BCAC MOE Work Group Summary with Files

Revised 11-20-2017 with meeting notes

Report of project list/proposed changes for Dec. 5 and 6, 2017 BCAC face-to-face committee meeting

ITEM	Topic	SECTION	Notes
IBC 10-1	Electric room	1006.2.2 and 1010.1.10	5 proposals - 1006.2.2 clarification 1006.2.2.4 (new) electrical rooms 1010.1.10 coordination with panic hardware 1001.1 - scoping for Chapter 10 1010.1 - reorganization of Door section
IBC 4-3/IBC2-3	Atriums and open stairways	Multiple	3 options for proposed change 11-20-2017: continue work
IBC General 05	IBC/A117.1 coord.	Multiple	Report from IBC/A117.1 work group on current proposals 10-4-2017: No work for BCAC; Suggestions to proponents
IBC 11-1	Power doors	1105.1	Revised proposal expected from Jim Hetzel No proposal as of 9-17-2017 10-4-2017: No work for BCAC; Suggestions to proponents
IBC 10-2	High-speed fabric doors	1010	Revised proposal expected from Jim Hetzel No proposal as of 9-17-2017 10-4-2017: No work for BCAC; Suggestions to proponents
IBC 2-2	Common path of travel	202	Proposed change 10-4-2017: approved
IBC 10-4/IRC 3-1	Emergency Escape Openings	IBC 1030/IRC 310	Proposed changes for IBC/IRC coordination. Existing EEO proposals for IFC, IEBC and IPMC expected from Marc Nard. No proposal as of 9-17-2017. 10-4-2017: 12 proposals approved to move forward; need work on Proposal 5, 9, 11, 12
IBC 10-3	Exit discharge	IBC 1028	E33-15 for exit discharge lighting has addressed the concerns raised. No proposal at this time.
IBC 10-5	Social stairway	IBC 202, 1011.11	Proposed change in progress 10-4-2017: continue work
IBC 10-6	Exterior stairway	IBC 1027.6	Proposed change in progress 10-4-2017: do not move forward, address question in commentary
IBC 10-7	Delayed egress	IBC 1010.1.9.8, 1010.1.10	New – clarification for delayed egress hardware in courtrooms, should this be extended to airports 10-4-2017: move forward with courthouses; continue work for airports

IBC 10-8	Educational lock-down locks	IBC 1010.1.4.4.1, IFC 1031.2.2	New - Coordination with FCAC (two files) 10-4-2017: move forward with revisions
IBC 10-9	Occupied roofs	Single exit, covered area	10-4-2017: new item, needs work

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IBC 10-1 – electrical room requirements

Notes 10-4-2017: Approved to move ahead. Pointer in 1006.2.2.4 to 1010.1.10.1. Look at the scoping sentence for panic hardware. Work with John Woestman regarding organization of door requirements – specifically hardware.

Proposal 1:

1006.2.2 Egress based on use. The numbers, types, and locations of *exits* or access to *exits* shall be provided in the uses described in Sections 1006.2.2.1 through 1006.2.2.6.

Reason: The subsections of 1006.2.2 includes not only the number of exits and exit access doorways, but also requirements regarding the exit and exit access doors, types of exit access, and their locations. This provides clarity in the scoping of this section.
Cost Impact:

Proposal 2:

1006.2.2.4 Electrical rooms. The location and number of exit or exit access doorways shall be provided for electrical rooms in accordance with Section 110.26 of NFPA 70 for electrical equipment rated 1000V or less, and Section 110.33 of NFPA 70 for electrical equipment rated over 1000V. Panic hardware shall be provided where required in accordance with Section 1010.1.10.1.

Reason: Section 1006.2.2 provides the specific requirements for the numbers, types, and locations of exits or access to exits for specific uses. Requirements are already provided in Section 1006.2.2.1 for boiler, incinerator and furnace rooms, which is based on the ASME Boiler and Pressure Vessel Code, and Section 1006.2.2.2 for refrigeration machinery rooms, which is based on ASHRAE 15. The requirements for egress for electrical rooms are not currently addressed in this code, except for where panic or fire exit hardware is used in Section 1010.1.10, which does not provide direction on how many or where the exits or exit access doorways are to be located.
The requirements for egress for electrical rooms are covered, based on the type of equipment and level of protection required, in two sections of NFPA 70, the National Electrical Code. Compliance with NFPA 70 is already required in Chapter 27 of this code, and providing the specific direction to the egress requirements in this code will assist in the design and construction of the building.
Cost Impact:

Proposal 3:

1010.1.10 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 be locking in accordance with Section 1010.1.9.4, Item 2.
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 1010.1.9.9 or 1010.1.9.10.

1010.1.10.1. Electrical rooms. Exit or exit access doors serving electrical rooms with equipment rated ~~1,200~~ 800 amperes or more ~~and over 6 feet (1829 mm) wide, and~~ that contain overcurrent devices, switching devices or control devices ~~with *exit* or *exit access doors*~~, shall be equipped with *panic hardware* or *fire exit hardware*. The doors shall swing in the direction of egress travel.

Reason: The current requirements in the International Building Code are not in alignment with the requirements in NFPA 70, the National Electrical Code. Section 110.26(C)(3) requires where there are exit or exit access doors serving a room with electrical equipment rated 800 amperes or more, those doors shall be equipped with listed panic hardware. Equipment rated 1200 amperes or more is used to determine the number and locations of exits or exit access doorways, which is addressed in Section 1006.2.2.
Cost Impact:

Proposal 4:

IBC 1**001.1 General.** Buildings or portions thereof shall be provided with a *means of egress* system as required by this chapter. The provisions of this chapter shall control the design, construction and arrangement of *means of egress* components required to provide an *approved means of egress* from structures and portions thereof. Sections 1001.1.1 through 1001.1.6 shall apply to new construction. Section 1001.1.7 shall apply to existing buildings.

IBC 1001.1.1 Applicability to all three elements. The general requirements specified in Sections 1003 through 1015 shall apply 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.

IBC **1001.1.2 Applicability to exit access.** The *exit access* shall comply with the applicable provisions of Sections 1003 through 1015. *Exit access* arrangement shall comply with Sections 1016 through 1021.

IBC **1001.1.3 Applicability to exits.** *Exits* shall comply with Sections 1022 through 1027 and the applicable requirements of Sections 1003 through 1015.

IBC **1001.1.4 Applicability to exit discharge.** *Exits* shall discharge in accordance with Section 1028.

IBC **1001.1.5 Applicability to assembly.** A room or space used for assembly purposes that contains seats, tables, displays, equipment or other material shall comply with Section 1029.

IBC **1001.1.6 Applicability to emergency escape and rescue openings.** In addition to the *means of egress* required by this chapter, *emergency escape and rescue openings* shall be provided in accordance with Section 1030.

IBC **1001.1.7 Applicability to maintenance and evacuation plans.** *Means of egress* shall be maintained in accordance with Section 1002. Fire safety and evacuation plans shall be provided in accordance with Section 1002.

IFC 1001.1 General. Buildings or portions thereof shall be provided with a *means of egress* system as required by this chapter. The provisions of this chapter shall control the design, construction and arrangement of *means of egress* components required to provide an *approved means of egress* from structures and portions thereof. Sections ~~1003 through 1030~~ 1001.1.1 through 1001.1.6 shall apply to new construction. Section ~~1031~~ 1001.1.7 ~~-~~shall apply to existing buildings.

Exception: Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories above grade plane in height with a separate means of egress and their accessory structures shall comply with the *International Residential Code*.

IFC 1001.1.1 Applicability to all three elements. The general requirements specified in Sections 1003 through 1015 shall apply 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.

IFC 1001.1.2 Applicability to exit access. The *exit access* shall comply with the applicable provisions of Sections 1003 through 1015. *Exit access* arrangement shall comply with Sections 1016 through 1021.

IFC 1001.1.3 Applicability to exits. *Exits* shall comply with Sections 1022 through 1027 and the applicable requirements of Sections 1003 through 1015.

IFC **1001.1.4 Applicability to exit discharge.** *Exits* shall discharge in accordance with Section 1028.

IFC 1001.1.5 Applicability to assembly. A room or space used for assembly purposes that contains seats, tables, displays, equipment or other material shall comply with Section 1029.

IFC 1001.1.6 Applicability to emergency escape and rescue openings. In addition to the *means of egress* required by this chapter, *emergency escape and rescue openings* shall be provided in accordance with Section 1030.

IFC 1001.1.7 Maintenance of the means of egress. The *means of egress* for buildings or portions thereof shall be maintained in accordance with Section 1031.

Reason: The intent is to provide general scoping for Chapter 10 in the IBC and IFC. The applicability of each section is only identified in Sections 1003, 1016, 1022, 1028, 1029, and 1030. Without the context at the beginning of other paragraphs, the user of the code may miss the applicability of a section, such as the applicability of Section 1010 applying to all means of egress. Stating at the beginning of the Chapter which sections apply for various parts of means of egress provides additional usability of the code.

1001.1.1 = 1003.1
1001.1.2 = 1016.1
1001.1.3 – 1022.1
1001.1.4 = 1028.1
1001.1.5 = 1029.1
1001.1.6 = 1030.1
1001.1.7 = 1031.1 (Fire Code) and 1002 (Building Code)

Proposal 5:

1010.1 Doors. Doors in the *means* ~~*Means of egress*~~ doors shall meet the requirements of ~~this section~~ Sections 1010.1.1 through 1010.1.3.4. Exterior exit doors shall also meet the requirements of ~~this section and~~ Section 1022.2. Gates in the means of egress shall meet the requirement of Section 1010.4 through 1010.4.1. Turnstiles in the means of egress shall meet the requirements of Section 1010.5 through 1010.5.4

Doors, gates, and turnstiles provided for egress purposes in numbers greater than required by this code shall meet the requirements of this section.

Doors in the *means* ~~*Means of egress*~~ doors shall be readily distinguishable from the adjacent construction and finishes such that the doors are easily recognizable as doors. Mirrors or similar reflecting materials shall not be used on *means of egress* doors. *Means of egress* doors shall not be concealed by curtains, drapes, decorations or similar materials.

