E88-07/08
1013.3, 1025.14.1 (IFC [B] 1013.3, 1025.14.1)

Proposed Change as Submitted:

Proponent: Christopher W. Bryant, spg3 Architects, representing himself

Revise as follows:

1013.3 (IFC [B] 1013.3) (Supp) Opening limitations. Open guards shall have balusters or ornamental patterns such that a 4-inch-diameter (102 mm) sphere cannot pass through any opening up to a height of 34 inches (864 mm). From a height of 34 inches (864 mm) to 42 inches (1067 mm) above the adjacent walking surfaces, a sphere 8 inches (203 mm) in diameter shall not pass.

Exceptions:

1. The triangular openings formed by the riser, tread and bottom rail at the open side of a stairway shall be of a maximum size such that a sphere of 6 inches (152 mm) in diameter cannot pass through the opening.
2. At elevated walking surfaces for access to and use of electrical, mechanical or plumbing systems or equipment, guards shall have balusters or be of solid materials such that a sphere with a diameter of 21 inches (533 mm) cannot pass through any opening.
3. In areas that are not open to the public within occupancies in Group I-3, F, H or S, and for alternating tread devices, balusters, horizontal intermediate rails or other construction shall not permit a sphere with a diameter of 21 inches (533 mm) to pass through any opening.
4. In assembly seating areas where an elevation change of less than 30 inches occurs between a cross aisle and the adjacent floor or grade below, or between successive tiers of seating, guards complying with Section 1025.14 shall have balusters or ornamental patterns such that a sphere with a diameter of 21 inches (533 mm) can not pass through any opening.

~~4.~~ 5. In assembly seating areas, guards at the end of aisles where they terminate at a fascia of boxes, balconies and galleries shall have balusters or ornamental patterns such that a 4-inch-diameter (102 mm) sphere cannot pass through any opening up to a height of 26 inches (660 mm). From a height of 26 inches (660mm) to 42 inches (1067 mm) above the adjacent walking surfaces, a sphere 8 inches (203 mm) in diameter shall not pass.

~~5.~~ 6. Within individual dwelling units and sleeping units in Group R-2 and R-3 occupancies, openings for required guards on the sides of stair treads shall not allow a sphere of 4.375 inches (111 mm) to pass through.

1025.14 (IFC [B] 1025.14) Assembly guards. Assembly guards shall comply with Sections 1025.14.1 through 1025.14.3.

1025.14.1 (IFC [B] 1025.14.1) Cross aisles. Cross aisles located more than 30 inches (762 mm) above the floor or grade below shall have guards in accordance with Section 1013.

Where an elevation change of 30 inches (762 mm) or less occurs between a cross aisle and the adjacent floor or grade below, or between successive tiers of seating, guards not less than 26 inches (660 mm) above the aisle floor shall be provided.

Exception: Where the backs of seats on the front of the cross aisle project 24 inches (610 mm) or more above the adjacent floor of the aisle, a guard need not be provided.

Reason: The purpose of this change is to clarify the type of protection required in assembly spaces where there is a an elevation change of less than 30 inches. Section 1013.1 of the IBC only requires guards to be located along open sided walking surfaces that are located more than 30 inches above the floor or grade below. In assembly seating areas where there are open sided cross aisles or level changes between tiered seating sections and where the elevation change is less than 30 inches, a barrier is needed only to prevent occupants from stepping off the edge (especially in what might be a dimly lit environment). This protection can be provided in numerous ways including a simple railing. It should not be necessary to limit the size of openings between guard members to 4 inches because the IBC does not require such limitations for similar conditions elsewhere in a building. Requiring a 4 inch opening limitation for these types of edge protection would be overly restrictive and inconsistent with the general scoping paragraph in Section 1013.1. Limiting the openings to those that prevent the passage of a 21 inch sphere is consistent with the limitations in exceptions 2 and 3 and is more than adequate to provide the edge protection needed. It should also be noted that the exception in Section 1025.14.1 allows the edge protection to be provided by the backs of the seats in front as long as they extend a minimum of 24 inches above the level behind. Depending on the individual seat design there often may be more than 4 inches between individual seat backs within a row and there often may be more than 4 inches between the seat back and the leading edge of the upper tier or walking surface.

Cost Impact: This code change will not increase the cost of construction.

Committee Action: **Disapproved**

Committee Reason: The language in Section 1013 and 1025.14.1 already adequately addresses this issue.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Christopher W. Bryant, spg3 Architects, representing himself, requests Approval as Modified by this public comment.

Modify proposal as follows:

1013.3 (IFC [B] 1013.3) (Supp) Opening limitations. Open guards shall have balusters or ornamental patterns such that a 4-inch-diameter (102 mm) sphere cannot pass through any opening up to a height of 34 inches (864 mm). From a height of 34 inches (864 mm) to 42 inches (1067 mm) above the adjacent walking surfaces, a sphere 8 inches (203 mm) in diameter shall not pass.

