is important to note that this comes into play where parking spaces are equal to or greater than the number of dwelling units or sleeping units which will be the case most of the time. However, in urban areas or where waivers are allowed, the number of parking spaces provided could be less than the number of dwelling units or sleeping units. For example, the IZC requires 2 parking spaces for every dwelling unit. Because the number of Type A units is 2 percent, using this method will be consistent with that in Item #1.

Item #4 - This is proposed to be deleted since it is already addressed in the second sentence to Section 1106.2 where it states that "Where more than one parking facility is provided on a site, the number of parking spaces required to be accessible shall be calculated separately for each parking facility." Also the text in Item #1 requires parking "of each type" so covered parking and open parking, being two different types are already addressed.

1106.3.1 - This new text clarifies the situation where parking is provided for other functions. There may be guest parking, leasing office parking or, in mixed use facilities, there may be retail parking or office parking as well. This indicates that those parking areas must be calculated separately and use the table to determine the number of accessible parking spaces for each of these "other" parking facilities.

Bibliography: Prior code change monographs and results.

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

The rewritten section is intended to clarify the manner in which the accessible parking is calculated for specific residential occupancies. It is not intended to alter than current means - only clarify them.

E123-21

IBC: 1106.3

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:

1106.3 Groups I-1, R-1, R-2, R-3 and R-4. *Accessible* parking spaces shall be provided in Group I-1, R-1, R-2, R-3 and R-4 occupancies in accordance with Items 1 through 4 as applicable.

1. In Group R-2, R-3 and R-4 occupancies that are required to have Accessible, Type A or *Type B dwelling units or sleeping units*, at least 2 percent, but not less than one, of each type of parking space provided shall be accessible.
2. In Group I-1 and R-1 occupancies, accessible parking shall be provided in accordance with Table 1106.2.
3. ~~Where at least one parking space is provided for each dwelling unit or sleeping unit, at least one accessible parking space shall be provided for each Accessible and Type A unit.~~
- 3.4. Where parking is provided within or beneath a building, *accessible* parking spaces shall be provided within or beneath the building.

Staff Note: E121-21, E122-21 and E123-21 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: There has been some confusion on the number of accessible parking spaces required for residential occupancies. There are two conditions where accessible parking is required for Group R and I occupancies. The first is in Item 1 and it requires 2% of the parking spaces to be accessible or Item 2 where the number of spaces is based on Table 1106.1. Item 3 then requires that if a parking space is provided for each unit, an accessible space is then required to be provided for every accessible unit or Type A unit in the project. The confusion is whether the parking in item 3 is in addition to those spaces required in Item 1. E117-18 that said these sections were additive, but was disapproved. Item 1 and 2 should address the parking required by FHA and ADA.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This language is intended to clarify the existing requirements for accessible parking.

E123-21

E124-21

IBC: 1107.2

Proponents: Michael Gentile, PCNA Consulting Group, Inc., representing PCNA Consulting Group, Inc. (michael@pcnagroup.com)

2021 International Building Code

Revise as follows:

1107.2 Electrical vehicle charging stations. Electrical vehicle charging stations shall comply with Sections 1107.2.1 and 1107.2.2.

Exception: Electrical vehicle charging stations provided to serve Group ~~R-2~~, R-3 and R-4 occupancies are not required to comply with this section.

Reason Statement: Most of the newly constructed Group R-2 occupancy projects are being designed to include Electric Vehicle Charging Stations for use by residents. As such, by incorporating Group R-2 occupancies into the design requirements of Section 1107.2, the residents are guaranteed to be provided with at least one of them to be accessible. At present, they are not. Additionally, the inclusion of these design requirements provides consistency in the design of these features on mixed use projects. At present, if a building has mixed use occupancies (which is quite common in larger and/or high-rise development projects), a designer could arbitrarily designate that 100% of the Electric Vehicle Charging Stations are meant to "serve" the Group R-2 occupants, but not the Group B occupants. This would mean that NONE of the EVCS spaces on a site (or within a parking garage) would be required to incorporate accessibility features. Under current code language, there is no way to determine how these spaces are allocated by occupancy group. Ergo, it is a loophole on mixed-use projects that include an Group R-2 occupancy. Conversely, the concern for Group R-3 or R-4 occupancies is not as relevant, since these groups are significantly less likely to occur within mixed-use buildings.

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

For Group R-2 occupancies only, the cost is the addition of van-accessible signage to 5% of the total number of Electric Vehicle Charging Stations that are designated to serve the Group R-2 occupancies.

E124-21

E125-21

IBC: 1107.2

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); Matthew Hays, CCI, representing CCI (mattl@codeconsultants.com)

2021 International Building Code

Revise as follows:

1107.2 Electrical vehicle charging stations. Electrical vehicle charging stations shall comply with Sections 1107.2.1 and 1107.2.2.

~~Exception~~ Exceptions:

1. Electrical vehicle charging stations provided to serve Group R-2, R-3 and R-4 occupancies are not required to comply with this section.
2. Electric vehicle charging stations used exclusively by buses, trucks, other delivery vehicles, law enforcement vehicles, and motor pools are not required to comply with this section.

Reason Statement: This exception is modeled after Section 1106.2 Exception exempting the same types of parking facilities from the requirement to provide accessible parking space. Vehicle impound parking has not been included in the list because we think it doubtful that the towing company will be so kind as to charge your car while it is in their care. If the committee wants to add EV charging located at vehicle impound lots, they should also include the conditional requirement found in Section 1106.2 Exception that a passenger loading zone must be provided where the lot is accessed by the public.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. Because this is an exception, it is optional and will not increase or decrease costs.

E125-21

E126-21

IBC: 1107.2, 1107.2.1, TABLE 1107.2.1 (New), 1107.2.2, 1107.2.2.1 (New), 1107.2.3 (New), 1107.2.4 (New)

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

2021 International Building Code

Revise as follows:

1107.2 Electrical vehicle charging stations. Electrical vehicle charging stations shall comply with Sections 1107.2.1 and 1107.2.2 through 1107.2.4.

Exception: Electrical vehicle charging stations provided to serve Group R-2, R-3 and R-4 occupancies are not required to comply with this section.

Delete and substitute as follows:

~~**1107.2.1 Number of accessible vehicle spaces.** Not less than 5 percent of vehicle spaces on the site served by electrical vehicle charging systems, but not fewer than one for each type of electric vehicle charging system, shall be accessible.~~

1107.2.1 Number of accessible vehicle charging stations. Where *electric vehicle charging stations* are provided for public use, the minimum number of accessible *electric vehicle charging stations* shall be provided in accordance with Table 1107.2.1. Where new *electric vehicle charging stations* are installed in facilities with existing *electric vehicle charging stations*, the total number of *electrical vehicle charging stations* shall include both existing and new *electric vehicle charging stations*. Where an *electric vehicle charging station* charger can simultaneously charge more than one vehicle, the number of *electric vehicle charging stations* shall be considered equivalent to the number of electric vehicles that can be simultaneously charged. Vehicle spaces serving electric vehicle charging stations shall not be counted as any of the accessible parking spaces on the site unless specifically provided with identification signage in accordance with Section 1107.2.5.

Exception: Electric vehicle charging stations not available to the general public and intended for use by a designated vehicle or driver shall not be required to comply with this section. Examples include, but are not limited to, charging stations serving public or private fleet vehicles, assigned to an employee, or serving private residences.

Add new text as follows:

TABLE 1107.2.1 ELECTRIC VEHICLE CHARGING STATIONS FOR PUBLIC USE.

NUMBER OF ELECTRIC VEHICLE CHARGING STATIONS REQUIRED	MINIMUM NUMBER OF ACCESSIBLE VEHICLE CHARGING STATIONS
1 to 25	1
26 to 50	2
51 to 100	3
Over 100	4, plus 1 for each additional 200

Delete and substitute as follows:

~~**1107.2.2 Vehicle space size.** Accessible vehicle spaces shall comply with the requirements for a van-accessible parking space that is 132 inches (3350 mm) minimum in width with an adjoining access aisle that is 60 inches (1525 mm) minimum in width.~~

~~**1107.2.2 Parking space size.** Parking spaces serving accessible electric vehicle charging stations shall be sized the same as an accessible parking space including both the parking space and the accessible aisle serving it.~~

Add new text as follows:

1107.2.2.1 Van space. A minimum of one parking space serving an *electric vehicle charging station* shall be sized the same as a van-accessible parking space, including both the parking space and the *accessible* aisle serving it.

1107.2.3 Building or facility. *Accessible electric vehicle charging stations* that serve a building or facility on the same site shall be located along an *accessible route* providing access to an accessible building entrance. Accessible *electric vehicle charging stations* that do not serve a building or facility on the same site, shall be located along an accessible route providing access to the *public way*.

1107.2.4 Accessible identification signs. Accessible *electric vehicle charging stations* shall be identified by signage to include the International Symbol of Accessibility.

Exception: Where a total of ten or fewer electric vehicle charging stations are provided, accessible identification signage is not required.