1010.1.1 Size of doors.

1010.1.1.1 Projections into clear width.

1010.1.2 Door swing.

1010.1.2.1 Direction of swing.

1010.1.3 Door opening force.

1010.1.3.1 Location of applied forces.

1010.1.4 ~~1010.1.5~~ Floor elevation.

1010.1.5 ~~1010.1.6~~ Landings at doors.

1010.1.6 ~~1010.1.7~~ Thresholds.

1010.1.7 ~~1010.1.8~~ Door arrangement.

1010.2 ~~1010.1.9~~ Door operations. Except as specifically permitted by this section, egress doors shall be readily openable from the egress side without the use of a key or special knowledge or effort.

1010.2.1 ~~1010.1.9.6~~ Unlatching. The unlatching of any door or leaf shall not require more than one operation. **Exceptions:**

1. Places of detention or restraint.
2. Where manually operated bolt locks are permitted by Section 1010.2.6 ~~1010.1.9.5.~~
3. Doors with automatic flush bolts as permitted by Section 1010.2.5 ~~1010.1.9.4~~, Item 3.
4. Doors from individual *dwelling units* and *sleeping units* of Group R occupancies as permitted by Section 1010.2.5 ~~1010.1.9.4~~, Item 4.

1010.2.2 ~~1010.1.9.1~~ Hardware.

1010.2.3 ~~1010.1.9.2~~ Hardware height.

1010.2.4 ~~1010.1.9.4~~ Locks and latches.

1010.2.5 ~~1010.1.9.5~~ Bolt locks.

1010.2.6~~1010.1.9.6.1~~ Closet doors.

1010.2.7 ~~1010.1.9.12~~ Stairway doors.

1010.2.8 ~~1010.1.4.4~~ Locking arrangements in educational occupancies. In Group E and Group B educational occupancies, egress doors from classrooms, offices and other occupied rooms shall be permitted to be provided with locking arrangements designed to keep intruders from entering the room where all of the following conditions are met:

1. The door shall be capable of being unlocked from outside the room with a key or other approved means.
2. ~~The door shall be openable from within the room in accordance with Section 1010.1.9.~~
3. ~~.~~ Modifications shall not be made to listed *panic hardware*, fire door hardware or door closers.

1010.2.8.1 ~~1010.1.4.4.1~~ Remote operation of locks.

1010.2.9 ~~1010.1.10~~ Panic and fire exit hardware.

1010.2.9.1 ~~1010.1.10.1~~ Installation.

1010.2.9.2 ~~1010.1.10.2~~ Balanced doors.

1010.2.10 ~~1010.1.9.3~~ Monitored or recorded egress.

1010.2.11 ~~1010.1.9.10~~ Door hardware release of electrically locked egress doors.

1010.2.12 ~~1010.1.9.9~~ Sensor release of electrically locked egress doors.

1010.2.13 ~~1010.1.9.8~~ Delayed egress.

1010.2.13.1 ~~1010.1.9.8.1~~ Delayed egress locking system.

1010.2.14 ~~1010.1.9.7~~ Controlled egress doors in Groups I-1 and I-2.

1010.2.15 ~~1010.1.9.11~~ Locking arrangements in buildings within correctional facilities.

1010.3 ~~1010.1.4~~ Special doors. Special doors and security grilles shall comply with the requirements of Sections 1010.1.4.1 through 1010.1.4.5.

1010.3.1 ~~1010.1.4.1~~ Revolving doors.

1010.3.1.1 ~~1010.1.4.1.1~~ Egress component.

1010.3.1.2 ~~1010.1.4.1.2~~ Other than egress component.

1010.3.2 ~~1010.1.4.2~~ Power-operated doors.

1010.3.3 ~~1010.1.4.3~~ Special purpose horizontal sliding, accordion or folding doors

1010.3.4 ~~1010.1.4.5~~ Security grilles.

1010.4 ~~1010.2~~ Gates.

1010.4.1 ~~1010.2.1~~ Stadiums.

1010.5 ~~1010.3~~ Turnstiles and similar devices.

1010.5.1 ~~1010.3.1~~ Capacity.

1010.5.1.1 ~~1010.3.1.1~~ Clear width.

1010.5.2 ~~1010.3.2~~ Security access turnstiles.

1010.5.3 ~~1010.3.3~~ High turnstile.

1010.5.4 ~~1010.3.4~~ Additional door.

Reason/Logic: This is a reorganization of the door section to group like items together. There is not intended to be any technical changes**.**

- Start in 1010.1 by recognizing that this section covers doors, gates and turnstiles. Clean up the reference to Section 1022.2 to be more specific.
- List all door requirements – 1010.1.1 through 1010.1.7
- Separate out door hardware requirements from the doors themselves – new section 1010.2
- Relocate unlatching as generic requirement to beginning of hardware section – relocate to 1010.2.1
- Group hardware requirements – height, monitoring, locks, bolt locks, sensor release, door hardware release
  - Group requirements for special safety concerns – closets, stairways, locking in schools, panic hardware. (The school criteria is currently under specials doors – this is definitely a locking criteria. With the new location, Item 2 is not needed).
  - Moved all the electrical locking arrangements (other than I-3 correctional facilities) to be next to each other, and ordered from most common to least common. Put the monitored or recorded egress section prior to these 4 electrical locking sections because monitored or recorded egress would almost exclusively be used with one of the electrical locking arrangements.
- Group Special doors: revolving, power operated, horizontal sliding security grills – new section 1010.3
- Renumber gates and turnstiles.

IBC 4-3 and 2-3

Notes 11-20-2017: In progress. An atrium as an exit has too many issues (measurement of travel distance, no travel through one exit to get to another, nothing in the exit except for MOE, stand pipe locations). Work group looking at options for exit access stairways in an atrium.

Questions:

- Is an open stairway in an atrium an exit stairway or an exit access stairway? Exit access stairway
- Is an atrium with an open stairway, by virtue of smoke protection, provides the same level of protection as a rated stairway enclosure?
- How should the travel distance be measure on those stairways? To the top of the stairways similar to open parking garages? Down the stairway to the exit below? If down the stairway, should this be permitted for more than one story?

There are three options proposed. Supporting information after the options.

Option 1:

Travel distance is down the stairway one story and then to an exit (current text for exit access stairways)

404.8 Exit access travel distance. *Exit access* travel distance for areas open to an *atrium* shall comply with the requirements of this section.

404.8.1 Egress not through the atrium. Where required access to the *exits* is not through the *atrium*, *exit*

access travel distance shall comply with Section 1017.

404.8.2 Exit access travel distance at the level of exit discharge. Where the path of egress travel is through an *atrium* space, *exit access* travel distance at the *level of exit discharge* shall be ~~determined in accordance~~ comply with Section 1017.

404.8.3 Exit access travel distance at other than the level of exit discharge. Where the path of egress travel is not at the *level of exit discharge* ~~from the *atrium*~~, that portion of the total permitted *exit access* travel distance that occurs within the *atrium* shall be not greater than 200 feet (60 960 mm). Travel distance shall be measured in accordance with Sections 1006.3 and 1017.3.

1006.3 Egress from stories or occupied roofs. The *means of egress* system serving any *story* or occupied roof shall be provided with the number of separate and distinct *exits* or access to *exits* based on the aggregate *occupant load* served in accordance with this section. Where stairways serve more than one story, only the occupant load of each story considered individually shall be used in calculating the required number of exits or access to *exits* serving that story.

1006.3.1 Adjacent story. 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 or 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 in open parking garages that serve only the parking garage.
4. Exit access stairways and ramps serving open-air assembly seating complying with the exit access travel distance requirements of Section 1029.7.
5. 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.

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*.

Exception: In *open parking garages*, *exit access* travel distance is permitted to be measured to the closest riser of an *exit access stairway* or the closest slope of an *exit access ramp*.

1017.3.1 Exit access stairways and ramps. Travel distance on *exit access stairways* or *ramps* shall be included in the *exit access* travel distance measurement. The measurement along *stairways* shall be made on a plane parallel and tangent to the *stair* tread *nosings* in the center of the *stair* and landings. The measurement along *ramps* shall be made on the walking surface in the center of the *ramp* and landings.

1023.2 Construction. Enclosures for *interior exit stairways* and *ramps* shall be constructed as *fire barriers* in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. *Interior exit stairway* and *ramp* enclosures shall have a *fire-resistance rating* of not less than 2 hours where connecting four stories or more and not less than 1 hour where connecting less than four stories. The number of stories connected by the *interior exit stairways* or *ramps* shall include any *basements*, but not any *mezzanines*. *Interior exit stairways* and *ramps* shall have a *fireresistance rating* not less than the floor assembly penetrated, but need not exceed 2 hours.

Exception~~s~~:

~~1.~~ *Interior exit stairways* and *ramps* in Group I-3 occupancies in accordance with the provisions of Section 408.3.8.

~~2. *Interior exit stairways* within an *atrium* enclosed in accordance with Section 404.6.~~

Option 2

Travel distance for 200 feet (currently in atrium provisions) which could be multiple floors

404.9 Exit access travel distance. *Exit access* travel distance for areas open to an *atrium* shall comply with the requirements of this section.

404.9.1 Egress not through the atrium. Where required access to the *exits* is not through the *atrium*, *exit access* travel distance shall comply with Section 1017.

404.9.2 Exit access travel distance at the level of exit discharge. Where the path of egress travel is through an *atrium* space, *exit access* travel distance at the *level of exit discharge* shall ~~be determined in accordance~~ comply with Section 1017.

404.9.3 Exit access travel distance at other than the level of exit discharge. Where the path of egress travel is not at the *level of exit discharge* ~~from the *atrium*~~, that portion of the total permitted *exit access* travel distance that occurs within the *atrium* shall be not greater than 200 feet (60 960 mm). Travel distance shall be measured in accordance with Sections 1006.3 and 1017.3.

1006.3 Egress from stories or occupied roofs. The *means of egress* system serving any *story* or occupied roof shall be provided with the number of separate and distinct *exits* or access to *exits* based on the aggregate *occupant load* served in accordance with this section. Where stairways serve more than one story, only the occupant load of each story considered individually shall be used in calculating the required number of exits or access to *exits* serving that story.

1006.3.1 Adjacent story. 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 or 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 the provisions of Section 404.
4. Exit access stairways and ramps in open parking garages that serve only the parking garage.
5. Exit access stairways and ramps serving open-air assembly seating complying with the exit access travel distance requirements of Section 1029.7.
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.