Exceptions:

1. The triangular openings formed by the riser, tread and bottom rail at the open side of a stairway shall be of a maximum size such that a sphere of 6 inches (152 mm) in diameter cannot pass through the opening.
2. At elevated walking surfaces for access to and use of electrical, mechanical or plumbing systems or equipment, guards shall have balusters or be of solid materials such that a sphere with a diameter of 21 inches (533 mm) cannot pass through any opening.
3. In areas that are not open to the public within occupancies in Group I-3, F, H or S, and for alternating tread devices, balusters, horizontal intermediate rails or other construction shall not permit a sphere with a diameter of 21 inches (533 mm) to pass through any opening.
4. In assembly seating areas where an elevation change of ~~less than~~ 30 inches or less occurs between successive aisle accessways serving seating, or between an aisle accessway serving seating and a cross aisle ~~and the adjacent floor or grade below, or between successive tiers of seating~~, guards complying with Section 1025.14 shall have balusters or ornamental patterns such that a sphere with a diameter of 21 inches (533 mm) can not pass through any opening.
5. In assembly seating areas, guards at the end of aisles where they terminate at a fascia of boxes, balconies and galleries shall have balusters or ornamental patterns such that a 4-inch-diameter (102 mm) sphere cannot pass through any opening up to a height of 26 inches (660 mm). From a height of 26 inches (660mm) to 42 inches (1067 mm) above the adjacent walking surfaces, a sphere 8 inches (203 mm) in diameter shall not pass.
6. Within individual dwelling units and sleeping units in Group R-2 and R-3 occupancies, openings for required guards on the sides of stair treads shall not allow a sphere of 4.375 inches (111 mm) to pass through.

Commenter's Reason: At the public hearings in Palm Springs, CA there was a misunderstanding by some members of the Means of Egress Committee as to the conditions which this code change attempts to address. In most movie theaters with stepped ("stadium") seating, and in many other similar fixed seat assembly spaces, wheelchair positions are placed where seats would normally be placed. In addition the required companion seats are typically set further forward to be "shoulder to shoulder" with the person in the wheelchair. Both the wheelchair space and the forward set companion seat eliminate the guard protection typically provided by the seat back and required for the aisle accessway on the level behind (the exception to Section 1025.14.1 allows the seat backs, if they project 24 inches or more above the adjacent floor behind to fulfill the guard requirement). See Figure 1 below. The larger openings in the guard proposed by this code change provide equal guard protection to the seat backs they replace which often have space between them larger than 4 inches. Further as was noted in the supporting statement of the original proposal, guards are typically not required elsewhere in a building when the change in elevation between a walking surface and the floor or grade below is equal to or less than 30 inches. The most typical changes in elevation in stepped seating conditions in assembly spaces is between 12 and 24 inches. The specific modifications to the original proposal that are now being suggested are two-fold. The first is a simple change to coordinate better with the Section 1013 which requires guards when the level change is greater than 30 inches. The second modification references the term "aisle accessway serving seating" instead of tiered seating. Section 1025.10 specifically uses the term "aisle accessway serving seating" to describe the walking surface between successive rows of fixed seating. At the public hearings in Palm Springs there was testimony in opposition to the code change proposal stating that the term "tiered seating" was too broad. This second modification addresses that concern.

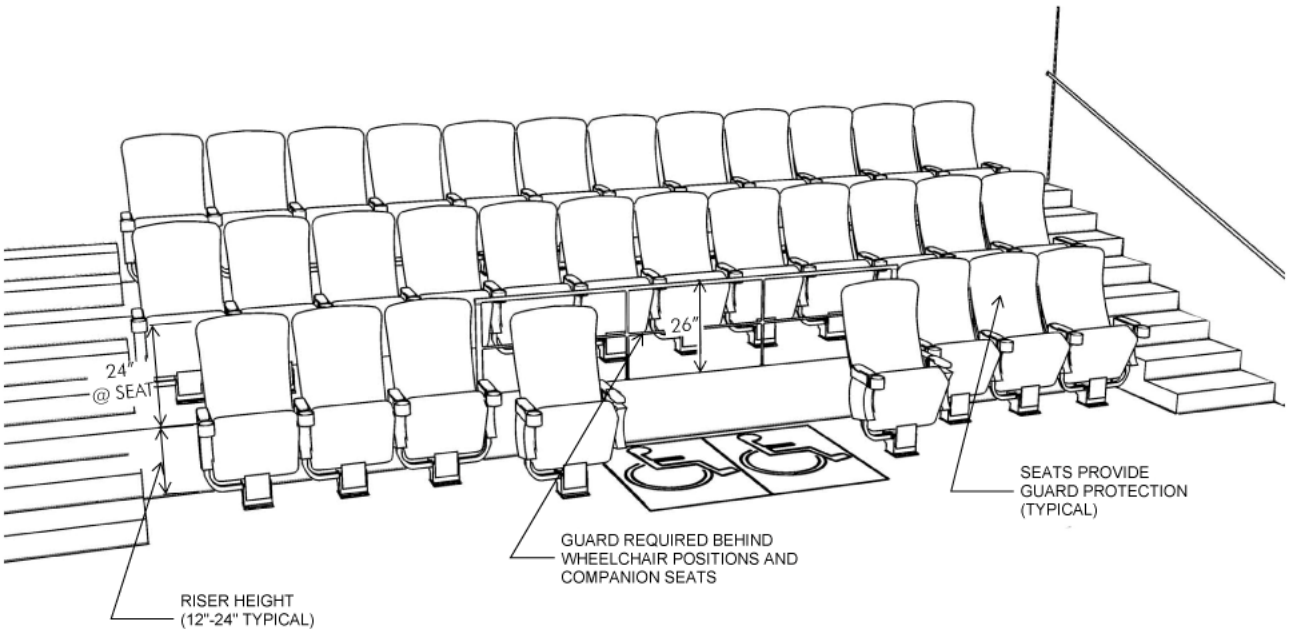

Figure 1

Final Action: AS AM AMPC____ D

E98-07/08

1002.1, 1015.2.1 (IFC [B] 1002.1, [B] 1015.2.1)

Proposed Change as Submitted:

Proponent: Gene Boecker, Code Consultants, Inc

Revise as follows:

1002.1 (IFC [B] 1002.1) Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

SCISSOR STAIR. Two interlocking stairways providing two separate paths of egress located within one stairwell enclosure. Two interlocking stairways which provide two separate paths of egress that are not located within the same exit enclosure do not constitute a scissor stair.