Reason Statement: These proposed code changes continue the premise that Electric Vehicle (EV) Charging Stations (EVCS) are not required to be provided. However, when they are provided, these proposed changes better clarify the scoping provisions and more closely resemble the

approach taken with respect to regular versus accessible parking spaces, per Section 1106.

At present, a minimum of 5% of all EVCS provided on a site are required to be accessible. However, on sites where only one or very few EVCS spaces are intended, this results in an out-sized percentage of these spaces that are limited for use by disabled EV drivers only (ex: 1 of 1 = 100%, 1 of 2 = 50%, 1 of 4 = 25%, etc.). As no formal studies were cited to justify this out-sized requirement, it seems unreasonable to assume that the number of "disabled" EV drivers is 25% (or more) of all EV drivers. As such, the current language is an over-application of these requirements that clearly does not match real-world conditions.

The proposed changes mandate that a fully accessible EV space is not required until more than ten EVCS spaces are provided on a site. However, when ten or fewer EVCS spaces are provided, the first space must be sized the same as a van-accessible spaces, but does not have the signage to limit its use. This means that it can be utilized by all drivers (not just the disabled). This is a similar approach to other accessible features within the IBC that allows use of a feature by all parties, whether a user is disabled or not (example: Type A & Type B dwelling/sleeping units). Conversely, when more than 10 EVCS spaces are provided on a site, the quantity of accessible spaces (including the signage) is mandated in a graduated quantity, as based on the ranges noted within Table 1107.2.1. However, for the most part, these ranges track fairly close to the existing 5% rule, they just don't eliminate the use of the first accessible EVCS space by the overwhelming plurality of EV drivers if 10 or fewer EVCS spaces are provided.

At present, 100% of all accessible EVCS spaces are required to comply with the provisions of a van-accessible space. Again, this is not consistent with the van-accessible provisions for regular parking spaces, and represents a clear over-application of this provision. The proposed changes to Section 1107.2.2 require that only the first accessible EVCS space is mandated to be sized as van-accessible. Therefore, the each additional accessible EVCS space provided (up to 6 total) must only comply with the sizing provisions for a "regular-accessible" parking space.

The addition of Section 1107.2.3 is proposed to address the two unique reasons that EVCS spaces are provided on a site. Where EVCS spaces are provided to serve a building or facility on a site, an accessible route is required to be provided from the "accessible" EVCS space(s) to the nearest public building entrance. However, where EVCS spaces are provided on a site, but not intended to serve a specific building for facility on a site (or where no building or facility is proposed on a site), an accessible route is only required from the public way to the "accessible" EVCS space(s). This is necessary since a great number of EVCS facilities are being provided for purposes that have no connection to any other building or facility on the same site. An example of this is Tesla, with nearly 1,000 charging stations throughout the United States, each having no direct connection to the building(s) on the sites where they occur.

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

Because the installation of Electric Vehicle Charging Stations remains entirely "voluntary", there is no direct cost impact to a project. A designer can always choose to omit EVCS from a site. However, in consideration of these proposed changes when compared to the 2021 IBC provisions that these replace, there is also zero cost impact.

E127-21

IBC: 1108.3

Proponents: Marsha Mazz, representing United Spinal Association (mmazz@accessibility-services.com)

2021 International Building Code

Revise as follows:

1108.3 Accessible spaces. Rooms and spaces available to the general public or available for use by residents and serving Accessible units, *Type A units* or *Type B units* shall be *accessible*. *Accessible* spaces shall include, but are not limited to, toilet and bathing rooms, kitchen, living and dining areas and any exterior spaces, including patios, terraces and balconies.

Exceptions:

1. *Stories* and *mezzanines* exempted by Section 1108.4.
2. Recreational facilities in accordance with Section 1111.2.
3. Exterior decks, patios or balconies that are part of *Type B units* and have impervious surfaces, and that are not more than 4 inches (102 mm) below the finished floor level of the adjacent interior space of the unit.

Reason Statement: This should not be an exhaustive list. For example, occupancies having dwelling units often have common use spaces such as bike storage areas, dog wash stations, small entertainment centers or movie theaters, and other common use rooms and spaces that are not listed in the current requirement and that must be accessible in accordance with the Fair Housing Act or the ADA.

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

As noted in the reason statement, this is primarily a clarification to coordinate with federal laws including, but not limited to, the Americans with Disabilities Act and the Fair Housing Act.

E127-21

E128-21

IBC: 1108.5.1, 1108.5.1.4 (New), 1108.6.1, 1108.6.2.2, 1108.6.2.2.3(New), SECTION E104, E104.1, E104.2, E104.2.1, TABLE E104.2.1, E104.2.2, E104.2.3, E104.2.4

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

2021 International Building Code

1108.5 Group I. *Accessible units* and *Type B units* shall be provided in Group I occupancies in accordance with Sections 1108.5.1 through 1108.5.5.

Revise as follows:

1108.5.1 Group I-1. *Accessible units*

and *Type B units* shall be provided in Group I-1 occupancies in accordance with Sections 1108.5.1.1 ~~and through~~ 1108.5.1.3. Communication features as noted in Section 1106 of ICC A117.1 shall be provided in accordance with Section 1108.5.1.4.

1108.5.1.1 Accessible units. *(no change to text)*

1108.5.1.2 Accessible units in Group I-1, Condition 2. *(no change to text)*

1108.5.1.3 Type B units. *(no change to text)*

Add new text as follows:

1108.5.1.4 Communication features. In addition to the requirements in Section 907.5.2.3.3, Group I-1 occupancies containing more than 20 dwelling units or sleeping units, at least 2 percent but not less than one of the units shall be provided with communications features as noted in Section 1106 of ICC A117.1. All Group I-1 units on a site shall be considered to determine the total number of units and the required number of units with communications features and shall be dispersed among the various classes of units.

Revise as follows:

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. Communication features shall be provided in accordance with Section 1108.6.1.3 as noted in Section 1106 of ICC A117.1.

1108.6.1.1 Accessible units. *(no change to text)*

1108.6.1.2 Type B units. *(no change to text)*

Revise as follows:

TABLE ~~E104.2.1~~ 1108.6.1.3
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

~~E104.2.1~~ 1108.6.1.3 Transient lodging Communication features. ~~In transient lodging facilities,~~

~~In additions to the requirements of Section 907.5.2.3.2, dwelling units and sleeping units with accessible communication features shall be provided in accordance with Table ~~E104.2.1~~ 1108.6.1.3 as noted in Section 1106 of ICC A117.1. Units required to comply with Table ~~E104.2.1~~ 1108.6.1.3 shall be dispersed among the various classes of units.~~

1108.6.2 Group R-2. Accessible units, Type A units and Type B units shall be provided in Group R-2 occupancies in accordance with Sections 1108.6.2.1 through 1108.6.2.3.

Revise as follows:

1108.6.2.2 Apartment houses, monasteries and convents. Type A units

and Type B units shall be provided in apartment houses, monasteries and convents in accordance with Sections 1108.6.2.2.1 and 1108.6.2.2.2. Bedrooms in monasteries and convents shall be counted as units for the purpose of determining the number of units. Where the bedrooms are grouped in sleeping units, only one bedroom in each sleeping unit shall count toward the number of required Type A units. Communication features shall be provided in accordance with Section 1108.6.2.2.3 as noted in Section 1106 of ICC A117.1.

1108.6.2.2.1 Type A units. (no change to text)

1108.6.2.2.2 Type B units. (no change to text)

Add new text as follows:

1108.6.2.2.3 Communication features. In addition to the requirements in Section 907.5.2.3.3, Group R-2 occupancies containing more than 20 dwelling units or sleeping units, at least 2 percent but not less than one of the units shall be provided with communications features as noted in Section 1106 of ICC A117.1. All Group R-2 units on a site shall be considered to determine the total number of units and the required number of units with communications features and shall be dispersed among the various classes of units.

Delete without substitution:

SECTION ~~E104~~ SPECIAL OCCUPANCIES.

~~**E104.1 General.** Transient lodging facilities shall be provided with accessible features in accordance with Section ~~E104.2~~. Group I-3 occupancies shall be provided with accessible features in accordance with Section ~~E104.2~~.~~

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

~~**E104.2.2 Group I-3.** In Group I-3 occupancies at least 2 percent of the total number of general holding cells and general housing cells equipped with audible emergency notification systems, and not less than one cell, shall be provided with visual notification devices. Permanently installed telephones within the cell shall comply with Section ~~E104.2.4~~.~~

~~**E104.2.3 Dwelling units and sleeping units.** Where dwelling units and sleeping units are altered or added, the requirements of Section ~~E104.2~~ shall apply only to the units being altered or added until the number of units with accessible communication features complies with the minimum number required for new construction.~~

~~**E104.2.4 Notification devices.** Visual notification devices shall be provided to alert room occupants of incoming telephone calls and a door knock~~

~~or bell. Notification devices shall not be connected to visual alarm signal appliances. Permanently installed telephones shall have volume controls and an electrical outlet complying with ICC A117.1 located within 48 inches (1219 mm) of the telephone to facilitate the use of a TTY.~~

Reason Statement: Section 504 of the Rehabilitation Act of 1973 is a federal law, codified at 29 U.S.C. § 794, that prohibits discrimination on the basis of disability in federally-assisted programs or activities. Federal assistance can come in different forms. It may be directly given from the US Department of Housing and Urban Development (HUD). It can also be given through state and local organizations that received HUD moneys and pass that on to applicants. In so doing, they are required to pass along the requirement for compliance with Section 504. Within the pages of the law is the requirement that a number of units meet higher levels of accessibility. These units must comply with either the provisions of the Uniform Federal Accessibility Standards (UFAS) or the 2010 ADA Standards for Accessible Design (2010 Standards). Both contain specific provision that are essentially the same as those for Type A units in the ICC A117.1 standard for mobility features. However, the IBC contains no requirement for units with communications features while both the federal standards (UFAS and 2010 Standards) require that at least 2 percent of the units be provided with communications features. California already requires many of these features for all multi-family residential dwelling units.