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*.

Exception: In *open parking garages*, *exit access* travel distance is permitted to be measured to the closest riser of an *exit access stairway* or the closest slope of an *exit access ramp*.

1017.3.1 Exit access stairways and ramps. Travel distance on *exit access stairways* or *ramps* shall be included in the *exit access* travel distance measurement. The measurement along *stairways* shall be made on a plane parallel and tangent to the *stair* tread *nosings* in the center of the *stair* and landings. The measurement along *ramps* shall be made on the walking surface in the center of the *ramp* and landings.

1023.2 Construction. Enclosures for *interior exit stairways* and *ramps* shall be constructed as *fire barriers* in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. *Interior exit stairway* and *ramp* enclosures shall have a *fire-resistance rating* of not less than 2 hours where connecting four stories or more and not less than 1 hour where connecting less than four stories. The number of stories connected by the *interior exit stairways* or *ramps* shall include any *basements*, but not any *mezzanines*. *Interior exit stairways* and *ramps* shall have a *fireresistance rating* not less than the floor assembly penetrated, but need not exceed 2 hours.

Exception~~s~~:

~~1.~~ *Interior exit stairways* and *ramps* in Group I-3 occupancies in accordance with the provisions of Section 408.3.8.

~~2. *Interior exit stairways* within an *atrium* enclosed in accordance with Section 404.6.~~

Option 3

Travel distance to the top of the stairways. This would be consistent with the allowance for open parking garages and the intent of what is in Section 1023.2 Exp. 2.

404.10 Exit access travel distance. *Exit access* travel distance for areas open to an *atrium* shall comply with the requirements of this section.

404.10.1 Egress not through the atrium. Where required access to the *exits* is not through the *atrium*, *exit access* travel distance shall comply with Section 1017.

404.10.2 Exit access travel distance at the level of exit discharge. Where the path of egress travel is through an *atrium* space, *exit access* travel distance at the *level of exit discharge* shall be determined in accordance with Section 1017.

404.10.3 Exit access travel distance at other than the level of exit discharge. Where the path of egress travel is not at the *level of exit discharge* from the *atrium*, that portion of the total permitted *exit access* travel distance that occurs within the *atrium* shall be not greater than 200 feet (60 960 mm). Travel distance shall be measured in accordance with Sections 1006.3 and 1017.3.

1006.3 Egress from stories or occupied roofs. The *means of egress* system serving any *story* or occupied roof shall be provided with the number of separate and distinct *exits* or access to *exits* based on the aggregate *occupant load* served in accordance with this section. Where stairways serve more than one story, only the occupant load of each story considered individually shall be used in calculating the required number of exits or access to *exits* serving that story.

1006.3.1 Adjacent story. 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 or 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 the provisions of Section 404.
4. Exit access stairways and ramps in open parking garages that serve only the parking garage.
5. Exit access stairways and ramps serving open-air assembly seating complying with the exit access travel distance requirements of Section 1029.7.
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.

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*.

Exceptions:

1. Within atriums, exit access travel distance is permitted to be measured to the closest riser of an exit access stairway or the closest slope of an exit access ramp.
2. In *open parking garages*, *exit access* travel distance is permitted to be measured to the closest riser of an *exit access stairway* or the closest slope of an *exit access ramp*.

1017.3.1 Exit access stairways and ramps. Travel distance on *exit access stairways* or *ramps* shall be included in the *exit access* travel distance measurement. The measurement along *stairways* shall be made on a plane parallel and tangent to the *stair* tread *nosings* in the center of the *stair* and landings. The measurement along *ramps* shall be made on the walking surface in the center of the *ramp* and landings.

1023.2 Construction. Enclosures for *interior exit stairways* and *ramps* shall be constructed as *fire barriers* in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. *Interior exit stairway* and *ramp* enclosures shall have a *fire-resistance rating* of not less than 2 hours where connecting four stories or more and not less than 1 hour where connecting less than four stories. The number of stories connected by the *interior exit stairways* or *ramps* shall include any *basements*, but not any *mezzanines*. *Interior exit stairways* and *ramps* shall have a *fireresistance rating* not less than the floor assembly penetrated, but need not exceed 2 hours.

Exception~~s~~:

~~1.~~ *Interior exit stairways* and *ramps* in Group I-3 occupancies in accordance with the provisions of Section 408.3.8.

~~2. *Interior exit stairways* within an *atrium* enclosed in accordance with Section 404.6.~~

Notes:

Issue with current text: Allowance for open stairway in a smoke protected atrium in Section 1023.2 to be considered an 'exit stairway' is in conflict with the definition of 'atrium' and with the general concept of all open stairways being considered 'exit access stairways'. Section 1019.3 says open stairways in atriums is an 'exit access stairway', so the same stairway is called two different things in the code. Since this concept for open stairway being always called 'exit access stairway' is in open parking garages, in outdoor assembly seating and within dwelling unit, these proposals on based on that the work from CTC for open stairways should stay consistent.

In conclusion, the open stairway in the atrium is an open exit access stairway.

There are three options offered for how to measure travel distance. Travel distance portions are highlighted below. **See below the 2018 related text for proposals.**

Option 1 – travel distance is down the stairway one story and then to an exit (current text for exit access stairways)

Option 2 – travel distance for 200 feet (currently in atrium provisions) which could be multiple floors

Option 3 – travel distance to the top of the stairways. This would be consistent with the allowance for open parking garages and the intent of what is in Section 1023.2 Exp. 2.

2018 IBC draft text related to open stairways in atriums.

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

[BE] INTERIOR EXIT STAIRWAY. An *exit* component that serves to meet one or more *means of egress* design requirements, such as required number of *exits* or *exit access* travel distance, and provides for a protected path of egress travel to the *exit discharge* or *public way.*

[BE] EXIT ACCESS STAIRWAY. A *stairway* with the exit access portion of the means of egress system.

SECTION 404 ATRIUMS

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

404.2 Smoke control. A smoke control system shall be installed in accordance with Section 909.

Exception: In other than Group I-2, and Group I-1, Condition 2, smoke control is not required for *atriums* that connect only two *stories*.

404.5 Enclosure of atriums. *Atrium* spaces shall be separated from adjacent spaces by a 1-hour *fire barrier* constructed in accordance with Section 707 or a *horizontal assembly* constructed in accordance with Section 711, or both.

Exceptions:

1. A *fire barrier* is not required where a glass wall forming a smoke partition is provided. The glass wall shall comply with all of the following:
    1.1. Automatic sprinklers are provided along both sides of the separation wall and doors, or on the room side only if there is not a walkway on the *atrium* side. The sprinklers shall be located between 4 inches and 12 inches (102 mm and 305 mm) away from the glass and at intervals along the glass not greater than 6 feet (1829 mm). The sprinkler system shall be designed so that the entire surface of the glass is wet upon activation of the sprinkler system without obstruction;
    1.2. The glass wall shall be installed in a gasketed frame in a manner that the framing system deflects without breaking (loading) the glass before the sprinkler system operates; and
    1.3. Where glass doors are provided in the glass wall, they shall be either *self-closing* or automatic-closing.
2. A *fire barrier* is not required where a glass-block wall assembly complying with Section 2110 and having a $^{3}/_{4}$-hour *fire protection rating* is provided.
3. A *fire barrier* is not required between the *atrium* and the adjoining spaces of up to three floors of the *atrium* provided such spaces are accounted for in the design of the smoke control system.
4. A fire barrier is not required between the atrium and the adjoining spaces where the atrium is not required to be provided with a smoke control system.

404.11 Exit access travel distance. *Exit access* travel distance for areas open to an *atrium* shall comply with the requirements of this section.

404.11.1 Egress not through the atrium. Where required access to the *exits* is not through the *atrium*, *exit access* travel distance shall comply with Section 1017.

404.11.2 Exit access travel distance at the level of exit discharge. Where the path of egress travel is through an *atrium* space, *exit access* travel distance at the *level of exit discharge* shall be determined in accordance with Section 1017.

404.11.3 Exit access travel distance at other than the level of exit discharge. Where the path of egress travel is not at the *level of exit discharge* from the *atrium*, that portion of the total permitted *exit access* travel distance that occurs within the *atrium* shall be not greater than 200 feet (60 960 mm).

404.12 Interior exit stairways. A maximum of 50 percent of *interior exit stairways* are permitted to egress through an *atrium* on the *level of exit discharge* in accordance with Section 1028.

SECTION 1006
NUMBER OF EXITS AND
EXIT ACCESS DOORWAYS

1006.1 General. The number of *exits* or *exit access doorways* required within the *means of egress* system shall comply with the provisions of Section 1006.2 for spaces, including *mezzanines*, and Section 1006.3 for *stories* or occupied roofs.

(E16-15 AM, E25-15 AM, E27-15 AS) 1006.3 Egress from stories or occupied roofs. The *means of egress* system serving any *story* or occupied roof shall be provided with the number of separate and distinct *exits* or access

to *exits* based on the aggregate *occupant load* served in accordance with this section. Where stairways serve more than one story, only the occupant load of each story considered individually shall be used in calculating the required number of exits or access to *exits* serving that story.

(E27-15 AS) 1006.3.1 Adjacent story. 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 or 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 in open parking garages that serve only the parking garage.
4. Exit access stairways and ramps serving open-air assembly seating complying with the exit access travel distance requirements of Section 1029.7.
5. 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.

SECTION 1017
EXIT ACCESS TRAVEL DISTANCE

1017.1 General. Travel distance within the *exit access* portion of the *means of egress* system shall be in accordance with this section.