1015.2.1 (IFC [B] 1015.2.1) Two exits or exit access doorways. Where two exits or exit access doorways are required from any portion of the exit access, the exit doors or exit access doorways shall be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the building or area to be served measured in a straight line between exit doors or exit access doorways. Interlocking or scissor ~~stairs~~ stairways shall be counted as one exit stairway.

Exceptions:

1. Where exit enclosures are provided as a portion of the required exit and are interconnected by a 1-hour fire-resistance-rated corridor conforming to the requirements of Section 1017, the required exit separation shall be measured along the shortest direct line of travel within the corridor.
2. Where a building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2, the separation distance of the exit doors or exit access doorways shall not be less than one-third of the length of the maximum overall diagonal dimension of the area served.

Reason: There are two conditions within the definition that are necessary in order to understand what constitutes a scissor stair – the separate path of egress and the common enclosure. While it seems obvious that if there are not two separate paths of egress it cannot be a scissor stair, the second point of the criteria is not as easily understood and is sometimes the point of debate. The added text helps clarify that where the separate paths may interlock but are not within the same exit enclosure they do not meet the definition and are not considered scissor stairs.

This adds no code provisions but merely clarifies the distinction between scissor stairs and other stairs that may cross paths or interlock in some manner. Since the code has provisions for when a scissor stair can and cannot be used it is important to understand the distinction.

The change from the term 'stair' to 'stairway' is to coordinate with the definitions.

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

Committee Action: **Disapproved**

Committee Reason: The proposed new language for scissors stairways does not add clarity to the code.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Gene Boecker, Code Consultants, Inc., representing himself, requests Approval as Modified by this public comment.

Replace definition of "Scissor Stair" as follows:

SCISSOR STAIR. Two interlocking stairways providing two separate paths of egress located within one stairwell enclosure without separation between the two separate paths of egress equivalent to that required for the exit enclosure.

(Portions of proposal not shown remain unchanged)

Commenter's Reason: The intent is to delineate between a scissor stair and two interlocking stairways. For the scissor stair the condition exists where the enclosure surrounds both stairs within the stair enclosure such that there is a common atmosphere between the two. While this is a logical way to explain it, it is not code language. The proposed modification addresses the concern expressed by the committee. An interlocking stairway is one in which there is a physical barrier between the two stairways. This is often done where the floorplate of the building area is relatively small or where there is a need to separate the two paths for security purposes. The difference must be established such that issues for differing security locking and fire protection can be applied based on which of the two interlocking stairways a person is likely to be within. The proposed language avoided the negative language which was opposed at the committee hearing.

Final Action: AS AM AMPC____ D

E103-07/08

1002.1, 1007.3, 1016.1, 1019.1, 1020.1, (IFC [B] 1002.1, [B] 1007.3, [B] 1016.1, [B] 1019.1, [B] 1020.1)

Proposed Change as Submitted:

Proponent: Gregory R. Keith, Professional heuristic Development, representing The Boeing Company; Sarah A. Rice, Schirmer Engineering Corporation; Anne R. vonWeller, Murray City, UT, representing Utah Chapter of ICC

1. Add new definition as follows:

1002.1 (IFC [B] 1002.1) Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

TRAVEL DISTANCE. The measurement of the horizontal and vertical path of egress travel in the exit access portion of the means of egress system until arrival at an exit. Such path shall include travel between various building levels such as mezzanines and stories connected by unenclosed stairways or ramps.

2. Revise definitions as follows:

EXIT ACCESS. That portion of a means of egress system that leads from any occupied portion ~~of~~ within a building or structure to an exit. Exit access include occupied floor areas, aisle accessways, aisles, unenclosed interior stairways, unenclosed interior ramps, corridors and egress balconies.

EXIT. That portion of a means of egress system which is separated from other ~~interior~~ spaces of a building or structure by fire-resistance-rated construction and opening protectives as required to provide a protected path of egress travel between the exit access and the exit discharge or a public way. Exits include exterior exit doors at ground level, exit enclosures, exit passageways, exterior exit ~~stairs~~ stairways, exterior exit ramps and horizontal exits.

EXIT DISCHARGE. That portion of the means of egress system ~~between~~ that leads from the termination of an exit ~~and~~ to a public way.

3. Revise as follows:

1016.1 (IFC [B] 1016.1) (Supp) Travel distance limitations. Exits shall be so located ~~on each story~~ such that the maximum length of ~~exit access~~ egress travel, measured from the most remote point within ~~a story~~ the exit access to the entrance to an exit along the natural and unobstructed path of egress travel, shall not exceed the distances given in Table 1016.1.

Where the path of ~~exit access~~ egress travel includes unenclosed stairways or ramps within the exit access, the distance of travel on such unenclosed means of egress components shall also be included in the 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 stairway.