The United States Department of Agriculture (USDA) also has the 2 percent provisions under its Section 504 regulations, which may have more housing than HUD. Every state and local government housing must comply with Title II provisions of the ADA which also have the 2 percent criteria. Additionally, the Architectural Barriers Act (ABA) requires federally owned housing (such as military housing on-base) and housing constructed with federal monies to have the same 2 percent provisions.

This proposal would align the IBC provisions with that of HUD, USDA for federally assisted projects and with GSA and DOD for federal housing. The proposal would remove communications barriers as identified as being discriminatory by HUD. Communications features noted in ICC A117.1 include:

- Audible notification for smoke detectors;
- Visible notification for smoke detectors;
- Fire alarm wiring extended to the area, where fire alarms are provided;
- Hardwired doorbell with audible notification;
- Peepholes or similar visitor identification device;
- TTY or similar means of communication between security entrances and the unit, where such systems are provided; and
- Visible notification of a call where closed circuit communications systems are provided.

While it is true that not all residential developments are provided with federal assistance, it is also true that the federal government, through HUD, GSA, USDA and other agencies, has determined that it is discriminatory to provide units without these communications features.

To address this issue requires additional text within Chapter 11. Some of that is already included in Appendix E. However, a number of jurisdictions do not adopt Appendix E along with the rest of the code so it is important that these features get moved to where they will not be eliminated. Some of the text is new to address the lack of current provisions for communications features in certain occupancies. Some of the text is general in nature and does not require explanation. The following is a list of changes and their reasons:

1108.5.1.4 - This is a new provision. Among the types of occupancies included in I-1 are Alcohol and Drug centers, group homes and halfway houses. These are types of occupancies that receive federal assistance and would be subject to the provisions of Section 504. For those occupancies this only places the requirement in the IBC since it was already present in the federal rules.

1108.6.1, 1108.6.1.3 - As most people are aware, communication features are already required in transient lodging facilities (Group R-1 occupancies) according to the ADA. Appendix E includes this provision. This is not a change. It only relocates the text to Chapter 11.

Table 1108.6.1.3 - This is already in Appendix E. It is merely relocated to Chapter 11.

1108.6.2.2, 1108.6.2.2.3 - Apartments and condominiums that receive federal assistance during construction or operation are subject to Section 504 compliance. Many that receive local or regional assistance through grants or lending receive their funding from federal programs who, in turn, pass along these requirements to the those receiving the funds. While there are many R-2 occupancies that do not fall into the category of receiving federal assistance, this is an important item as noted in the discussion above and should be provided across the board. It is a recognized need in the community and much easier to do when designing and constructing a facility than by altering or modifying an existing facility upon request from an owner or tenant.

The communication features are built in elements and should not be relegated to Appendix E to be forgotten or lost during code adoption. These are not new requirements. It is just a relocation of the text. Many of the other occupancies not previously noted for requiring communication features already have this requirement by virtue of their nature and federal assistance. And, it should not be only those residential facilities that receive federal assistance that should be providing communication features. Others should have the requirement as well.

It is time that the ICC recognize the need for these communication features are important and that this is the right place for those requirements.

Bibliography: 29 U.S.C. § 794 - Rehabilitation Act of 1973

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

The construction costs will increase since communication features are not always provided for project with dwelling units or sleeping units. Some of the increased costs are negligible because many of these features (e.g., peepholes) are provided throughout apartments already. The changes should not change the cost of construction for projects with dwelling and sleeping units which are covered by the ADA and/or Section 504 of the Rehabilitation Act of 1973 as the code change is intended to harmonize the IBC with these requirements. Notably, it is unlikely that there will be a cost increase for R-1 Transient Lodging projects as they are generally required to provide communication features for ADA compliance and this is already a requirement in jurisdictions where Appendix E of the IBC is adopted.

E128-21

E129-21

IBC: 1108.5.1.1, 1108.5.1.2, 1108.5.2.1, 1108.5.4, 1110.2, 1110.2.2, 1110.2.2.1, 1110.2.2.2, 1110.2.2.2.1, 1110.2.2.2.2, 1110.2.2.2.3, 1110.2.2.3, 1110.2.2.4, 1110.2.2.5, 1110.2.2.6, 1110.2.3, 1110.2.3.1, 1110.2.3.2, 1110.2.3.3, 1110.2.3.3.1, 1110.2.3.3.2, 1110.2.3.4, 1110.2.3.5, 1110.2.3.6, 1110.2.3.7, 1110.2.3.8, 1110.2.3.9

Proponents: Marsha Mazz, representing United Spinal Association (mmazz@accessibility-services.com)

2021 International Building Code

Revise as follows:

1108.5.1.1 Accessible units. In Group I-1, Condition 1, at least 4 percent, but not less than one, of the *dwelling units* and *sleeping units* shall be *Accessible units*. Accessible dwelling units and sleeping units shall be dispersed among the various classes of units.

Exceptions:

1. Water closets ~~shall not be required to comply with ICC A117.1 where such water closets comply with Section 1110.2.2;~~ in not more than 50 percent of the *Accessible units* shall be permitted to comply with the provisions for water closets for assisted use in ICC A117.1.
2. Roll-in-type showers ~~shall not be required to comply with ICC A117.1 where roll-in-type showers comply with Section 1110.2.3;~~ in not more than 50 percent of the *Accessible units* shall be permitted to comply with the provisions for roll-in type showers for assisted use in ICC A117.1.

1108.5.1.2 Accessible units in Group I-1, Condition 2. In Group I-1, Condition 2, at least 10 percent, but not less than one, of the dwelling units and sleeping units shall be *Accessible units*. Accessible dwelling units and sleeping units shall be dispersed among the various classes of units.

Exceptions:

1. Water closets ~~shall not be required to comply with ICC A117.1 where such water closets comply with Section 1110.2.2;~~ in not more than 50 percent of the *Accessible units* shall be permitted to comply with the requirements for water closets for assisted use in ICC A117.1.
2. Roll-in-type showers ~~shall not be required to comply with ICC A117.1 where roll-in-type showers comply with Section 1110.2.3;~~ in not more than 50 percent of the *Accessible units* shall be permitted to comply with the requirements for roll-in type showers for assisted use in ICC A117.1.

1108.5.2.1 Accessible units. At least 50 percent but not less than one of each type of the *dwelling units* and *sleeping units* shall be *Accessible units*.

Exceptions:

1. Water closets ~~shall not be required to comply with ICC A117.1 where such water closets comply with Section 1110.2.2;~~ in not more than 90 percent of the *Accessible units* shall be permitted to comply with the requirements for water closets for assisted use in ICC A117.1.
2. Roll-in-type showers ~~shall not be required to comply with ICC A117.1 where roll-in-type showers comply with Section 1110.2.3;~~ in not more than 90 percent of the *Accessible units* shall be permitted to comply with the requirements for roll-in type showers for assisted use in ICC A117.1.

1108.5.4 Group I-2 rehabilitation facilities. In *hospitals* and rehabilitation facilities of Group I-2 occupancies that specialize in treating conditions that affect mobility, or units within either that specialize in treating conditions that affect mobility, 100 percent of the *dwelling units* and *sleeping units* shall be *Accessible units*.

Exceptions:

1. Water closets ~~shall not be required to comply with ICC A117.1 where such water closets comply with Section 1110.2.2;~~ in not more than 50 percent of *Accessible units* shall be permitted to comply with the requirements for water closets for assisted use in ICC A117.1.
2. Roll-in-type showers ~~shall not be required to comply with ICC A117.1 where roll-in-type showers comply with Section 1110.2.3;~~ in not more than 50 percent of *Accessible units* shall be permitted to comply with the requirement for roll-in type showers for assisted use in ICC A117.1.

1110.2 Toilet and bathing facilities. Each toilet room and bathing room shall be *accessible*. Where a floor level is not required to be connected by an *accessible route*, the only toilet rooms or bathing rooms provided within the facility shall not be located on the inaccessible floor. Except as provided for in Sections 1110.2.4 and 1110.2.5, at least one of each type of fixture, element, control or dispenser in each accessible toilet room and bathing room shall be *accessible*.