1017.2 Limitations. *Exit access* travel distance shall not exceed the values given in Table 1017.2.

(E23-15 AS, G133-15 AM) TABLE 1017.2
EXIT ACCESS TRAVEL DISTANCE[a]

OCCUPANCY	WITHOUT SPRINKLER SYSTEM (feet)	WITH SPRINKLER SYSTEM (feet)
A, E, F-1, M, R, S-1	200[e]	250[b]
I-1	Not Permitted	250[b]
B	200	300[c]
F-2, S-2, U	300	400[c]
H-1	Not Permitted	75[d]
H-2	Not Permitted	100[d]
H-3	Not Permitted	150[d]
H-4	Not Permitted	175[d]
H-5	Not Permitted	200[c]
I-2, I-3~~, I-4~~	Not Permitted	200[c]
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 404.8: For the distance limitation through an atrium space.
Section 407.4: For the distance limitation in Group I-2.
Sections 408.6.1 and 408.8.1: For the distance limitations in Group I-3.
Section 411.3: For the distance limitation in special amusement buildings.
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 1006.3.3: For buildings with one exit.
Section 1017.2.2: For increased distance limitation in Groups F-1 and S-1.
Section 1029.7: For increased limitation in assembly seating.
Section 3103.4: For temporary structures.
Section 3104.9: For pedestrian walkways.

b. Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where *automatic sprinkler systems* are permitted in accordance with Section 903.3.1.2.
c. Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
d. Group H occupancies equipped throughout with an *automatic sprinkler system* in accordance with Section 903.2.5.1.
e. Group R-3 and R-4 buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.3. See Section 903.2.8 for occupancies where automatic sprinkler systems are permitted in accordance with Section 903.3.1.3.

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 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.

(E100-15 AS) 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*.

Exception: In *open parking garages*, *exit access* travel distance is permitted to be measured to the closest riser of an *exit access stairway* or the closest slope of an *exit access ramp*.

1017.3.1 Exit access stairways and ramps. Travel distance on *exit access stairways* or *ramps* shall be included in the *exit access* travel distance measurement. The measurement along *stairways* shall be made on a plane parallel and tangent to the *stair* tread *nosings* in the center of the *stair* and landings. The measurement along *ramps* shall be made on the walking surface in the center of the *ramp* and landings.

SECTION 1019
EXIT ACCESS STAIRWAYS AND RAMPS

1019.1 General. *Exit access stairways* and *ramps* serving as an *exit access* component in a *means of egress* system shall comply with the requirements of this section. The number of stories connected by *exit access stairways* and *ramps* shall include *basements*, but not *mezzanines*.

1019.2 All occupancies. *Exit access stairways* and *ramps* that serve floor levels within a single story are not required to be enclosed.

(E104-15 AS, E132-15 AS) 1019.3 Occupancies other than Groups I-2 and I-3. In other than Group I-2 and I-3 occupancies, floor openings containing *exit access stairways* or *ramps* that do not comply with one of the conditions listed in this section shall be enclosed with a shaft enclosure constructed in accordance with Section 713.

1. *Exit access stairways* and *ramps* that serve or atmospherically communicate between only two stories. Such interconnected stories shall not be open to other stories.
2. In Group R-1, R-2 or R-3 occupancies, *exit 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 1029.7.
8. *Exit access stairways* and *ramps* ~~serving~~ 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.

1019.4 Group I-2 and I-3 occupancies. In Group I-2 and I-3 occupancies, floor openings between stories containing *exit access stairways* or *ramps* are required to be enclosed with a shaft enclosure constructed in accordance with Section 713.

Exception: In Group I-3 occupancies, *exit access stairways* or *ramps* constructed in accordance with Section 408 are not required to be enclosed.

SECTION 1023
INTERIOR EXIT STAIRWAYS AND RAMPS

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 1028.1. An *interior exit stairway* or *ramp* shall not be used for any purpose other than as a *means of egress* and a circulation path.

1023.2 Construction. Enclosures for *interior exit stairways* and *ramps* shall be constructed as *fire barriers* in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. *Interior exit stairway* and *ramp* enclosures shall have a *fire-resistance rating* of not less than 2 hours where connecting four stories or more and not less than 1 hour where connecting less than four stories. The number of stories connected by the *interior exit stairways* or *ramps* shall include any *basements*, but not any *mezzanines*. *Interior exit stairways* and *ramps* shall have a *fireresistance rating* not less than the floor assembly penetrated, but need not exceed 2 hours.

Exceptions:

1. *Interior exit stairways* and *ramps* in Group I-3 occupancies in accordance with the provisions of Section 408.3.8.
2. *Interior exit stairways* within an *atrium* enclosed in accordance with Section 404.6.

BCAC – General 05

See Separate report from A117.1/IBC coordination work group

IBC 2-2

Coordination of IEBC and IBC
Single exit tables

Note: Complete history of this term was provided to the MOE work group in a separate document.
Note 10-4-2017: passed, move ahead as is.

COMMON PATH OF EGRESS TRAVEL. That portion of the *exit access* travel distance measured from the most remote point within a *story* to that point where the occupants have separate access to two *exits* or *exit access* doorways.

EXIT ACCESS. That portion of a *means of egress* system that leads from any occupied portion of a building or structure to an *exit*.

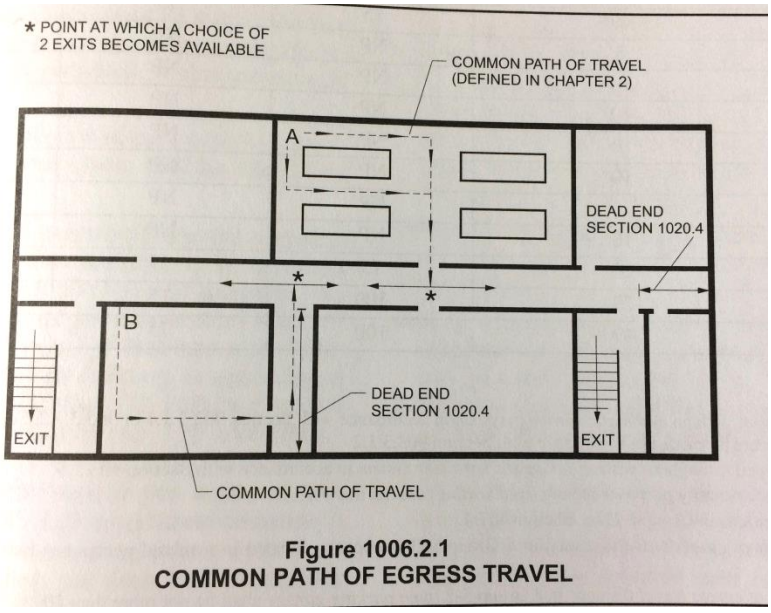

Figure 1006.2.1
COMMON PATH OF EGRESS TRAVEL

1006.3.3 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 ~~common path of egress~~ exit access travel distance does not exceed the values in Table 1006.3.3(1) or 1006.3.3(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*.

TABLE 1006.3.3(1)
STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT FOR R-2 OCCUPANCIES

STORY	OCCUPANCY	MAXIMUM NUMBER OF DWELLING UNITS	MAXIMUM ~~COMMON PATH OF EGRESS~~ EXIT ACCESS TRAVEL DISTANCE
Basement, first, second or third story above grade plane	R-2[a, b]	4 dwelling units	125 feet
Fourth story above grade plane and higher	NP	NA	NA

For SI: 1 foot = 3048 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 1030.
b. This table is used for R-2 occupancies consisting of *dwelling units*. For R-2 occupancies consisting of *sleeping units*, use Table 1006.3.3(2).

TABLE 1006.3.3(2)
STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT FOR OTHER OCCUPANCIES

STORY	OCCUPANCY	MAXIMUM OCCUPANT LOAD PER STORY	MAXIMUM ~~COMMON PATH OF EGRESS~~ EXIT ACCESS TRAVEL DISTANCE (feet)
First story above or below grade plane	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 1030.
b. 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 1006.3.3(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: There is a conflict in terms for single exit criteria for stories/buildings in the IBC and IEBC. Below is the definition for common path of egress travel and exit access. Single exit stories/buildings cannot have a common path of egress travel since two exits are not ever required. The correct term is exit access travel distance. This would be consistent with the single exit tables for stories in the IEBC and the footnotes for the single exit tables for stories (1006.3) in the IBC. With the text incorrectly used in IBC Section 1006.3.3, if a single exit building uses an enclosed exit stairway, the travel distance to a place where there are two exits is the ground floor. Exit access travel distance should stop at the door to the exit stairway. See after the proposal for the history in the terms in the single exit stories/buildings requirements. The term "common path of travel" is appropriate in the single exit space provisions in Section 1006.2.

Note: The following IEBC text is provided for information

IEBC (Level 2 alteration)

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

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

TABLE 805.3.1.1(1)
STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT FOR R-2 OCCUPANCIES

STORY	OCCUPANCY	MAXIMUM NUMBER	MAXIMUM EXIT

		OF DWELLING UNITS	ACCESS TRAVEL DISTANCE
Basement, First or second story above grade plane	R-2[2]	4 dwelling units	50 feet
Third story above grade plane and higher	NP	NA	NA

For SI: 1 foot=3048
NP=Not Permitted.
NA=Not Applicable.

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

TABLE 805.3.1.1(2)
STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT FOR OTHER OCCUPANCIES

STORY	OCCUPANCY	MAXIMUM OCCUPANTS LOAD PER STORY	MAXIMUM EXIT ACCESS TRAVEL DISTANCE (feet)
First story above or below grade plane	B, F-2, S-2[a]	35	75
Second story above grade plane	B, F-2, S-2[a]	35	75
Third story above grade plane and higher	NP	NA	NA

For SI: 1 foot = 304.8mm.
NP=Not Permitted
NA=Not Applicable

a. The length of exit access travel distance in a Group S-2 open parking garage shall be not more than 100 feet (30 480mm).

IBC 10-4/IRC 3-1
Proposal 1:

IBC
EMERGENCY ESCAPE AND RESCUE OPENING. An operable exterior window, door or other similar device that provides for a means of escape and access for rescue in the event of an emergency.

IRC
[RB] EMERGENCY ESCAPE AND RESCUE OPENING. An operable exterior window, door or similar device that provides for a means of escape and access for rescue in the event of an emergency.

IFC
[BE] EMERGENCY ESCAPE AND RESCUE OPENING. An operable exterior window, door or other similar device that provides for a means of escape and access for rescue in the event of an emergency.

IEBC
[BE] EMERGENCY ESCAPE AND RESCUE OPENING. An operable exterior window, door or other similar device that provides for a means of escape and access for rescue in the event of an emergency.

IPMC
[BE] EMERGENCY ESCAPE AND RESCUE OPENING. An operable exterior window, door or other similar device that provides for a means of escape and access for rescue in the event of an emergency.

Reason: Coordinate the definitions for emergency escape and rescue openings between IBC, IRC, IEBC, IPMC, IFC.