Exceptions:

1. Travel distance in open parking garages is permitted to be measured to the closest riser of an open ~~stairs~~ stairway.
2. Travel distance in Group A-5 occupancies where all portions of the means of egress are essentially open to the outside ~~outdoor facilities with open exit access components and open exterior stairs or ramps, travel distance~~ is permitted to be measured to the closest riser of ~~a stair~~ an open stairway or the closest slope of ~~the~~ an open ramp.
3. Travel distance in Group I-3 occupancies as provided in Section 408.3.6 is permitted to be measured to the entrance of the exit enclosure.
4. Travel distance for stages, fly galleries and gridirons as provided in Section 410.5.3 is permitted to be measured to the closest riser of an open stairway.

~~3. In other than occupancy Groups H and I, the exit access travel distance to a maximum of 50 percent of the exits is permitted to be measured from the most remote point within a building to an exit using unenclosed stairways or ramps when connecting a maximum of two stories. The two connected stories shall be provided with at least two means of egress. Such interconnected stories shall not be open to other stories. The measurement along stairways shall be made on a plane parallel and tangent to the stair tread nosings in the center of the stairway.~~

~~4. In other than occupancy Groups H and I, exit access travel distance is permitted to be measured from the most remote point within a building to an exit using unenclosed stairways or ramps in the first and second stories above grade plane in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.The first and second stories above grade plane shall be provided with at least two means of egress. Such interconnected stories shall not be open to other stories. The measurement along stairways shall be made on a plane parallel and tangent to the stair tread nosings in the center of the stairway.~~

1019.1 (IFC [B] 1019.1) (Supp) Exits from stories. All spaces within each story shall have access to the minimum number of approved independent exits as specified in Table 1019.1 based on the occupant load of the story. For the purposes of this chapter, occupied roofs shall be provided with exits as required for stories. The required number of exits from any story shall be maintained until arrival at grade or the public way.

Exceptions:

1. As modified by Section 403.15 (2007 Supp - Additional exit stairway).
2. As modified by Section 1019.2.

~~3. Rooms and spaces within each story provided with and having access to a means of egress that complies with Exception 3 or 4 in Section 1016.1 shall not be required to be provide the minimum number of approved independent exits required by Table 1019 on each story.~~

4. 3 In Groups R-2 and R-3 occupancies, one means of egress is permitted within and from individual dwelling units with a maximum occupant load of 20 where the dwelling unit is equipped throughout with an automatic sprinkler system in accordance with Sections 903.3.1.1 or 903.3.1.2.

1020.1 (IFC [B] 1020.1) (Supp) Enclosures required. Interior exit stairways and interior exit ramps shall be enclosed with fire barriers constructed in accordance with Section 706 or horizontal assemblies constructed in accordance with Section 711, or both. Exit 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 exit enclosure shall include any basements but not any mezzanines. Exit enclosures shall have a fire-resistance rating not less than the floor assembly penetrated, but need not exceed 2 hours. An exit enclosure shall not be used for any purpose other than means of egress.

Exceptions: The following exceptions are to the requirement for exit enclosure construction. Unenclosed stairways and ramps as permitted by the following exceptions do not qualify as an exit component for means of egress design purposes.

1. In all occupancies, other than Group H and I occupancies, a stairway is not required to be enclosed when the stairway serves an occupant load of less than 10 and the stairway complies with either Item 1.1 or 1.2. In all cases, the maximum number of connecting open stories shall not exceed two.
   1.1. The stairway is open to not more than one story above the story at the level of exit discharge; or
   1.2. The stairway is open to not more than one story below the story at the level of exit discharge.
2. ~~Exits~~ Stairways and ramps in ~~buildings of~~ Group A-5 occupancies where all portions of the means of egress are essentially open to the outside need not be enclosed.
3. Stairways serving and contained within a single residential dwelling unit or sleeping unit in Group R-1, R-2 or R-3 occupancies are not required to be enclosed.
4. Stairways in open parking garages ~~structures~~ that serve only the parking garage ~~structure~~ are not required to be enclosed.
5. Stairways in Group I-3 occupancies, as provided for in Section 408.3.6, are not required to be enclosed.
6. ~~Means of egress~~ Stairways from stages, fly galleries and gridirons as ~~required by~~ provided for in Section 410.5.3 are not required to be enclosed.
7. ~~Means of egress~~ Stairways from balconies, galleries and press boxes as provided for in Section 1025.5.1, are not required to be enclosed.
8. In other than Group H and I occupancies, a maximum of 50 percent of egress stairways serving one adjacent floor are not required to be enclosed, provided at least two means of egress are provided from both floors served by the unenclosed stairways. Any two such interconnected floors shall not be open to other floors. Unenclosed exit stairways shall be remotely located as required in Section 1015.2.
9. In other than Groups H and I occupancies, interior egress stairways serving only the first and second stories of a building equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 are not required to be enclosed, provided at least two means of egress are provided from both floors served by the unenclosed stairways. Such interconnected stories shall not be open to other stories. Unenclosed exit stairways shall be remotely located as required in Section 1015.2.

1007.3 (IFC [B] 1007.3) (Supp) ~~Exit~~ Egress stairways. In order to be considered part of an accessible means of egress, an ~~exit~~ egress stairway shall have a clear width of 48 inches (1219 mm) minimum between handrails and shall either incorporate an area of refuge within an enlarged floor-level landing or shall be accessed from either an area of refuge complying with Section 1007.6 or a horizontal exit.