Exceptions:

1. Toilet rooms or bathing rooms accessed only through a private office, not for *common* or *public use* and intended for use by a single occupant, shall be permitted to comply with the specific exceptions in ICC A117.1.
2. This section is not applicable to toilet and bathing rooms that serve *dwelling units* or *sleeping units* that are not required to be *accessible* by Section 1108.
3. Where multiple single-user toilet rooms or bathing rooms are clustered at a single location, at least 50 percent but not less than one room for each use at each cluster shall be *accessible*.
4. Where no more than one urinal is provided in a toilet room or bathing room, the urinal is not required to be *accessible*.
5. Toilet rooms or bathing rooms that are part of critical care or intensive care patient sleeping rooms serving *Accessible units* are not required to be *accessible*.
6. Toilet rooms or bathing rooms designed for bariatrics patients are not required to comply with the toilet room and bathing room requirement in ICC A117.1. The *sleeping units* served by bariatrics toilet or bathing rooms shall not count toward the required number of *Accessible sleeping units*.
7. ~~Where permitted in Section 1108, in toilet rooms or bathrooms serving Accessible units, water closets designed for assisted toileting shall comply with Section 1110.2.2.~~
8. ~~Where permitted in Section 1108, in bathrooms serving Accessible units, showers designed for assisted bathing shall comply with Section 1110.2.3.~~
97. Where toilet facilities are primarily for children's use, required *accessible* water closets, toilet compartments and lavatories shall be permitted to comply with children's provision of ICC A117.1.

Delete without substitution:

~~**1110.2.2 Water closets designed for assisted toileting.** Water closets designed for assisted toileting shall comply with Sections 1110.2.2.1 through 1110.2.2.6.~~

~~**1110.2.2.1 Location.** The centerline of the water closet shall be not less than 24 inches (610 mm) and not greater than 26 inches (660 mm) from one side of the required clearance.~~

~~**1110.2.2.2 Clearance.** Clearance around the water closet shall comply with Sections 1110.2.2.2.1 through 1110.2.2.2.3.~~

~~**1110.2.2.2.1 Clearance width.** Clearance around a water closet shall be not less than 66 inches (1675 mm) in width, measured perpendicularly from the side of the clearance that is not less than 24 inches (610 mm) and not greater than 26 inches (660 mm) from the water closet centerline.~~

~~**1110.2.2.2.2 Clearance depth.** Clearance around the water closet shall be not less than 78 inches (1980 mm) in depth, measured perpendicularly from the rear wall.~~

~~**1110.2.2.2.3 Clearance overlap.** The required clearance around the water closet shall permit overlaps per ICC A117.1, Section 604.3.3.~~

~~**1110.2.2.3 Height.** The height of the water closet seats shall comply with ICC A117.1, Section 604.4.~~

~~**1110.2.2.4 Swing-up grab bars.** Swing-up grab bars shall comply with ICC A117.1, Sections 609.2 and 609.8. Swing-up grab bars shall be provided on both sides of the water closet and shall comply with all of the following:~~

- ~~1. The centerline of the grab bar shall be not less than 14 inches (356 mm) and not greater than 16 inches (405 mm) from the centerline of the water closet.~~
- ~~2. The length of the grab bar is not less than 36 inches (915 mm) in length, measured from the rear wall to the end of the grab bar.~~
- ~~3. The top of the grab bar in the down position is not less than 30 inches (760 mm) and not greater than 34 inches (865 mm) above the floor.~~

~~**1110.2.2.5 Flush controls.** Flush controls shall comply with ICC A117.1, Section 604.6.~~

~~**1110.2.2.6 Dispensers.** Toilet paper dispensers shall be mounted on at least one of the swing-up grab bars and the outlet of the dispenser shall be located not less than 24 inches (610 mm) and not greater than 36 inches (915 mm) from the rear wall.~~

~~**1110.2.3 Standard roll-in-type shower compartment designed for assisted bathing.** Standard roll-in-type shower compartments designed for assisted bathing shall comply with Sections 1110.2.3.1 through 1110.2.3.9.~~

~~**1110.2.3.1 Size.** Standard roll-in-type shower compartments shall have a clear inside dimension of not less than 60 inches (1525 mm) in width and 30 inches (760 mm) in depth, measured at the center point of opposing sides. An entry not less than 60 inches (1525 mm) in width shall be provided.~~

~~**1110.2.3.2 Clearance.** A clearance of not less than 60 inches (1525 mm) in length adjacent to the 60-inch (1525 mm) width of the open face of the shower compartment, and not less than 30 inches (760 mm) in depth, shall be provided.~~

Exceptions:

- 1- A lavatory complying with ICG A117.1, Section 606 shall be permitted at one end of the clearance.
- 2- Where the shower compartment exceeds minimum sizes, the clear floor space shall be placed adjacent to the grab bars and not less than 30 inches (762 mm) from the back wall.

1110.2.3.3 Grab bars. Grab bars shall comply with ICG A117.1, Section 609 and shall be provided in accordance with Sections 1110.2.3.3.1 and 1110.2.3.3.2. In standard roll-in type shower compartments, grab bars shall be provided on three walls. Where multiple grab bars are used, required horizontal grab bars shall be installed at the same height above the floor. Grab bars can be separate bars or one continuous bar.

1110.2.3.3.1 Back-wall grab bar. The back-wall grab bar shall extend the length of the back wall and extend within 6 inches (150 mm) maximum from the two adjacent sidewalls.

Exception: The back-wall grab bar shall not be required to exceed 48 inches (1220 mm) in length. The rear grab bar shall be located with one end within 6 inches maximum of a sidewall with a grab bar complying with Section 1110.2.3.3.2.

1110.2.3.3.2 Sidewall grab bars. The sidewall grab bars shall extend the length of the wall and extend within 6 inches (150 mm) of the adjacent back wall.

Exceptions:

- 1- The sidewall grab bar shall not be required to exceed 30 inches (760 mm) in length. The side grab bar shall be located with one end within 6 inches (152 mm) of the back wall with a grab bar complying with Section 1110.2.3.3.1.
- 2- Where the sidewalls are located 72 inches (1830 mm) or greater apart, a grab bar is not required on one of the sidewalls.

1110.2.3.4 Seats. Wall-mounted folding seats shall not be installed.

1110.2.3.5 Controls and hand showers. In standard roll-in type showers, the controls and hand shower shall be located not less than 38 inches (965 mm) and not greater than 48 inches (1220 mm) above the shower floor. Controls shall be located to facilitate caregiver access.

1110.2.3.6 Hand showers. Hand showers shall comply with ICG A117.1, Section 608.5.

1110.2.3.7 Thresholds. Thresholds shall comply with ICG A117.1, Section 608.6.

1110.2.3.8 Shower enclosures. Shower compartment enclosures for shower compartments shall comply with ICG A117.1, Section 608.7.

1110.2.3.9 Water temperature. Water temperature shall comply with ICG A117.1, Section 608.8.

Reason Statement: The ICC A117 Committee has formed a task group to review and potentially update the technical requirements in the 2021 IBC for water closets and roll-in type showers for assisted use. The intent is to locate those criteria in the next edition of the Standard because they are technical requirements and belong in the Standard, not the Code. We anticipate that the requirements in the ICC A117.1 will differ somewhat from the requirements in the IBC. We wish to avoid duplication and potential conflicts. This proposal does not change the percentage of dwelling or sleeping units in various occupancies in Section 1108 permitted to use those criteria. If the next edition of the Standard is not available to be referenced by the 2024 IBC, we will request disapproval of the proposal and submit a public comment to approve it when the Standard becomes available.

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

This proposal simply acknowledges that the technical requirements for water closets and roll-in type showers for assisted use will reside in the ICC A117.1, and not in the building code.

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.