Proposal 2:

IBC
GRADE FLOOR EMERGENCY ESCAPE AND RESCUE OPENING. ~~A window or other~~ An *emergency escape and rescue opening* located such that the ~~sill height of the~~ bottom of the clear opening is not more than 44 inches (1118 mm) above or below the finished ground level adjacent to the opening.

IRC
GRADE FLOOR EMERGENCY ESCAPE AND RESCUE OPENING. ~~A window or other~~ An *emergency escape and rescue opening* located such that the ~~sill height of the~~ bottom of the clear opening is not more than 44 inches (1118 mm) above or below the finished ground level adjacent to the opening.

Reason: Revise defined term to that used in technical criteria (this term is only used for emergency escape and rescue openings). What is a 'sill' is not clear – change for consistency with technical criteria. Need to indicate that this is to the bottom of the opening (otherwise a below grade window could be very deep). See also revisions to IBC 1030.2 and IRC R310.2.1.

Proposal 3:

IFC
403.10.3.6 Resident participation in drills. Emergency evacuation drills shall involve the actual evacuation of residents to a selected assembly point and shall provide residents with experience in exiting through all required exits. All required exits shall be used during emergency evacuation drills.

Exception: Actual exiting from emergency escape and rescue ~~windows~~ openings shall not be required. Opening the emergency escape and rescue ~~windows~~ openings and signaling for help shall be an acceptable alternative.

Reason: This is only under fire and safety plans for Group R-4. IFC 403.10.3.6 says "window" instead of opening. This should be revised to use the defined term. This also addresses situations such as balcony doors instead of windows.

Proposal 4:

IBC
(High-rise) ~~403.5.6 Emergency escape and rescue.~~ ~~Emergency escape and rescue openings specified in Section 1030 are not required~~.

Reason: EERO not required for highrises in 1030.1, so exception not needed in 403.

Proposal 5:

11-20-2017: Per last BCAC meeting, add door out of basement option to IRC. Work group currently discussing storm shelter exception language.

IBC
1030.1 ~~General~~ 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 1006.3.3(1) and 1006.3.3(2)
2. Group R-3 and R-4 occupancies.

Basements and sleeping rooms below the fourth story above *grade plane* shall have no fewer than one ~~exterior~~ *emergency escape and rescue opening* in accordance with this section. Where *basements* contain one or more sleeping rooms, an *emergency escape and rescue openings~~s~~* 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 ~~exit~~ egress balcony that opens to a *public way*.
3. *Basements* ~~without *habitable spaces* and~~ having not more than 200 square feet (18.6 m^2) 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.
4. 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:
    4.1. One means of egress and one *emergency escape and rescue opening*
    4.2. Two means of egress.

IRC

SECTION R310
EMERGENCY ESCAPE AND RESCUE OPENINGS

R310.1 ~~Emergency escape and rescue opening~~ Where required.

Basements, habitable attics and every sleeping room shall have ~~not less~~ no fewer than one ~~operable~~ 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*. ~~Emergency escape and rescue~~ 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*, or that opens to a *public way*.
2. ~~Storm shelters and~~ *basements* used only to house mechanical *equipment* not exceeding a total floor area of 200 square feet (18.58 m^2) 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.

2. Where the *dwelling* or *townhouse* is equipped with an automatic sprinkler system installed in accordance with Section P2904, sleeping rooms in *basements* shall not be required to have emergency escape and rescue openings provided that the *basement* has one of the following:
   2.1. One means of egress complying with Section R311 and one emergency escape and rescue opening.
   2.2. Two means of egress complying with Section R311.

Reason: This is a series of changes to coordinate the provisions for emergency escape and rescue openings.

- The definition includes 'exterior' and 'operable', so it does not need to be repeated.
- Only the IRC define 'habitable attic'. If added to the IBC, would the IBC also have to pick up the definition and the number of stories below the habitable attic space? (the IRC definition says this is not a story).
- IRC coordination for basement areas outside of bedrooms.
- IRC new exception 1 – coordination with IBC. Provide exemption for basements that have low ceilings.
- IBC Exception 2 not needed since doors are an emergency escape and rescue opening.
- IBC Exception 3 – coordination with IRC, limit is just size without additional criteria for habitable.
- Split out storm shelters in IRC and add to IBC. Reference ICC 500 so that the escape openings provided are what is specified for storm shelters.
- Make all exceptions in IRC clear on what is exempted.

Proposal 6:

11-201-2017: Work group is looking at if "special knowledge" should be added to IBC vs. taking out of IRC

IBC

1030.1.1 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 ~~complying with ASTM F 2090 shall be permitted for use~~ on windows serving as a required emergency escape and rescue opening shall comply with ASTM F2090.

IRC

R310.1.1 Operational constraints and opening control devices. Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys~~,~~ or tools ~~or special knowledge~~. Window opening control devices on windows serving as a required emergency escape and rescue opening shall comply with ASTM F2090.
IRC

Reason: This is a series of changes to coordinate the provisions for emergency escape and rescue openings.
IBC - Last sentence reworded as a requirement to be consistent with IRC
IRC – This tem was removed from IBC because the phrase "special knowledge' is too open for interpretations.

Proposal 7:

IBC
1030.2 Minimum size. *Emergency escape and rescue openings* shall have a minimum net clear opening of 5.7 square feet (0.53 m^2).

Exception: The minimum net clear opening for *grade-floor emergency escape and rescue openings* shall be 5 square feet (0.46 m^2).

1030.2.1 Minimum dimensions. The minimum net clear opening height dimension shall be 24 inches (610 mm). The minimum net clear opening width dimension shall be 20 inches (508 mm). The net clear opening dimensions shall be the result of normal operation of the opening.

1030.~~3~~2.2 Maximum height from floor. Where a window is provided as the *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.

IRC
~~**R310.2 Emergency escape and rescue openings.** Emergency escape and rescue openings shall have minimum dimensions as specified in this section.~~

R310.2~~.1~~ Minimum ~~opening area~~ size. Emergency and escape rescue openings shall have a net clear opening of not less than 5.7 square feet (0.530 m^2). ~~The net clear opening dimensions required by this section shall be obtained by the normal operation of the emergency escape and rescue opening from the inside. The net clear height of the opening shall be not less than 24 inches (610 mm) and the net clear width shall be not less than 20 inches (508 mm).~~

Exception: ~~*Grade* floor or below *grade* openings shall have a net clear opening area of not less than~~ The minimum net clear opening for *grade-floor emergency escape and rescue openings* shall be 5 square feet (0.465 m^2).

R310.2.1 Minimum dimensions. The minimum net clear opening height dimension shall be 24 inches (610 mm). The minimum net clear opening width dimension shall be 20 inches (508 mm). The net clear opening dimensions shall be the result of normal operation of the opening.

R310.2.2 ~~Window sill~~ Maximum height from floor. Where a window is provided as the emergency escape and rescue openings~~, it~~ such window shall have ~~a sill height of not more~~ the bottom of the clear opening not greater than 44 inches (1118 mm) above the floor; ~~where the sill~~

~~height is below *grade*, it shall be provided with a window well in accordance with Section R310.2.3.~~

Reason: This is a series of changes to coordinate the provisions for emergency escape and rescue openings. This proposal deals with Minimum size, dimensions and height.
IBC: 310.3 – revise to coordinate language and organization with the IRC.
IRC:

- R310.2 - Not needed when sections below revised.
- R310.2.1 - IRC text relocated to subsection (new 310.2.1). IRC exception does not need to say 'below grade' as this could be considered a conflict with the definition (i.e., 44" above or below finished grade). Note: If the intent is to allow for a 5 sq.ft. opening in basement levels that do not meet the definition, the definition and exception needs to be revised.
- R310.2.2 - The IRC should clarify that the 44" is to the bottom of the opening. The sill can be interpreted a lot of different ways. Move window well requirement into next section.

Proposal 8:

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

IRC
R310.3 Emergency escape and rescue doors. Where a door is provided as the required emergency escape and rescue opening, it shall be a side-~~hinged~~ swinging door or a ~~slider~~ sliding door. ~~Where the opening is below the adjacent grade, it shall be provided with an area well.~~

~~**R310.3.1 Minimum door opening size.** The minimum net clear height opening for any door that serves as an emergency and escape rescue opening shall be in accordance with Section R310.2.1.~~
IRC

~~**R310.3.2 Area Wells.** Area wells shall have a width of not less than 36 inches (914 mm). The area of the area well shall allow the emergency escape and rescue door to be fully opened.~~

~~**R310.3.2.1 Ladder and steps.** Area wells with a vertical depth greater than 44 inches (1118 mm) shall be equipped with a permanently affixed ladder or steps usable with the door in the fully open position. Ladders or steps required by this section shall not be required to comply with Sections R311.7. Ladders or rungs shall have an inside width of not less than 12 inches (305 mm), shall project not less than 3 inches (76 mm) from the wall and shall be spaced not more than 18 inches (457 mm) on center vertically for the full height of the exterior stairwell.~~

~~**R310.3.2.2 Drainage.** Area wells shall be designed for proper drainage by connecting to the building's foundation drainage system required by Section R405.1 or by an *approved* alternative method.~~

~~**Exception:** A drainage system for area wells is not required where the foundation is on well-drained soil or sand-gravel mixture soils in accordance with the United Soil Classification System, Group I Soils, as detailed in Table R405.1.~~

Reason: This is a series of changes to coordinate the provisions for emergency escape and rescue openings. This proposal deals with doors used as emergency escape and rescue openings. IBC and IRC have different phrases for types of doors. Rather than totally separate requirements for doors and windows, use the same criteria as much as possible. That is literally what the current text does, but with a lot of duplication.
IRC Section R310.3.1 - You already have the size applicable for all emergency escape and rescue openings, so not needed. Plus, the reference would literally allow for a 24 inch high door. IRC 311.2 does allow for doors that are of any size unless it is the one egress door for the dwelling.
The requirements for areas wells at doors are a repeat of window wells – Proposal to IBC1030.4 and R310.2.3 changes the name to area wells, and then requirements don't need to be repeated.

Proposal 9:

11-20-2017: Committee still discussing section on drainage. Also, should "special knowledge be kept for bars and grills?