Exceptions:

1. The area of refuge is not required at unenclosed interior ~~exit~~ stairways as permitted by Section 1020.1 in buildings or facilities that are equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
2. The clear width of 48 inches (1219 mm) between handrails is not required at ~~exit~~ egress stairways in buildings or facilities equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
3. Areas of refuge are not required at ~~exit~~ egress stairways in buildings or facilities equipped throughout by an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
4. The clear width of 48 inches (1219 mm) between handrails is not required for ~~exit~~ egress stairways accessed from a horizontal exit.

5. Areas of refuge are not required at ~~exit~~ egress stairways serving open parking garages.
6. Areas of refuge are not required for smoke protected seating areas complying with Section 1025.6.2.
7. The areas of refuge are not required in Group R-2 occupancies.

Reason: This proposal is intended to clarify the relationship between exit access travel distance determination requirements and enclosed or unenclosed stairways and ramps. This issue has been one of considerable debate during the last several code development cycles. Efforts to clarify travel distance provisions have actually further confused the matter. Means of egress provisions are necessarily performance based requirements that will accommodate varying building designs. Basic to design is the three part means of egress system. The exit access portion represents a relatively unprotected area. On the other hand, the exit portion represents a relatively protected area or qualified arrival at the exterior of the building.

To properly determine where each of the three parts of the means of egress system begins and ends, particular attention must be paid to their respective definitions in Section 1002.1. By definition, the exit access is, "That portion of a means of egress system that leads from any occupied portion of a building or structure to an exit." By definition, the exit is, "That portion of a means of egress system which is separated from other interior spaces of a building or structure by fire-resistance rated construction and opening protectives as required to provide for a protected path of egress travel between the exit access and the exit discharge. Exits include exterior exit doors at ground level, exit enclosures, exit passageways, exterior exit stairs, exterior exit ramps and horizontal exits."

There are two important points made in the definition of an "exit." One, it declares that an exit provides for "a protected path of egress travel." The inference being that the exit access does not provide for such a protect path of travel. Secondly, the definition provides a list of means of egress components that qualify as exits. It is important to remember these key points. Given the differences in levels of protection between the exit access and the exit parts of the means of egress system, occupant tenability in the exit access is controlled through travel distance requirements. Fundamentally, an occupant is permitted to travel for a specific period of time (converted to distance based on assumed rates of travel) from the most remote point within the building until he or she arrives at a relatively protected area (exit).

Section 1016.1 already acknowledges travel on unenclosed stairways and ramps and properly requires that travel on such open means of egress components shall be included in the travel distance measurement. As such, it is clear that unenclosed stairways and ramps are not exit components. Apparently, a major source of the confusion concerning this issue is that some interpret unenclosed stairways or ramps permitted by exception to 2006 Section 1020.1 as still qualifying as an exit for means of egress design purposes. Section 1020.1 prescribes exit enclosure requirements and an exit enclosure qualifies as an exit by definition. If there is an exception to exit enclosure construction, there is no exit enclosure and therefore, no exit. 2006 means of egress provisions are fairly clear, yet somehow are subject to debate, presumably based on legacy experience that may or may not be germane to current IBC provisions.

This proposal does not read between the lines. It simply takes the aforementioned fundamental requirements and provides amplification in an effort to achieve uniformity in interpretation and application. To begin, a definition has been created for the term "travel distance" to clarify that travel distance can (under prescribed conditions) include vertical travel from one building level to other building levels. Additionally, the key definitions of "exit access," "exit" and "exit discharge" have been enhanced. Just as the current definition for "exit" contains a list of exit components, the definition of exit access will now list included areas. Particularly important is the fact that unenclosed interior stairways and ramps are listed as exit access components. Accordingly, they are not exit components and travel distance is accounted for when unenclosed stairways or ramps are utilized in a specific means of egress design. The fact of the matter is that travel distance—whether it be horizontal or vertical—represents an acceptable period of time that an occupant can be exposed before untenability is theoretically experienced. An exit enclosure is very similar to two other exit components--the exit passageway and the horizontal exit. Typically, as exit components, the latter two are incorporated into a building means of egress to satisfy one or more design requirements—in all likelihood, travel distance. From a means of egress design perspective, an exit enclosure is no different. It is employed when travel distance requirements cannot otherwise be met.

That being said, it must be recognized that Section 1020.1 exit enclosure construction requirements are not necessarily intended only for means of egress purposes. Prevention of the vertical migration of fire and associated byproducts and the provision of fire department access are also valid technical rationale for such enclosure protection requirements. Any of these three concerns (egress, migration or access) could trigger the requirement for an enclosure while such enclosure may not actually be required for the other two concerns. Obviously, the taller the building, the more likely that an exit enclosure will address all three concerns becomes. If exit enclosure construction is required for mitigation of fire migration purposes, an exit component has also been provided and most means of egress system designers would take advantage of that fact and calculate travel distance to the exit enclosure that was initially provided for other than egress purposes.

Technically, this proposal accomplishes three things. First, it refines current IBC means of egress design requirements. This is simply accomplished by adding unenclosed interior stairways and ramps to the definition of "exit access," by adding a comment to the exceptions to Section 1020.1 that unenclosed interior stairways and ramps do not qualify as exits for means of egress design purposes and by creating applicable travel distance exceptions that correlate to appropriate exit enclosure exceptions.