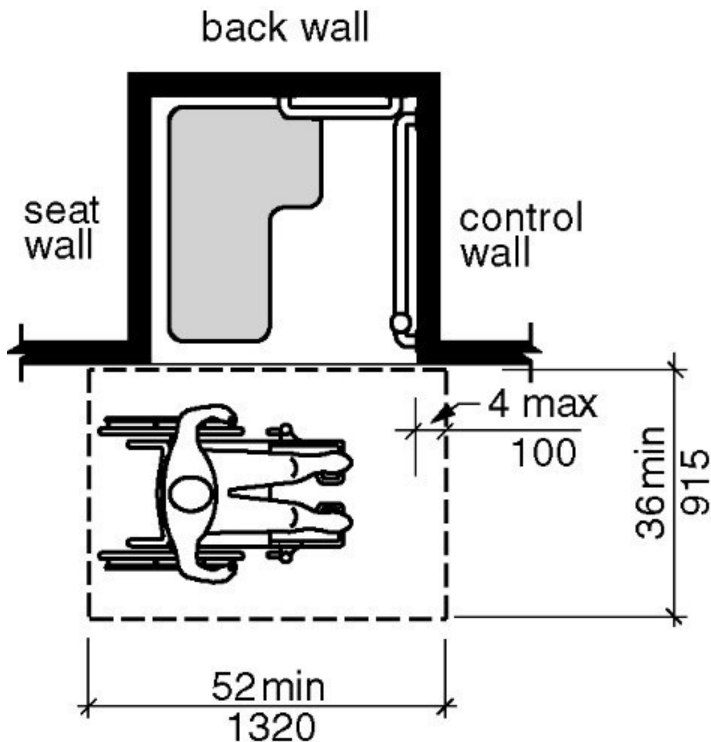
Revise as follows:

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

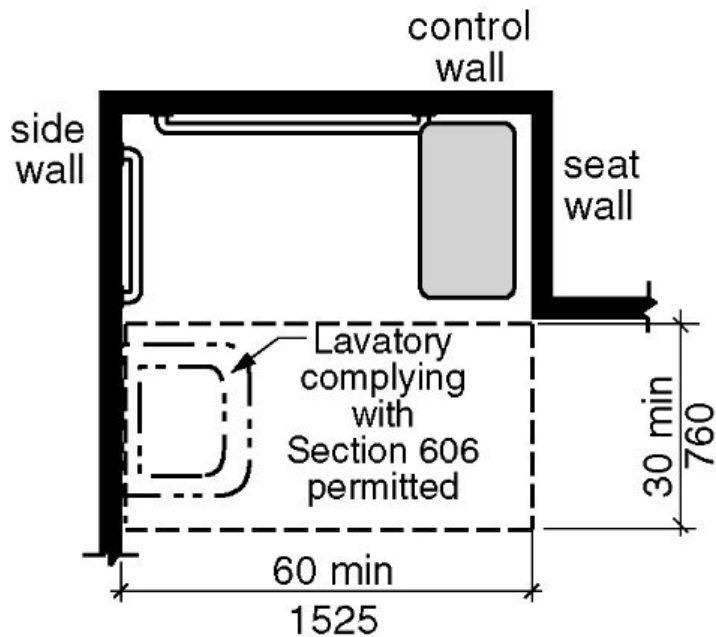
TOTAL NUMBER OF UNITS PROVIDED	MINIMUM REQUIRED NUMBER OF ACCESSIBLE UNITS WITHOUT ROLL-IN SHOWERS	MINIMUM REQUIRED NUMBER OF ACCESSIBLE UNITS WITH ROLL-IN SHOWERS	TOTAL NUMBER OF REQUIRED ACCESSIBLE UNITS
1 to 25	1	0	1
26 to 50	2	0	2
51 to 75	3	1	4
76 to 100	4	1	5
101 to 150	5	2	7
151 to 200	6	2	8
201 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.

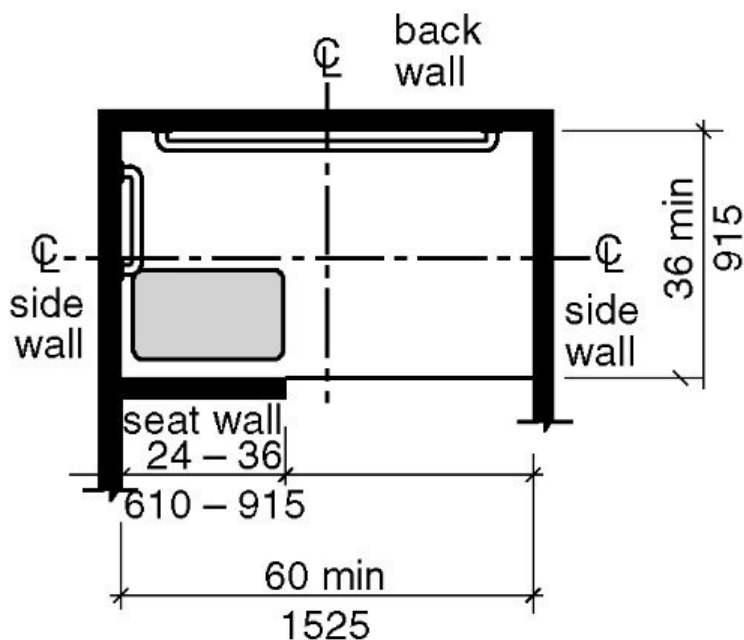


Transfer shower



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)

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 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.

E131-21

E132-21

IBC: 1108.6.2.2.1

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

2021 International Building Code

Revise as follows:

1108.6.2.2.1 Type A units. In Group R-2 occupancies containing more than 20 *dwelling units* or *sleeping units*, at least ~~2.5~~ percent but not less than one of the units shall be a *Type A unit*. All Group R-2 units on a site shall be considered to determine the total number of units and the required number of *Type A units*. *Type A units* shall be dispersed among the various classes of units.

Exceptions:

1. The number of *Type A units* is permitted to be reduced in accordance with Section 1108.7.
2. *Existing structures* on a site shall not contribute to the total number of units on a site.

Reason Statement: Section 504 of the Rehabilitation Act of 1973 is a federal law, codified at 29 U.S.C. § 794, that prohibits discrimination on the basis of disability in federally-assisted programs or activities. Federal assistance can come in different forms. It may be directly given from the US Department of Housing and Urban Development (HUD). It can also be given through state and local organizations that received HUD moneys and pass that on to applicants. In so doing, they are required to pass along the requirement for compliance with Section 504.

The United States Department of Agriculture (USDA) also has the 5 percent provisions under its Section 504 regulations, which may have more housing than HUD. Every state and local government housing must comply with Title II provisions of the ADA which also have the 5 percent criteria. Additionally, the Architectural Barriers Act (ABA) requires federally owned housing (such as military housing on-base) and housing constructed with federal monies to have the same 5 percent provisions.

Within the pages of the law is the requirement that a number of units meet higher levels of accessibility. These units must comply with either the provisions of the Uniform Federal Accessibility Standards (UFAS) or the 2010 ADA Standards for Accessible Design (2010 Standards). Both contain specific provision that are essentially the same as those for Type A units in the ICC A117.1 standard. However, whereas the IBC requires 2 percent to comply with this level of accessibility, both the federal standards (UFAS and 2010 Standards) require that number to be 5 percent. This proposal would align the IBC provisions with that of HUD for federally assisted projects.

While it is true that not all residential developments are provided with federal assistance, it is also true that the federal government, through HUD, has determined that it is discriminatory to provide fewer than 5 percent of the dwelling units with this higher level of accessibility. Notable exceptions exist. The District of Columbia requires the number of Type A units to be 15 percent. The city of Phoenix requires 6 percent to be Type A units where those dwelling units are located within a close proximity to a light rail station. The state of Washington requires 5 percent; the same as HUD. Illinois and Chicago require 20 percent in certain conditions. The City of New York has incorporated numerous Type A provisions into what they refer to as "B+" units and require those provisions to be applicable to 100 percent of the dwelling units. The state of New Jersey has effectively eliminated Type B units and required all new construction to be Type A.

The United States Department of Agriculture (USDA) also has the 5 percent provisions under its Section 504 regulations, which may have more housing than HUD. Every state and local government housing must comply with Title II provisions of the ADA which also have the 5 percent criteria. Additionally, the Architectural Barriers Act (ABA) requires federally owned housing (such as military housing on-base) and housing constructed with federal monies to have the same 5 percent provisions.

It is time that the ICC recognize the need for increasing the percentage of Type A units as other jurisdictions and multiple federal departments and agencies have already done.

Bibliography: 29 U.S.C. § 794 - Rehabilitation Act of 1973

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

By changing the number of Type A units from two percent to five percent, the difference in cost will be associated with the difference in cost between a Type B unit and a Type A unit. A hard number cannot be determined since the difference is a factor of the overall design concept, any differences in materials and any reconfiguration of layouts. In some instances there will be a definable cost. In some instances there may not be any increase in cost due to the materials and space configuration.

E132-21

E133-21

IBC: 1108.6.2.2.1

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

2021 International Building Code

Revise as follows:

1108.6.2.2.1 Type A units. In Group R-2 occupancies containing more than 20 *dwelling units* or *sleeping units*, at least 2 percent but not less than one of the units shall be a *Type A unit*. All Group R-2 units on a site shall be considered to determine the total number of units and the required number of *Type A units*. *Type A units* shall be dispersed among the various classes of units. Where two or more Type A units are provided, at least 5 percent but not less than one Type A unit, shall include a bathroom with a shower complying with ICC A117.1 for Type A units.

Exceptions:

1. The number of *Type A units* is permitted to be reduced in accordance with Section 1108.7.
2. *Existing structures* on a site shall not contribute to the total number of units on a site.

Reason Statement: Type A units can include either bathtubs or showers. However, the intent with a Type A unit is to provide features for people's needs that are greater than that in a Type B unit. Unfortunately, for many people a bathtub is quite difficult to transfer into given the various types of disabilities which an individual can have. Where limited upper body strength exists, it is quite difficult trying to lift inert legs other the rim of a bathtub. A shower, with the low threshold would make it much easier to effect a transfer from wheelchair to shower seat. A shower can be essentially the same size and a bathtub or even smaller if a transfer shower is provided. The shower is still an adaptable element - one which has the capability for grab bar installation but does not require them installed at construction. The ratio is still very low. To have two Type A units would require an apartment complex of 80 units. For there to be 2 showers required, the apartment complex would need 2000 units. This is a modest request to provide a better bathing element for a number of individuals with mobility limitations.