IBC

1030.4 ~~Window~~ Area wells. An *emergency escape and rescue opening* with ~~a finished sill height~~ the bottom of the clear opening below the adjacent ~~ground level~~ grade shall be provided with ~~a window~~ an area well in accordance with Sections 1030.4.1 ~~and~~ through 1030.~~4.2~~4.4.

1030.4.1 Minimum size. The minimum horizontal area of the ~~window~~ area well shall be 9 square feet (0.84 m^2), with a ~~minimum dimension of~~ horizontal projection and width of not less than 36 inches (914 mm). The ~~area of the window~~ area well shall allow the *emergency escape and rescue opening* to be fully opened.

Exception: The ladder or steps required by Section 1030.4.2.1 shall be permitted to encroach not more than 6 inches (152 mm) into the required dimensions of the area well.

1030.4.2 Ladders or steps. ~~Window~~ Area wells with a vertical depth of more than 44 inches (1118 mm) shall be equipped with an *approved* permanently affixed ladder or steps. ~~Ladders or rungs shall have an inside width of at least 12 inches (305 mm), shall project at least 3 inches (76 mm) from the wall and shall be spaced not more than 18 inches (457 mm) on center (o.c.) vertically for the full height of the window well. The ladder or steps shall not encroach into the required dimensions of the window well by more than 6 inches (152 mm).~~ The ladder or steps shall not be obstructed by the *emergency escape and rescue opening* when the window or door is in the open position. Ladders or steps required by this section ~~are exempt from the *stairway* requirements of~~ shall not be required to comply with Section 1011.

1030.4.2.1 Ladders. Ladders or rungs shall have an inside width of at least 12 inches (305 mm), shall project at least 3 inches (76 mm) from the wall and shall be spaced not more than 18 inches (457 mm) on center (o.c.) vertically for the full height of the area well.

1030.4.3 Drainage. Area wells shall be designed for proper drainage by connecting to the building's foundation drainage system required by Section 1805.

Exception: A drainage system for area wells is not required where the foundation is on well-drained soil or sand-gravel mixture soils in accordance with the United Soil Classification System, Group I Soils, in accordance with Section 1803.5.1.

1030.~~5~~4.4 Bars, grilles, covers and screens. Where Bars, grilles, covers, screens or similar devices are ~~permitted to be~~ placed over *emergency escape and rescue openings,* bulkhead enclosures, or ~~window~~ area wells that serve such openings.~~, provided that~~ the minimum net clear opening size ~~complies~~ shall comply with Section 1030.1.1 through ~~1030.4~~ 1030.2.2 and 1030.4. ~~and~~ Such devices shall be releasable or removable from the inside without the use of a key, tool or force greater than that which is required for normal operation of the *emergency escape and rescue opening*. ~~Where such bars, grilles, covers, screens or similar devices are installed in existing buildings, they shall not reduce the net clear opening of the *emergency escape and rescue openings and smoke alarms* shall be installed in accordance with Section 907.2.10 regardless of the valuation of the *alteration*.~~

IRC

R310.4 Area wells. An *emergency escape and rescue opening* with the bottom of the clear opening below the adjacent grade shall be provided with an area well in accordance with Sections R310.4.1 through R310.4.4.

R310.~~2.3~~4.1 ~~Window wells~~ Minimum size. The horizontal area of the ~~window~~ area well shall be not less than 9 square feet (0.9 m^2), with a horizontal projection and width of not less than 36 inches (914 mm). The ~~area of the window~~ area well shall allow the emergency escape and rescue opening to be fully opened.

Exception: The ladder or steps required by Section R310.4.2.1 shall be permitted to encroach not more than 6 inches (152 mm) into the required dimensions of the ~~window~~ area well.

R310.~~2.3.1~~ 4.2 Ladder and steps. ~~Window~~ Area wells with a vertical depth greater than 44 inches (1118 mm) shall be equipped with ~~a~~ an approved permanently affixed ladder or steps ~~usable with the window in the fully open position~~. The ladder or steps shall not be obstructed by the *emergency escape and rescue opening* when the window or door is in the open position. Ladders or steps required by this section shall not be required to comply with Section R311.7. ~~Ladders or rungs shall have an inside width of not less than 12 inches (305 mm), shall project not less than 3 inches (76 mm) from the wall and shall be spaced not more than 18 inches (457 mm) on center vertically for the full height of the window well.~~

R310.4.2.1 Ladders. Ladders or rungs shall have an inside width of at least 12 inches (305 mm), shall project at least 3 inches (76 mm) from the wall and shall be spaced not more than 18 inches (457 mm) on center (o.c.) vertically for the full height of the area well.

R310.~~2.3.2~~ 4.3 Drainage. ~~Window~~ Area wells shall be designed for proper drainage by connecting to the building's foundation drainage system required by Section R405.1 ~~or by an approved alternative method~~.

Exception: A drainage system for ~~window~~ area wells is not required where the foundation is on well-drained soil or sand-gravel mixture soils in accordance with the United Soil Classification System, Group I Soils, as detailed in Table R405.1.

R310.4.4 Bars, grilles, covers and screens. Where bars, grilles, covers, screens or similar devices are placed over emergency escape and rescue openings, bulkhead enclosures, or area ~~walls, or window~~ wells that serve such openings, ~~. The~~ the minimum net clear opening size shall comply with Sections R310.2~~.1~~ through R310.2.~~3~~2 and R310.4.1. ~~, and~~ Such devices shall be releasable or removable from the inside without the use of a key~~,~~ or tool~~, special knowledge~~ or force greater than that required for the normal operation of the escape and rescue opening.

Reason: This is a series of changes to coordinate the provisions for emergency escape and rescue openings. This deals with area wells.

- IBC 1030.4 and IRC R310.4 - The same point of measurement should be used for both the maximum height above floor (section above) and the window well. Should not mix 'grade' and 'ground level'.
- IBC 1030.4.1 and IRC R310.4.1 - "horizontal projection and width" is more specific. IBC exception for ladder encroachment moved up from 1030.4.2.
- IBC 1030.4.2 and IRC 1030.4.2 - IBC encroachment of ladder into well moved up to 1030.4.1. IRC. The sentence about the window not obstructing the ladder has been clarified. Added 'doors'. Requirements for ladders moved into separate section.
- IBC 1030.4.3 and IRC R1030.4.3 - No change to requirements. Just pulled out to separate section.
- IBC 1030.4.4 and IRC R310.4.4 - Revisions for coordination. Reference to emergency and escape opening size and minimum window well size. IBC existing building sentence should be in IEBC. "Special knowledge is revised to be consistent with IBC and IRC R310.1.1 – the term allows for too broad of an interpretation.
- IRC Section R310.3.2, R310.3.2.1 and R310.3.2.2 – delete the separate window well requirements for doors. Since we are delaying

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Proposal 10:

IBC

1030.4.2 Ladders or steps. Area wells with a vertical depth of more than 44 inches (1118 mm) shall be equipped with an *approved* permanently affixed ladder or steps. The ladder or steps shall not be obstructed by the *emergency escape and rescue opening* when the window or door is in the open position. Ladders or steps required by this section shall not be required to comply with Section 1011.

1030.4.2.1 Ladders. Ladders or rungs shall have an inside width of at least 12 inches (305 mm), shall project at least 3 inches (76 mm) from the wall and shall be spaced not more than 18 inches (457 mm) on center (o.c.) vertically for the full height of the area well.

1030.4.2.2 Steps. Steps shall have an inside width of at least 12 inches (305 mm), shall have minimum treads depth of 5 inches (127 mm) and a maximum riser height of 18 inches (457 mm) for the full height of the area well.

IRC

R310.4.2 Ladder and steps. Area wells with a vertical depth greater than 44 inches (1118 mm) shall be equipped with an approved permanently affixed ladder or steps. The ladder or steps shall not be obstructed by the *emergency escape and rescue opening* when the window or door is in the open position. Ladders or steps required by this section shall not be required to comply with Section R311.7

R310.4.2.1 Ladders. Ladders or rungs shall have an inside width of at least 12 inches (305 mm), shall project at least 3 inches (76 mm) from the wall and shall be spaced not more than 18 inches (457 mm) on center (o.c.) vertically for the full height of the area well.

R310.4.2.2 Steps. Steps shall have an inside width of at least 12 inches (305 mm), shall have minimum treads depth of 5 inches (127 mm) and a maximum riser height of 18 inches (457 mm) for the full height of the area well.

Reason: Blue text from Proposal 9 – shown here for context only.
The current provisions says ladders and steps don't have to comply with the standard stairway provisions, however, while specific provisions are provided for ladders, no limits are provided for steps. The option here it the same width and distance between steps are permitted for ladders. The tread depth is the minimum width from alternating tread devices and ships ladders.

Proposal 11:

11-20-2017: At the BCAC meeting there was extensive discussion on if the 36" under the deck was of sufficient height to allow for fire department assistance at the EERO. Also, how the fire department would

be aware of an EERO located under a deck. Proposal is to limit this allowance in IBC to just townhouse private decks in the IBC to more closely mirror IRC. Still under discussion.

IBC

1030.5 Emergency escape and rescue openings under decks and porches. In Group R-2 and Group R-3 townhouses, emergency escape and rescue openings installed under private grade level decks and porches shall be fully operable and provide a path not less than 36 inches (914 mm) in height to a *yard* or court.

IRC

R310.~~2.~~45 Emergency escape and rescue openings under decks and porches. Emergency escape and rescue openings installed under decks and porches shall be fully operable and provide a path not less than 36 inches (914 mm) in height to a *yard* or court.

Reason: This is a series of changes to coordinate the provisions for emergency escape and rescue openings. This deals with allowing window wells under decks.
The IRC allows for EERO under decks. For a similar allowance, given the scope of the different documents, coordination would be limited to private decks for townhouses.

Proposal 12:

11-20-2017: Committee needs to decide if they want to add Item 3 for consistency with IEBC? Still under discussion.

IFC 1031.7 Emergency escape and rescue openings. Required *emergency escape and rescue openings* shall be maintained in accordance with the code in effect at the time of construction, and both of the following:

1. Required *emergency escape and rescue openings* shall be operational from the inside of the room without the use of keys or tools.
2. Bars, grilles, grates or similar devices are allowed to be placed over *emergency escape and rescue openings* provided the minimum net clear opening size complies with the code that was in effect at the time of construction and such devices shall be releasable or removable from the inside without the use of a key, tool or force greater than that which is required for normal operation of the *emergency escape and rescue opening*.
3. Where such bars, grilles, grates or similar devices are installed, they shall not reduce the net clear opening of the emergency escape and rescue openings and smoke alarms shall be installed in accordance with Section 907.2.11 of the *International Building Code* regardless of the valuation of the alteration.