Secondly, it necessarily reverses some of the inconsistent and confusing provisions included in the 2007 Supplement. I think that a possible source of this confusion is shown in the E122-06/07 reason statement. The proponent stated, "Section 1016.1 is intended to tell the code user how to measure "exit access travel distance", e.g. from the most remote point on a story to an "exit." This statement is fundamentally true. The reason statement goes on to say, "Section 1020.1 tells the code user that all exits are to be enclosed in fire rated construction, and more importantly, the conditions when an exit is not required to be enclosed by fire rated construction." This statement is not accurate. Section 1020.1 does not require that all exits be enclosed, it requires that all interior exit stairways be enclosed. By definition, the exit enclosure is the exit component, not the interior exit stairway. Again, the exceptions to Section 1020.1 do not state the conditions where an exit is not required to be enclosed—they are exceptions to the requirement to enclose interior egress stairways. As previously stated, if there is an exception to exit enclosure construction, there is no exit enclosure and therefore, no exit.

Accordingly, to be consistent with the current definitions of the three parts of a means of egress system and the technical requirements for the determination of travel distance, it is necessary to remove exceptions 3 and 4 to Section 1016.1 as they tended to confuse the fundamental issue. These exceptions currently state the requirement that under specified conditions travel distance may be measured to an exit using unenclosed stairways or ramps. This is not an exception, it is a restatement of the basic provisions of Section 1016.1 ("…measured from the most remote point within a story to the entrance to an exit…" and "…the distance of travel on such means of egress components (unenclosed stairways or ramps) shall also be included in the travel distance measurement." These exceptions are clearly intended to be exceptions to exit enclosure construction requirements and have been properly relocated in Section 1020.1. Additionally, Exception 3 to Section 1019.1 of the 2007 Supplement has be removed for similar reasons. The proponent's reason stated, "The intent of the revision to Section 1019.1 is to address the concern over two exit access stairways being provided from a 2nd floor when two exits were required. This is basically a correlation issue. The purpose of Section 1019.1 is to require access to exits based on increased occupant loads. Unenclosed stairways have no bearing on that issue whatsoever. The occupant load is what it is and the exits are what they are. Again, by definition, interior egress stairways are not exit components.

Based on changes to Section 1019.1 in the 2007 Supplement, additional clarification is provided through modification to Section 1016.1. The present reference to exits located on each "story" has been removed because Section 1019.1 of the 2007 Supplement is titled "Exits from stories" and addresses those requirements. The current Section 1016.1 provision is also in conflict with its own second paragraph that permits exit access to occur via unenclosed stairways and ramps. The statement is also somewhat in conflict with 2007 Supplement Section 1019.1 which states, "All spaces within each story shall have access to the minimum number of approved independent exits…" This modification is necessary for clarification and correlation.

Lastly, the terminology contained in related means of egress provisions has been corrected so as to be consistent with fundamental egress philosophy and not add to the potential confusion in the proper determination of what is—and what is not—an exit (component). Travel distance exceptions have been added to Section 1016.1 that correlate with the exit enclosure exceptions 5, 6 and 7 to Section 1020.1. Several of the exceptions to Section 1020.1 have been editorially revised to be consistent with each other and other related code provisions. Additionally, it is felt that the term "interior exit stairway" lends to the confusion on this issue. As previously stated, that term is a technical misnomer. An interior stairway is not an exit. Therefore, Sections 1007.3 and 1020.1 have been revised by replacing the term "exit stairway" with "egress stairway." Hopefully, these subtle changes in terminology will properly differentiate between exit access and exit components.

An indication as to the level of confusion and/or disagreement on this particular subject is offered by the very polarized testimony and vote on the placement of the aforementioned exceptions at the recent final action hearings in Rochester. It is felt that most agree that there is a problem with the manner in which travel distance and exit enclosure requirements are stated; however, there is considerable disagreement on the proper solution. It should be noted that there is a very recent ICC Interpretation Committee approval action that is particularly applicable to this issue. IBC Interpretation No. 23-07 issued September 27, 2007, addressed a question about a specific exception to Section 1020.1; however, the answer had much broader connotations. The question was: "In accordance with the provisions of Exception 3 to Section 1020.1 of the *International Building Code*, is an unenclosed interior stairway within and serving a single R-2 dwelling unit classified as an exit stairway"? Answer: "No. An unenclosed stairway contained within and serving a single dwelling unit is not considered an exit; the unenclosed stairway is deemed to be a component of the exit access portion of the means of egress." This proposal includes unenclosed interior stairways in the definition of "exit access." It is unfortunate that such a relatively fundamental question requires an official ICC interpretation. This proposal is technically consistent with this recent interpretation and provides clarification that will hopefully eliminate similar questions in the future.

This proposal honors the fundamental means of egress definitions and currently stated travel distance requirements. Its straight forward approach to means of egress design maintains the performance nature of Chapter 10 thereby allowing flexibility in the application of various means of egress design requirements. It does not define requirements through exception. The suggested clarification is also compatible with progressive approaches to building design that employ compartmentation concepts. It is highly recommended that this proposal be approved so as to promote uniformity in the application of these important provisions while providing for a high degree of occupant safety.

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

Committee Action: Disapproved

Committee Reason: The committee feels the code needs to be addressed comprehensively regarding open stairways in all occupancies as exits or exit access, and how travel distance should be measured along those stairways. There is confusion as to whether the definition for 'exit' would make a stairway no longer an exit if there is an exception for the exit enclosure. This concept should be referred to the Code Technologies Committee.

Section 1019 says each floor has to have access to two exits, not two exits directly from the floor, therefore open stairways can serve as part of a means of egress. A suggestion would be to move Section 1021.1 enclosure requirements to 1019 and apply it to stairways in general.