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

The space for a shower is the same or even less than that for a bathtub. Depending on the materials and elements selected, the difference is costs often results in the shower being less expensive. An adaptable enclosure is allowed for both bathtubs and showers. This should not affect costs.

E133-21

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.

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. There are no changes in requirements.

E134-21

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.

E135-21

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.

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.

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.

E136-21

E137-21

IBC: 1109.2.8 (New)

Proponents: Andrew Cid, representing BARRIER FREE SOLUTIONS FOR THE DEAF AND HARD OF HEARING (andycid99@gmail.com)

2021 International Building Code

Add new text as follows:

1109.2.8 Captioning. Assembly spaces primarily for viewing motion picture projections shall provide captioning for the projection.

Reason Statement: This options should be available for those severely hearing impaired individuals who do not have the ability to use an assisted listening system.

Cost Impact: The code change proposal will increase the cost of construction
The addition cost would be to add a captioning system in these spaces.

E137-21

E138-21

IBC: 1109.2.9.1, 1110.12, 1110.12.1, 1110.12.2 (New)

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); Gina Hilberry, UCP, representing United Cerebral Palsy (gina@cohenhilberry.com)

2021 International Building Code

Revise as follows:

1109.2.9.1 Dining surfaces. ~~Where dining~~ Dining surfaces provided for the consumption of food or drink ~~are provided, at least 5 percent, but not less than one, of the dining surfaces for the seating and standing spaces shall be accessible shall comply with Section 1110.12. and be distributed throughout the facility and located on a level accessed by an accessible route.~~

1110.12 Seating at tables, counters, bars, and work surfaces. ~~Where seating or standing space at fixed, or built-in, or movable tables, counters or work surfaces is~~ are provided for the consumption of food or drink in accessible spaces, at least 5 percent, but not less than one of the seating and standing spaces at such tables but not less than one, shall be *accessible*. Where fixed or built-in counters or bars are provided for the consumption of food or drink, or fixed or built-in work surface are provided, at least 5 percent, but not less than one, of the seating and standing spaces at such counters, bars, and work surfaces shall be accessible.

Exception: Check-writing surfaces at check-out aisles not required to comply with Section 1110.13.1 are not required to be *accessible*.

1110.12.1 Dispersion. ~~Accessible fixed or built-in~~ seating at tables, counters, bars, or work surfaces shall be distributed among similar elements located throughout the space or facility containing such elements and shall be located on a level accessed by an accessible route.

Add new text as follows:

1110.12.2 Semi-ambulatory seating. Where seating is provided at tables for the consumption of food or drink, at least 25 percent of the tables in any indoor or outdoor room or space shall be tables not exceeding 34 inches in height above the floor.

Reason Statement: The revision to Section 1109.1 simplifies the code by reducing potential confusion. Why are there two nearly identical sections addressing standing and seating spaces at tables (one for assembly spaces and another for everything else)? This proposal simply cross references the main section for tables in this section as they both require 5% of seating to be accessible; dispersion within the space; and location on levels served by accessible routes. The requirements for dispersion in 1012.1 is slightly more specific regarding dispersion of accessible tables "among similar elements" in the facility.

This proposal contains two major parts: first, Section 1110.12 would apply the scoping to both fixed and movable tables that are provided for the consumption of food or drink. New Section 1110.12.2 would ensure that seating that is at an appropriate height for persons who are semi-ambulatory is provided in addition to the wheelchair spaces.

Applying scoping to movable tables: The Department of Justice (DOJ) Americans with Disabilities Act (ADA) regulations prohibit discrimination on the basis of disability in all services, programs, and activities offered by public entities and in the operation of privately owned places of public accommodation. According to the DOJ in an Advance Notice of Proposed Rulemaking *Nondiscrimination on the Basis of Disability by State and Local Governments and Places of Public Accommodation; Equipment and Furniture* published in the Federal Register in 2010 : "The provision of accessible equipment and furniture has always been required by the ADA and the Department's implementing regulations under the program accessibility, reasonable modification, auxiliary aids and services, and barrier removal requirements". (75 FR 43452 at https://www.ada.gov/anprm2010/equipment_anprm_2010.htm). Strictly speaking, the ADA Standards apply to the built environment only. However, DOJ suggests that in many cases, the ADA Standards should be applied to furniture: "To the extent that ADA standards apply requirements for fixed equipment and furniture, the Department will look to those standards for guidance on accessibility standards for equipment and furniture that are not fixed". (75 FR 43454). Although the Department later withdrew the proposed rule because of the complexities, wide ranging scope of coverage, and enormous undertaking involved with developing new scoping and technical criteria for many of the types of equipment, the Department still maintains that movable equipment and furniture must be accessible to and usable by individuals with disabilities. Normally, we would not seek to apply the code and its referenced accessibility standard to furniture. However, the IBC already contains scoping and technical requirements for fixed tables consistent with the 2010 ADA Standards. As such, these requirements can easily be applied to similar movable elements without requiring additional training for their review and inspection. Furthermore, furniture plans are already subject to review for most occupancies with tables used for the consumption of food or drink. Without better coordination between the IBC and ADA, restaurants, bars, and other similar facilities will continue to be at risk of a lawsuit. Please note that we do not propose to make this change for counters, bars, and workstations.

New provision for semi-ambulatory seating: Maintaining a more balanced mix of high and low tables will allow persons who may, because of age or disability move with difficulty, but who do not require the use of wheelchairs. Such individuals could be little people or individuals who may use canes, crutches, or walkers and be unable to climb up or down from seats at high tables. Currently, high tables are often used for all seating except for the wheelchair seating. Semi-ambulatory individuals, therefore must compete with wheelchair users for the few tables that are not high in order to be safely and comfortably seated. Because such individuals do not require knee and toe space for a wheelchair, the only factor that needs to be

controlled is the height of the table.

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

The impact should be minimal because the Department of Justice Americans with Disabilities Act (ADA) regulations already requires non-fixed elements to be accessible in order to avoid discrimination on the basis of disability. Also, DOJ regulations prohibit discrimination on the basis that an individual must use a mobility device, such as canes, crutches, and walkers.

E138-21

E139-21

IBC: 1110.2

Proponents: Marsha Mazz, representing United Spinal Association (mmazz@accessibility-services.com)

2021 International Building Code

Revise as follows:

1110.2 Toilet and bathing facilities. Each toilet room and bathing room shall be *accessible*. Where a floor level is not required to be connected by an *accessible route*, the only toilet rooms or bathing rooms provided within the facility shall not be located on the inaccessible floor. Except as provided for in Sections 1110.2.4 and 1110.2.5, at least one of each type of fixture, element, control or dispenser in each accessible toilet room and bathing room shall be *accessible*.

Exceptions:

1. Toilet rooms or bathing rooms accessed only through a private office, not for *common* or *public use* and intended for use by a single occupant, shall be permitted to comply with the specific exceptions in ICC A117.1.
2. This section is not applicable to toilet and bathing rooms that serve *dwelling units* or *sleeping units* that are not required to be *accessible* by Section 1108 provided that such toilet or bathing rooms are not for public use.
3. Where multiple single-user toilet rooms or bathing rooms are clustered at a single location, at least 50 percent but not less than one room for each use at each cluster shall be *accessible*.
4. Where no more than one urinal is provided in a toilet room or bathing room, the urinal is not required to be *accessible*.
5. Toilet rooms or bathing rooms that are part of critical care or intensive care patient sleeping rooms serving *Accessible units* are not required to be *accessible*.
6. Toilet rooms or bathing rooms designed for bariatrics patients are not required to comply with the toilet room and bathing room requirement in ICC A117.1. The *sleeping units* served by bariatrics toilet or bathing rooms shall not count toward the required number of *Accessible sleeping units*.
7. Where permitted in Section 1108, in toilet rooms or bathrooms serving *Accessible units*, water closets designed for assisted toileting shall comply with Section 1110.2.2.
8. Where permitted in Section 1108, in bathrooms serving *Accessible units*, showers designed for assisted bathing shall comply with Section 1110.2.3.
9. Where toilet facilities are primarily for children's use, required *accessible* water closets, toilet compartments and lavatories shall be permitted to comply with children's provision of ICC A117.1.

Reason Statement: This proposal clarifies that toilet and bathing rooms that do not serve dwelling units or sleeping units that are required to be accessible by Section 1108 , but that are also open to the public such as those in a lobby area, must still be accessible.

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

This proposal will increase costs where an Accessible or Type A unit is required by the code, but not required to comply with Federal laws such as the ADA the Architectural Barriers Act, or Section 504 of the Rehabilitation Act of 1973. However, the cost of remediation is very high.