IPMC [F] 702.4 Emergency escape openings. Required emergency escape openings shall be maintained in accordance with the code in effect at the time of construction, and both of the following~~.~~:

1. Required emergency escape and rescue openings shall be operational from the inside of the room without the use of keys or tools.
2. Bars, grilles, grates or similar devices are permitted to be placed over emergency escape and rescue openings provided the minimum net clear opening size complies with the code that was in effect at the time of construction and such devices shall be releasable or removable from the inside without the use of a key, tool or force greater than that which is required for normal operation of the escape and rescue opening.

3. Where such bars, grilles, grates or similar devices are installed, they shall not reduce the net clear opening of the emergency escape and rescue openings and smoke alarms shall be installed in accordance with Section 907.2.11 of the *International Building Code* regardless of the valuation of the alteration.

Reason: The IPMC should be revised to follow the format in the IFC, with a slight editorial change in language. The IFC and IPMC text are consistent with the IEBC.
Add Item 3 to the IEBC and IPMC for consistency with the IEBC. This will address situations where someone added these grills without a permit.

Note: IEBC text, but no proposals to this text at this time – Group B

IEBC (prescriptive method)

505.4 Emergency escape and rescue openings. Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys or tools.

Bars, grilles, grates or similar devices are ~~permitted~~ allowed to be placed over emergency escape and rescue openings provided the minimum net clear opening size complies with the code that was in effect at the time of construction and such devices shall be releasable or removable from the inside without the use of a key, tool or force greater than that which is required for normal operation of the emergency escape and rescue opening.

Where such bars, grilles, grates or similar devices are installed, they shall not reduce the net clear opening of the emergency escape and rescue openings and smoke alarms shall be installed in accordance with Section 907.2.11 of the *International Building Code* regardless of the valuation of the alteration.

IEBC (Alterations Level 1)

701.4 Emergency escape and rescue openings. Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys or tools.

Bars, grilles, grates or similar devices are ~~permitted~~ allowed to be placed over emergency escape and rescue openings provided the minimum net clear opening size complies with the code that was in effect at the time of construction and such devices shall be releasable or removable from the inside without the use of a key, tool or force greater than that which is required for normal operation of the emergency escape and rescue opening.

Where such bars, grilles, grates or similar devices are installed, they shall not reduce the net clear opening of the emergency escape and rescue openings and smoke alarms shall be installed in accordance with Section 907.2.11 of the *International Building Code* regardless of the valuation of the alteration.

IBC 10-5

BCAC Social stairs

1029.16 Handrails. Ramped *aisles* having a slope exceeding one unit vertical in 15 units horizontal (6.7-percent slope) and stepped *aisles* shall be provided with *handrails* in compliance with Section 1014 located either at one or both sides of the *aisle* or within the *aisle* width. Where stepped aisle have seating on one side and the aisle width is 74 inches (1880 mm) or greater, two handrails are required. Where two handrails are required, one of the handrails must be with 30 inches horizontally of the end of the aisle accessways.

Exceptions:

1. *Handrails* are not required for ramped *aisles* with seating on both sides.
2. *Handrails* are not required where, at the side of the *aisle*, there is a *guard* with a top surface that complies with the graspability requirements of *handrails* in accordance with Section 1014.3.

3. *Handrail* extensions are not required at the top and bottom of stepped *aisles* and ramped *aisles* to permit crossovers within the *aisles*.

1029.16.1 Discontinuous handrails. Where there is seating on both sides of the *aisle* the mid-aisle handrails shall be discontinuous. Where the stepped aisle is required to have two handrails, handrails not located on a guard or wall shall be discontinuous. The ~~with~~ gaps or breaks at intervals shall not exceeding five rows to facilitate access to seating and to permit crossing from one side of the *aisle* to the other. These gaps or breaks shall have a clear width of not less than 22 inches (559 mm) and not greater than 36 inches (914 mm), measured horizontally, and the mid-aisle *handrail* shall have rounded terminations or bends.

1029.16.2 Handrail termination. *Handrails* located on the side of stepped *aisles* shall return to a wall, *guard* or the walking surface or shall be continuous to the *handrail* of an adjacent stepped *aisle flight*.

1029.16.3 Mid-aisle termination. Mid-aisle *handrails* shall not extend beyond the lowest riser and shall terminate within 18 inches (381 mm), measured horizontally, from the lowest riser. *Handrail* extensions are not required.

Exception: Mid-aisle *handrails* shall be permitted to extend beyond the lowest riser where the *handrail* extensions do not obstruct the width of the cross *aisle*.

1029.16.4 Rails. Where mid-aisle *handrails* are provided in stepped *aisles*, there shall be an additional rail located approximately 12 inches (305 mm) below the *handrail*. The rail shall be adequate in strength and attachment in accordance with Section 1607.8.1.2.

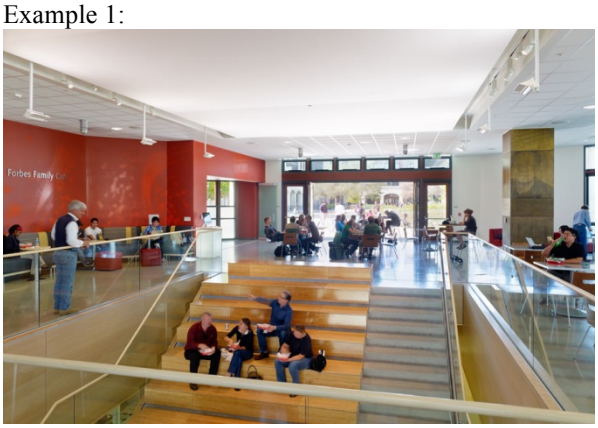
Reason: The social stairway is a new style being used in common areas of schools and multi-assembly buildings. It appears to fall somewhere between stairways and assembly seating. If this is considered a stairway next to platforms, the general requirement for handrails on both sides of the stairway prevents access to the platforms (Example 4). Considering this configuration as assembly seating would require one handrail with current text.

This proposal considers this arrangement as a type of assembly seating. The width would have to be determined using both the general circulation number from the upper/lower floor and the seating in accordance with Section 1029.6.1, which requires extra width if a handrail is not with 30". By considering this assembly seating, accessible wheelchairs spaces would already be addressed. Drop offs along the top would have to meet guard provisions.

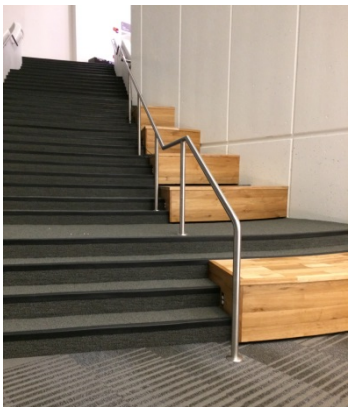
To address occupant safety, this proposal will require a mid-aisle handrail on wide stepped aisles in addition to the handrail on the wall. The reasoning for 74" was that we did not want either side of the handrails to create a width that was not readily useable (30" + 44" = 74"). The second handrail being within 30" of the edge of the platform allows flexibility in handrail placement, but still keeps the handrail within reach of persons moving off the platforms. Where there is not a cross aisle, the handrail would still have to have handrail extensions at the top and bottom, as well as meet all the other handrail provisions in Section 1014 and 1029.6. This 2nd handrails would typically not show up in stadium seating where aisles are typically less wide than specified here.

As you can see in the examples provided: Example 1 has two handrails, but with one on the far side of the platform. Example 2 a 2nd handrail blocks access to the platforms, so people either climb up the platforms, or go under the handrail. In example 3 and 4 a handrail is only provided on one side of the stairway, regardless of width. None of these configuration would address stairway safety and access to the platforms.

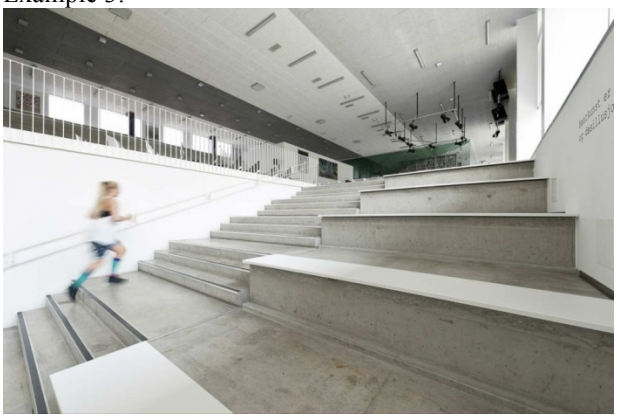
Example 1:



Example 2:



Example 3:



Example 4:

Delayed egress locks –

1010.1.9.8 Delayed egress. Delayed egress locking systems shall be permitted to be installed on doors 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.
   ~~Exception:~~
3. In a courthouse, delayed egress locking systems shall be permitted to be installed on exit or exit access doors, other than the main exit or exit access door, serving a Group A-3 courtroom in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

1010.1.10 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 be locking in accordance with Section 1010.1.9.4, Item 2.
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 1010.1.9.9 or 1010.1.9.10.
3. Courtrooms shall be permitted to be locked in accordance with Section 1010.1.9.8, Item 3.

Reason: The allowance for courtrooms, while logical, seems out of place as an exception to Items 1 and 2. This is only a format issue resulting from the multiple changes last cycle to the delayed egress locks - E66-15 AMPC1, E68-15 AM/AMPC1, E69-15 AS.

Correlation with 1010.1.10 is needed because this is Group A where panic hardware is required.

BCAC IBC 10-8

Submitted by: BCAC
Section addressed: IBC 1010.1.4.4; IFC 1010.1.4.4; IFC 1031.2.2

Revise section as follows:

IBC 1010.1.4.4 (IFC[BE] 1010.1.4.4) Locking arrangements in educational occupancies. In Group E occupancies, ~~and~~ Group B educational occupancies and Group I-4 occupancies, egress doors from classrooms, offices and other occupied rooms ~~shall be permitted to be provided~~ with locking arrangements designed to keep intruders from entering the room ~~where~~ shall comply with all of the following conditions ~~are met~~:

1. The door shall be capable of being unlocked from outside the room with a key or other approved means.
2. The door shall be openable from within the room in accordance with Section 1010.1.9.
3. Modifications shall not be made to listed panic hardware, fire door hardware or door closers.
4. Modifications to fire door assemblies shall be in accordance with NFPA 80.