Assembly Action: None

Individual Consideration Agenda

This item is on the agenda for individual consideration because public comments were submitted.

Public Comment 1:

Philip Brazil, PE, Reid Middleton, Inc., representing himself, requests Approval as Modified by this public comment.

Modify proposal as follows:

1002.1 (IFC [B] 1002.1) Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

EXIT. That portion of a means of egress system ~~which~~ that is separated from other spaces of a building or structure by fire-resistance-rated construction and opening protectives as required to provide a protected path of egress travel between the exit access and the exit discharge or a public way. Exits include exterior exit doors at ~~ground level~~ the exit discharge or a public way, exit enclosures, exit passageways, exterior exit stairways, exterior exit ramps and horizontal exits.

EXIT ACCESS. That portion of a means of egress system that leads from any occupied portion within a building or structure to an exit. Exit access ~~include~~ includes occupied floor areas, aisle accessways, aisles, unenclosed interior egress stairways, unenclosed interior egress ramps, corridors and egress balconies.

EXIT DISCHARGE. That portion of the means of egress system that leads from the termination of an exit to a public way.

TRAVEL DISTANCE. The measurement of the horizontal and vertical path of egress travel in the exit access portion of the means of egress system until arrival at an exit. Such path shall include egress travel between various ~~building~~ floor levels such as mezzanines and stories connected by unenclosed interior egress stairways or ramps.

1007.3 (IFC [B] 1007.3) (Supp) Egress stairways. In order to be considered part of an accessible means of egress, an egress stairway shall have a clear width of 48 inches (1219 mm) minimum between handrails and shall either incorporate an area of refuge within an enlarged floor-level landing or shall be accessed from either an area of refuge complying with Section 1007.6 or a horizontal exit.

Exceptions:

1. The area of refuge is not required at unenclosed interior stairways as permitted by Section 1020.1 in buildings or facilities that are equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
2. The clear width of 48 inches (1219 mm) between handrails is not required at egress stairways in buildings or facilities equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
3. Areas of refuge are not required at egress stairways in buildings or facilities equipped throughout ~~by~~ with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
4. The clear width of 48 inches (1219 mm) between handrails is not required for egress stairways accessed from a horizontal exit.
5. Areas of refuge are not required at egress stairways serving open parking garages.
6. Areas of refuge are not required for smoke protected seating areas complying with Section 1025.6.2.
7. ~~The~~ Areas of refuge are not required in Group R-2 occupancies.

1016.1 (IFC [B] 1016.1) (Supp) Travel distance limitations. Exits shall be so located such that the maximum ~~length of egress~~ travel distance, measured from the most remote point within the exit access to the entrance to an exit along the natural and unobstructed path of egress travel, shall not exceed the distances given in Table 1016.1.

Where the path of egress travel includes unenclosed interior egress stairways or ramps within the exit access, the distance of egress travel on such ~~unenclosed means of egress~~ components shall also be included in the travel distance measurement. The measurement along the egress stairways shall be made on a plane parallel and tangent to the stair tread nosings in the center of the stairway.

Exceptions:

1. Travel distance in open parking garages is permitted to be measured to the closest riser of an ~~open~~ unenclosed egress stairway that serves only the parking garage.
2. Travel distance in Group A-5 occupancies where all portions of the means of egress are essentially open to the outside is permitted to be measured to the closest riser of an ~~open~~ unenclosed egress stairway or the closest slope of an ~~open~~ unenclosed egress ramp.
3. Travel distance in Group I-3 occupancies as provided in Section 408.3.6 is permitted to be measured to the entrance of the exit enclosure.
4. Travel distance for stages, fly galleries and gridirons as provided in Section 410.5.3 is permitted to be measured to the closest riser of an ~~open~~ unenclosed egress stairway.

1019.1 (IFC [B] 1019.1) (Supp) Exits from stories. All spaces within each story shall have access to the minimum number of approved independent exits as specified in Table 1019.1 based on the occupant load of the story. For the purposes of this chapter, occupied roofs shall be provided with exits as required for stories. The required number of exits from any story shall be maintained until arrival at ~~grade~~ the exit discharge or ~~the~~ a public way.

Exceptions:

1. As modified by Section 403.15 (2007 Supp - Additional exit stairway).
2. As modified by Section 1019.2.
3. In Groups R-2 and R-3 occupancies, one means of egress is permitted within and from individual dwelling units with a maximum occupant load of 20 where the dwelling unit is equipped throughout with an automatic sprinkler system in accordance with Section~~s~~ 903.3.1.1 or 903.3.1.2.

1020.1 (IFC [B] 1020.1) (Supp) Enclosures required. Interior ~~exit~~ stairways and interior ~~exit~~ ramps shall be enclosed with fire barriers constructed in accordance with Section 706 or horizontal assemblies constructed in accordance with Section 711, or both. Such exit 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 exit enclosure shall include any basements but not any mezzanines. Exit enclosures shall have a fire-resistance rating not less than the floor assembly penetrated, but need not exceed 2 hours. An exit enclosure shall not be used for any purpose other than as a means of egress.

Exceptions: The following exceptions are to the requirement for exit enclosure construction. Unenclosed stairways and ramps as permitted by the following exceptions do not qualify as an exit component ~~for~~ of the means of egress ~~design purposes~~.