E139-21

E140-21

IBC: 1110.2

Proponents: Micah Chappell, representing Washington Association of Building Officials (micah.chappell@seattle.gov)

2021 International Building Code

Revise as follows:

1110.2 Toilet and bathing facilities. Each toilet room and bathing room shall be *accessible*. Where a floor level is not required to be connected by an *accessible route*, the only toilet rooms or bathing rooms provided within the facility shall not be located on the inaccessible floor. Except as provided for in Sections 1110.2.4 and 1110.2.5, at least one of each type of fixture, element, control or dispenser in each accessible toilet room and bathing room shall be *accessible*.

Exceptions:

1. Toilet rooms or bathing rooms accessed only through a private office, not for *common* or *public use* and intended for use by a single occupant, shall be permitted to comply with the specific exceptions in ICC A117.1.
2. This section is not applicable to toilet and bathing rooms that serve *dwelling units* or *sleeping units* that are not required to be *accessible* by Section 1108.
3. Where multiple single-user toilet rooms or bathing rooms are clustered at a single location, at least 50 percent but not less than one room for each use at each cluster shall be *accessible*. Where rooms are designated as gender-neutral, the total number of accessible fixtures shall not be less than the total number of accessible fixtures for separate male and female rooms.
4. Where no more than one urinal is provided in a toilet room or bathing room, the urinal is not required to be *accessible*.
5. Toilet rooms or bathing rooms that are part of critical care or intensive care patient sleeping rooms serving *Accessible units* are not required to be *accessible*.
6. Toilet rooms or bathing rooms designed for bariatrics patients are not required to comply with the toilet room and bathing room requirement in ICC A117.1. The *sleeping units* served by bariatrics toilet or bathing rooms shall not count toward the required number of *Accessible sleeping units*.
7. Where permitted in Section 1108, in toilet rooms or bathrooms serving *Accessible units*, water closets designed for assisted toileting shall comply with Section 1110.2.2.
8. Where permitted in Section 1108, in bathrooms serving *Accessible units*, showers designed for assisted bathing shall comply with Section 1110.2.3.
9. Where toilet facilities are primarily for children's use, required *accessible* water closets, toilet compartments and lavatories shall be permitted to comply with children's provision of ICC A117.1.

Reason Statement: This proposal ensures that the number of accessible toilet or bathing fixtures is not reduced when the required toilet and bathing facilities are designed and constructed as gender-neutral. The current language of this section states that multiple single-user facilities in a cluster only requires 50 percent, but not less than one for each use, of the facilities be accessible. This would allow for an interpretation that a gender-neutral facility would not have to provide the same number of accessible facilities as separate gender facilities. The overall number of accessible facilities provided for males and females must be maintained when using gender-neutral facilities. The inclusion of gender-neutral facilities was not intended to reduce accessibility or the number of toilet and bathing fixtures.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This proposal will not increase or decrease the cost of construction. This proposal only clarifies that the same number of accessible facilities be provided when separate sex or gender-neutral facilities are constructed.

E140-21

E141-21

IBC: 1110.2.1.2

Proponents: Marsha Mazz, representing United Spinal Association (mmazz@accessibility-services.com)

2021 International Building Code

Revise as follows:

1110.2.1.2 Family or assisted-use toilet rooms. Family or assisted-use toilet rooms shall include only one water closet and only one lavatory. A family or assisted-use bathing room in accordance with Section 1110.2.1.3 shall be considered to be a family or assisted-use toilet room.

Exception: The following additional fixtures shall be permitted in a family or assisted-use toilet room:

1. A urinal.
2. A child-height water closet.
3. A child-height lavatory.
4. An adult changing station.

Reason Statement: This is a companion proposal to our proposal to create a new 1110.3 Adult Changing Stations. Even if the first proposal is not accepted, this one should be approved so that such facilities can be voluntarily provided in family or assisted-use toilet or bathing facilities.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This proposal is an exception and is therefore voluntary.

E141-21

E142-21

IBC: 1110.3 (New), 1110.3.1 (New), 1110.3.2 (New), 1110.3.3 (New), 1110.3.4 (New)

Proponents: Marsha Mazz, Director Accessibility Codes and Standards, United Spinal Association, Accessibility Services, representing United Spinal Association (mmazz@accessibility-services.com); Jay Richards, Board of Building Standards, State of Ohio, representing Board of Building Standards (jay.richards@com.state.oh.us); Gina Hilberry, UCP, representing United Cerebral Palsy (gina@cohenhilberry.com)

2021 International Building Code

Add new text as follows:

1110.3 Adult Changing Stations. Where required, adult changing stations shall be accessible and shall comply with Sections 1110.3.1 through 1110.3.4.

1110.3.1 Where required. At least one adult changing station shall be provided in the building in the occupancies listed below:

1. In assembly and mercantile occupancies, where family or assisted-use toilet or bathing rooms are required to comply with Section 1110.2.1.
2. In a college or university business occupancy, where an aggregate of twelve or more male and female water closets or urinals are provided on any floor in a building.
3. In an elementary or high school educational occupancy with an assembly use, where an aggregate of six or more male and female water closets is required for that assembly use.
4. In highway rest stops and service plazas.

1110.3.2 Room. Adult changing stations shall be located in toilet rooms open to the public that include only one water closet and only one lavatory. Fixtures located in such rooms shall be included in determining the number of fixtures provided in an occupancy.

Exception: Adult changing stations shall be permitted to be located in family or assisted toilet rooms required in Section 1110.2.1.

1110.3.3 Prohibited location. The required accessible routes to adult changing stations shall not pass-through security checkpoints.

1110.3.4 Travel distance. Where buildings are required to have an adult changing station in accordance with Section 1110.3.1, adult changing stations shall be located such that a person is no more than one story above or below the story with the adult changing station and the path of travel to such facility shall not exceed 2000 feet.

Reason Statement: An adult changing station contains a changing table large enough to accommodate an adult-sized person that is located in proximity to sanitary facilities, such as lavatories and trash disposal. Without such facilities, severely disabled people who cannot use toilets because of their disability suffer from severe isolation because they and their caregivers must return home to be changed. This lack of access has a profound impact not only on the person with a disability, but on their caregivers who are often their immediate family members. Normal activities outside the home such as shopping, entertainment, and travel must be curtailed because of a lack of safe and sanitary places to change. On occasion, caregivers report they have no option other than to change the adults for whom they care on restroom floors. Aside from the obvious sanitation concerns which is far from minimal, this practice raises serious questions about how we as a community afford people with significant disabilities a measure of human dignity and protect their right to privacy.

In order to address this problem, the ICC A117 committee established a task group to develop requirements for adult changing stations. The committee is expected to complete it's work in March, 2021 - in time for consideration by the full committee for inclusion in the next edition of the standard which we expect to be available in time to be referenced by the 2024 IBC. The task group is comprised of committee members and interested parties - many of whom are parents of adult disabled children or who are caring for their parents. While these accommodations are not typically provided in any other type of occupancy, eleven airports, soon to be twelve, in the United States already voluntarily provide adult changing tables. Advocates for adult changing stations have had minimal success outside the code development process through state legislation, such as in California, Georgia, Canada, and the European Union. However, we believe that the building code is a far more appropriate vehicle for solving what amounts to a problem in the built environment and, we are convinced that a patchwork of state and local requirements is inefficient and presents unnecessary compliance challenges to building owners and managers.

Cost Impact: The code change proposal will increase the cost of construction. There will be the cost of a changing table and the increase in room size. We have made every attempt to minimize costs by piggy backing on the existing requirements for family or assisted-use toilet rooms.

E142-21

E143-21

IBC: 1110.3, 1110.4

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

2021 International Building Code

Revise as follows:

1110.3 Sinks. Where sinks are provided, at least 5 percent but not less than one provided in accessible spaces shall be *accessible*.

~~Exception~~ Exceptions:

1. Mop or service sinks are not required to be accessible.
2. For other than sinks in kitchens and kitchenette, where a sink requires a deep basin to perform its intended purpose or requires a specialized drain that cannot be located outside of the knee space, a parallel approach shall be permitted to be located adjacent to the sink.

1110.4 Kitchens and kitchenettes. Where kitchens and kitchenettes are provided in accessible spaces or rooms, they shall be *accessible*.

Exception: Kitchen and Kitchenette sinks shall be permitted to comply with Section 1110.3.

Reason Statement: This is intended to address two needed clarifications.

1110.3

- An added exception is provided that allows a parallel approach to the sink where the sink must be of a kind that a forward approach is not possible. This happens at medical scrub sinks, art sinks, laboratory sinks and similar sinks where caustic or extremely hot liquids may be poured and the sink is of a depth to minimize the potential that these dangerous liquids could splash out and adversely affect the surrounding materials or people. In certain instances, the drain configuration itself, in order to provide this protection, is designed such that adequate knee space is not possible for a forward approach. In these cases, although access is not possible for a forward approach, a parallel approach would still be acceptable, in order to limit the hazard to an individual using a mobility device and yet afford access. In work environments, this can be addressed through reasonable accommodations. However, teaching facilities such as high school art rooms, college labs, teaching hospitals and similar facilities require accessibility since the student station is not an employee work station. This addresses the issue directly without the need to seek a waiver or code modification. Access to the faucet and any other controls would still be required and would still need to be addressed in the design. It provided access but recognizes that different types of sinks may require different solutions for that access.