Remote locking or unlocking of doors from an approved location shall be permitted in addition to the unlocking operation in Item 1.

~~1010.1.4.4.1 Remote operation of locks.~~ ~~Remote operation of locks complying with Section 1010.1.4.4 shall be permitted.~~

IFC [BE] 1031.2.2 Locking arrangements in educational occupancies. In Group E occupancies, Group B educational occupancies and Group I-4 ~~child day care~~ occupancies, egress doors ~~from classrooms, offices and other occupied rooms shall be permitted to be provided~~ with locking arrangements designed to keep intruders from entering the room shall comply with Section 1010.1.4.4. ~~where all of the following conditions are met:~~

~~1. The door shall be capable of being unlocked from outside the room with a key or other approved means.~~

~~2. The door shall be openable from within the room in accordance with Section 1010.1.9.~~

~~3. Modifications shall not be made to existing listed panic hardware, fire door hardware or door closers.~~

~~4. Modifications to fire door assemblies shall be in accordance with NFPA 80.~~

Reason: During the last code development cycle several proposals were accepted to address various locking arrangements being proposed for educational occupancies. During the Group A and Group B cycles, there were additions made to the various proposals, which results in current code language that is not entirely correlated. This proposal attempts to correlate the codes so requirements are consistent throughout.

IFC includes allowances for Group I-4, which are not listed in the IBC. Lock-down plans for day care facilities are as important as for schools. The further language for Group I-4 "child day care" is not needed to describe the occupancy.

The reason statement for the public comment said that the committee did not want to make these locks mandatory, but by using "shall be permitted", lock-down systems could be provided that did not comply with these requirements. With the proposed language, a school could choose to add locks to keep out intruders, but those locks would have to comply with these important safety features.

Subsection 1010.1.4.4.1 is confusing. The allowance for remote unlocking from the outside could easily be included in Section 1010.1.4.4. This was not included in IFC.

There will be a correlative change submitted to IEBC as part of Group B proposals since this is an important modification being done by schools across the country.

BCAC IBC 10-9

Topic: Exits from Occupied roofs

Proposal 1 – stairway and elevator can extend to roof

SECTION 202
DEFINITIONS

[BG] PENTHOUSE. An enclosed, unoccupied rooftop structure used for sheltering mechanical and electrical equipment, tanks, elevators and related machinery, stairways and vertical *shaft* openings.

SECTION 503
GENERAL BUILDING HEIGHT AND AREA LIMITATIONS

503.1.4 Occupied roofs. A roof level or portion thereof shall be permitted to be used as an occupied roof provided the occupancy of the roof is an occupancy that is permitted by Table 504.4 for the story immediately below the roof. The area of the occupied roofs shall not be included in the building area as regulated by Section 506. An occupied roof shall not be included in the building height or number of stories as regulated by Section 504 provided the penthouses and other enclosed roof structures comply with Section 1510.

SECTION 1510

ROOFTOP STRUCTURES

[BG] 1510.1 General. The provisions of this section shall govern the construction of rooftop structures.

1510.1.1 Area limitation. The aggregate area of penthouses and other enclosed rooftop structures shall not exceed one-third the area of the supporting roof deck. Such penthouses and other enclosed rooftop structures shall not be required to be included in determining the building area or number of stories as regulated by Section 503.1. The area of such penthouses shall not be included in determining the fire area specified in Section 901.7.

[BG] 1510.2 Penthouses. Penthouses structures in compliance with Sections 1510.2.1 through 1510.2.4 shall be considered as a portion of the story directly below the roof deck on which such penthouses are located. Other penthouses shall be considered as an additional story of the building.

[BG] 1510.2.2 Use limitations. Penthouses shall not be used for purposes other than the shelter of mechanical or electrical equipment, tanks, elevators and related machinery, stairways or vertical shaft openings in the roof assembly, including ancillary spaces used to access elevators and stairways.

Reason: Although it was felt the original intent of the egress associated with occupied roofs was clear, we felt there were a few remaining provisions that left doubt as to what was intended. It had been reported that some code officials had interpreted the existing code provision to treat an unoccupied roof as an additional story so as to decrease the actual allowable stories in Chapter 5. To clarify that occupied roofs are not considered stories and are permitted to be used provide that egress is provided in accordance with all applicable sections of the IBC and IFC purposes in a manner "as if they were a story" without applying other "story" requirements like those associated with height and area limitations in Chapter 5 or fire area provisions of Chapter 9, we propose the above modifications as summarized below:

In Section 202, the definition of "PENTHOUSE" is proposed to be modified by adding the word "stairway". This reinforces the existing and proposed language in Section 1510 that excludes certain allowable rooftop structures from being considered additional stories.

The proposal in Section 503.1.4 Occupied roofs, adds a clarifying statement to support the concept that occupied roofs and other enclosed structures in Section 1510 are not an additional story. Proposed modifications to Section 1510 Rooftop Structures include the additions of the term "other enclosed rooftop structures" to Section 1510.2 Penthouses; "Stairways" to Section 1510.2.2. Use Limitations.

The addition of Section 1510.2.5 "Occupied roof ancillary structures" is proposed to solidify the use limitations of the these areas to attempt to limit voids that may lead to circumvention of the Code's intent.

As flat/ low-slope rooftops are increasingly, and intentionally, being designed and utilized for occupancies similar to those on occupied floor levels below, modifications to the current code are necessary to define *rooftop structures* that are occupied and ancillary to approved occupied roof uses and to clarify that these structures must comply with means of egress requirements, but are not a story for height and area limitations. In addition, the proposed modifications described above align the limitations for *Occupied roof ancillary structures* with those for penthouses as a reasonable approach based upon the shared characteristics of the two structure types.

Proposal 2 – number of exits from a roof

SECTION 1006
NUMBER OF EXITS AND EXIT ACCESS DOORWAYS

1006.1 General. The number of *exits* or *exit access doorways* required within the *means of egress* system shall comply with the provisions of Section 1006.2 for spaces, including *mezzanines*, and Section 1006.3 for *stories* or occupied roofs.

1006.3 Egress from stories or occupied roofs. The *means of egress* system serving any *story* or occupied roof shall be provided with the number of separate and distinct *exits* or access to *exits* based on the aggregate *occupant load* served in accordance with this section. Where *stairways* serve more than one *story*, only the occupant load of each *story* considered individually shall be used in calculating the required number of *exits* or access to *exits* serving that *story*.

1006.3.1 Adjacent story. 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 in open parking garages that serve only the parking garage.
4. Exit access stairways and ramps serving open-air assembly seating complying with the exit access travel distance requirements of Section 1029.7.
5. 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.

1006.3.2 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 1006.3.2. A single *exit* or access to a single *exit* shall be permitted in accordance with Section 1006.3.3. 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*.

TABLE 1006.3.2
MINIMUM NUMBER OF EXITS OR ACCESS TO EXITS PER STORY OR OCCUPIED ROOF

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

1006.3.3 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 common path of egress travel distance do not exceed the values in Table 1006.3.3(1) or 1006.3.3(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*.

TABLE 1006.3.3(1)
STORIES AND OCCUPIED ROOFS WITH ONE EXIT OR ACCESS TO ONE EXIT FOR R-2 OCCUPANCIES

STORY AND OCCUPIED ROOF	OCCUPANCY	MAXIMUM NUMBER OF DWELLING UNITS	MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE
Basement, first, second or third story above grade plane	R-2[a, b]	4 dwelling units	125 feet
Occupied roof over the first, second or third story above grade plane	R-2[a, b]	NA	125 feet
Fourth story above grade plane and higher	NP	NA	NA

For SI: 1 foot = 3048 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 1030.
b. This table is used for R-2 occupancies consisting of dwelling units. For R-2 occupancies consisting of sleeping units, use Table 1006.3.3(2).

TABLE 1006.3.3(2)
STORIES AND OCCUPIED ROOFS WITH ONE EXIT OR ACCESS TO ONE EXIT FOR OTHER OCCUPANCIES

STORY AND OCCUPIED ROOF	OCCUPANCY	MAXIMUM OCCUPANT LOAD PER STORY AND OCCUPIED ROOF	MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE (feet)
First story above or below grade plane and occupied roofs over the first story above grade plane	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 and occupied roof over the 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 1030.
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 or 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 1006.3.3(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: The change to the title and heading in Table 1006.3.2 is for consistency with the text.

The proposed modifications to Section 1006. include adding "occupied roofs" to Table 1006.3.3(1) to clarify the conditions in which one exit or access to one exit is allowed for R-2 Occupancies.

Similarly proposal adds “occupied roofs” to Table 1006.3.3(2) to clarify the conditions in which one exit or access to one exit is allowed for other occupancies. A propose modification to footnote b of 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.

Proposal 3 – requiring standby power for elevator to roof

Section 1009
ACCESSIBLE MEANS OF EGRESS

1009.2.1 Elevators required. In buildings where a required *accessible* floor 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. For purposes of determining where an elevator is required for accessible means of egress, in buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, an occupied roof shall not be considered a story.

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: This is not for when an accessible route is required to an occupied roof. That is already addressed in Section 1104.4. This is only for when an elevator would be required to serve as part of an accessible means of egress, and thus add a requirement for standby power. This allowance would only be applicable where there was an occupied roof on a 4 story building. If there is an occupied roof on any taller buildings, unless those buildings meet one of the other exceptions for ramps or horizontal exits, standby power would be required to all floors, including the occupied roof. The roof is required to be open to the outside, so there is not the accumulation for smoke that would be found on a typical interior floor – so that offers extra passive protection of occupants on the roof. Therefore, there did not seem to be any justification to require standby power for this limited situation. The stairways would still be required to comply with Section 1009 for accessible means of egress from the roof.

This proposal reinforces the concept that an occupied roof is not a story for the purpose of determining that an elevator is required as an accessible means of egress in properly sprinklered buildings.