1110.4

- The exception clarifies that where multiple sinks are provided in a kitchen, it is possible to only have one that is accessible. The current text does not address this clearly. Currently, if the reader simply follows the kitchen and kitchenette path into the A117.1 standard the text there does not help the issue of multiple sinks. The standards states:

804.4 *The sink shall comply with 606.*

Does that mean all sinks; one sink (i.e., "the"); or something else? The exception allows the designer to use the 5 percent option if desired but does not mandate it. This clarifies how and when sinks in kitchens need to be accessible.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The proposal is a clarification, without cost impact.

E143-21

E144-21

IBC: 1111.4.14

Proponents: Marsha Mazz, representing United Spinal Association (mmazz@accessibility-services.com)

2021 International Building Code

Revise as follows:

1111.4.14 Swimming pools, wading pools, cold baths, hot tubs and spas. *Swimming pools*, wading pools, cold baths, hot tubs and spas shall be *accessible* and be on an accessible route.

Exceptions:

1. Catch pools or a designated section of a pool used as a terminus for a water slide flume shall not be required to provide an *accessible* means of entry, provided that a portion of the catch pool edge is on an *accessible route* or, where the catch pool edge is located on a raised platform, an accessible route serves the gate or area where participants discharge from the activity.
2. Where spas, cold baths or hot tubs are provided in a cluster, at least 5 percent, but not less than one of each type of spa, cold bath or hot tub in each cluster, shall be accessible and be on an *accessible route*.
3. *Swimming pools*, wading pools, spas, cold baths and hot tubs that are required to be *accessible* by Sections 1111.2.2 and 1111.2.3 are not required to provide *accessible* means of entry into the water.

Reason Statement: The "pool edge" of a catch pool serving a water slide is often located above ground on a platform. The purpose of the accessible route requirement to the "pool edge" is to ensure that parents and others with disabilities can meet-up with their parties after they disembark from the ride. This is particularly true for children who need to be under their parent's supervision once they exit the pool. Generally, persons entering and exiting amusement rides are surveilled when inside the pay area. So, when the pool edge is on a platform, an accessible route to the exit point should suffice.

Note: This interpretation does not represent a clearly settled matter under the 2010 ADA Standards. However, we would question the value of a ramp up to a pool edge on a raised platform given that the ride, itself, need not provide an accessible means of entry for a person with a mobility disability. Furthermore, people can often exit a catch pool at multiple points - nothing in the current provision ensures that the location of the accessible route is exactly the same place where any one rider will exit.

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

This proposal would decrease the cost of construction where catch pools are located above ground.

E144-21

E145-21

IBC: SECTION 202 (New), E107.2

Proponents: Kyle Parag, representing Division of Fire Prevention & Control (Kyle.Parag@state.co.us)

2021 International Building Code

Add new definition as follows:

TACTILE SIGN. Building signage in a location where visually impaired person could feasibly read informational elements with the sense of touch.

Revise as follows:

E107.2-1112.6 Designations. Where provided, interior and exterior signs identifying permanent rooms and spaces shall be visual characters, raised characters and braille complying with ICC A117.1. Where pictograms are provided as designations of interior rooms and spaces, the pictograms shall have visual characters, raised characters and braille complying with ICC A117.1.

Exceptions:

1. Exterior signs that are not located at the door to the space they serve are not required to comply.
2. Building directories, menus, seat and row designations in assembly areas, occupant names, building addresses and company names and logos are not required to comply.
3. Signs in parking facilities are not required to comply.
4. Temporary (seven days or less) signs are not required to comply.
5. In detention and correctional facilities, signs not located in public areas are not required to comply.

Reason Statement: Section 703.1 of ICC A117.1 uses the term tactile without defining it. Without language from the IBC, Section 703 could be considered non-applicable to voluntarily installed visual only space designation signage. This proposal defines tactile in a manner consistent with the building signage that should contained raised letters and braille.

Cost Impact: The code change proposal will not increase or decrease the cost of construction Administrative correctly to avoid a loophole. This would not require extra signs.

E145-21

E146-21

IBC: 1112.6 (New)

Proponents: Kyle Parag, representing Division of Fire Prevention & Control (Kyle.Parag@state.co.us)

2021 International Building Code

Add new text as follows:

1112.6 Braille Verification. In Group A, B, E, I, M and R-1 occupancies, documentation of braille verification completed by an approved agency or person shall be provided to the building official prior to acceptance of the final inspection. Documentation shall reference ICC A117.1.

Exceptions:

1. Buildings containing less than 10 braille signs.
2. Buildings not intended for public use.

Reason Statement: Every element of a building is inspected by someone holding some level of knowledge in that particular field. In cases where the building department is not expected to have a thorough knowledge of a particular subject, independent persons or agencies are required to complete the task of verifying compliance. Special inspectors, commissioning agents, architects, test and balance agencies, and in some cases the owner themselves are just some of the qualified persons with knowledge of the subject. Every item in a building is inspected not only once, but dozens of times by the building department and by quality control measures within contractors, architecture firms, and owners. None of these people even look at the braille beyond, "its there." Braille seems to have been left behind in the compliance verification world. I have yet to meet an employee of a building department (other than myself) that is even proficient at the most basic understanding of braille. Blind people are a lot more prevalent throughout public buildings than most people understand, and braille inaccuracies are very frustrating to these people. I have seen gender specific restrooms with braille reading "restroom." Issues like these would be fixed immediately if they were in print. Braille in buildings can rarely be trusted, which is a disservice to this built world and the people that will use it for generations ahead. Active change is simply requiring this building element to be looked at by one qualified person in the verification of compliance process. Even some sign manufacturers do not have qualified people checking braille. There is not an accurate braille translator program or website that has the accuracy required for transcription of permanent building elements.

This change is written to be a stepping stone into future more complete verification practices. This change is written to allow great flexibility for the building official to overcome obstacles with administration and difficulty expected with locating qualified persons to complete the verification. The lack of qualified persons should be seen as a desperate need for this aspect to be verified. It is also written to allow the building official to accept documentation from the custom sign manufacturer, without necessarily the need for an on-site visit. The documentation requirement from a manufacturer will begin to increase the knowledge and certified persons throughout the industry, as some building departments will start requiring braille literacy transcription certifications from the National Library Service.

Images attached are some of the very common issues found throughout new buildings in the United States on a daily basis. Some are minor, but no matter how minor, they are non-compliance issues being left unnoticed and approved. Some are brand new signs purchased from large suppliers with incorrect braille printed by the thousands.







Cost Impact: The code change proposal will increase the cost of construction
This code change will require an additional person with a particular set of skills to verify compliance.

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.

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 already a requirement under the 2010 ADA.

E147-21

E148-21

IBC: E105.2, E105.2.1, E105.2.2

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)

2021 International Building Code

Revise as follows:

~~E105.2~~ **1110.8 Laundry equipment.** Where provided in spaces required to be *accessible*, washing machines and clothes dryers shall comply with this section.

~~E105.2.1~~ **1110.8.1 Washing machines.** Where three or fewer washing machines are provided, one or more shall be *accessible*. Where more than three washing machines are provided, two or more shall be *accessible*.

~~E105.2.2~~ **1110.8.2 Clothes dryers.** Where three or fewer clothes dryers are provided, one or more shall be *accessible*. Where more than three clothes dryers are provided, two or more shall be *accessible*.

Reason Statement: This proposal moves scoping for laundry equipment from Appendix E to Chapter 11. This move will only affect public use spaces such as laundromats and common use spaces such as laundry rooms in residential occupancies. It will not affect laundry equipment located in employee only work areas because such spaces are exempted by IBC 1103.2.2. Chapter 11 of the ICC A117.1 scopes all accessible elements within Accessible, Type A, and Type B dwelling or sleeping units, including laundry equipment. It is, however, necessary to scope these criteria in Chapter 11 for public use and common use spaces to avoid costly design errors. Spaces must be designed to accommodate washers and dryers required to be accessible. In particular, the clear floor space must be properly aligned with the fixture. Changes after the fact are costly and can result in non-compliance with the ADA and the Fair Housing Act.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. Both the 2010 ADA Standards for Accessible Design and the Fair Housing Act Accessibility Guidelines already require washers and dryers to be accessible. The scoping in Appendix E is consistent with these requirements.

E148-21

E149-21

IBC: 1109.2.7.3

Proponents: Andrew Cid, representing BARRIER FREE SOLUTIONS FOR THE DEAF AND HARD OF HEARING

2021 International Building Code

Revise as follows:

1109.2.7.3 Public address systems. Where stadiums, arenas and *grandstands* have 15,000 fixed seats or more and provide audible public announcements, they shall also provide ~~prerecorded or real-time~~ captions of those audible public announcements , either prerecorded or real time.

Reason Statement: This is a clarification of the requirements for these systems.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
There is no change in construction requirements - this is a clarification of an existing requirement.

E149-21