1. In all occupancies, other than Group H and I occupancies, a stairway is not required to be enclosed when the stairway serves an occupant load of less than 10 and the stairway complies with either Item 1.1 or 1.2. In all cases, the maximum number of connecting open stories shall not exceed two.
   1.1. The stairway is open to not more than one story above the story at the level of exit discharge; or
   1.2. The stairway is open to not more than one story below the story at the level of exit discharge.
2. Stairways and ramps in Group A-5 occupancies where all portions of the means of egress are essentially open to the outside need not be enclosed.
3. Stairways serving and contained within a single residential dwelling unit or sleeping unit in Group R-1, R-2 or R-3 occupancies are not required to be enclosed.
4. Stairways in open parking garages that serve only the parking garage are not required to be enclosed.
5. Stairways in Group I-3 occupancies~~,~~ as provided ~~for~~ in Section 408.3.6~~,~~ are not required to be enclosed.
6. Stairways from stages, fly galleries and gridirons as provided ~~for~~ in Section 410.5.3 are not required to be enclosed.
7. Stairways from balconies, galleries and press boxes as provided for in Section 1025.5.1~~,~~ are not required to be enclosed.
8. In other than Group H and I occupancies, a maximum of 50 percent of egress stairways serving one adjacent ~~floor~~ story are not required to be enclosed, provided at least two means of egress are provided from both ~~floors~~ stories served by the unenclosed stairways. Any two such interconnected ~~floors~~ stories shall not be open to other ~~floors~~ stories. ~~Unenclosed exit stairways shall be remotely located as required in Section 1015.2.~~

9. In other than Groups H and I occupancies, interior egress stairways serving only the first and second stories of a building equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 are not required to be enclosed, provided at least two means of egress are provided from both ~~floors~~ stories served by the unenclosed stairways. Such interconnected stories shall not be open to other stories. ~~Unenclosed exit stairways shall be remotely located as required in Section 1015.2.~~

Commenter's Reason: This public comment was developed in collaboration with the proponent who is also submitting a public comment. The additional revisions to the original proposal in this public comment are intended to supplement those by the proponent in his public comment. A comparison of these public comments will indicate that all of the proposed changes in this public comment are either identical to, or in addition to, the proposed revisions in the proponent's public comment. The proponent's public comment proposes revisions that are identical to those in this public comment except for Section 1019.1 where several revisions are proposed that are not in this public comment.

The purpose for this public comment is to propose additional editorial and technical revisions to those in the proponent's public comment that will further clarify the text.

Exterior exit doors at "ground level" in the definition of "exit" in Section 1002.1 and arrival at "grade or the public way" in Section 1019.1 are changed to "the exit discharge or a public way," (1) for consistency with egress travel between the exit access and "the exit discharge or a public way" in the definition of exit, (2) for consistency with the definitions of "exit enclosure" and "exit passageway in Section 1002.1, and (3) to eliminate a conflict with Section 1024.1 where the exit discharge is required to be "at grade or shall provide direct access to grade."

References to "stairways" in provisions applicable to the means of egress are changed to "egress stairways," which is a continuation of the revisions in the original proposal. References to "egress stairways and ramps" in the exit access are changed to "interior egress stairways and ramps" to distinguish between "unenclosed interior egress stairways" and "unenclosed interior egress ramps" at the definition of "exit access" in the original proposal, and "exterior exit stairways" and "exterior exit ramps" in the definition of "exit."

In Paragraph #1 of Section 1016.1, "length of egress travel" is changed to "travel distance" for consistency with use of the same term in this section and throughout the IBC, and for consistency with the definition of "travel distance" in the original proposal. In Paragraph #2, "unenclosed means of egress" is deleted because it is superfluous. In the exceptions, "open" stairways and ramps are changed to "unenclosed" stairways and ramps for consistency with Paragraph #2 of this section and the definition of "travel distance" in the original proposal. In Exception #1, "that serves only the parking garage" is added for consistency with corresponding Exception #4 in Section 1020.1.

In Section 1020.1, interior "exit stairways" and interior "exit ramps" are changed to interior "stairways" and interior "ramps" for consistency with the revisions to Section 1020.1 in the original proposal. The last sentence in Exceptions #8 and #9 to Section 1020.1 is deleted because it is a superfluous cross-reference to requirements of Section 1015.2 for the remoteness of exits or exit access doorways where two or more exits or exit access doorways are required.

Public Comment 2:

Philip Brazil, PE, Reid Middleton, Inc., representing himself, requests Approval as Modified by this public comment.

Modify proposal as follows:

1002.1 (IFC [B] 1002.1) Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

EXIT. That portion of a means of egress system ~~which~~ that is separated from other spaces of a building or structure by fire-resistance-rated construction and opening protectives as required to provide a protected path of egress travel between the exit access and the exit discharge or a public way. Exits include exterior exit doors at ~~ground level~~ the exit discharge or a public way, exit enclosures, exit passageways, exterior exit stairways, exterior exit ramps and horizontal exits.

EXIT ACCESS. That portion of a means of egress system that leads from any occupied portion within a building or structure to an exit. Exit access ~~include~~ includes occupied floor areas, aisle accessways, aisles, unenclosed interior egress stairways, unenclosed interior egress ramps, corridors and egress balconies.

EXIT DISCHARGE. That portion of the means of egress system that leads from the termination of an exit to a public way.

TRAVEL DISTANCE. The measurement of the horizontal and vertical path of egress travel in the exit access portion of the means of egress system until arrival at an exit. Such path shall include egress travel between various ~~building~~ floor levels such as mezzanines and stories connected by unenclosed interior egress stairways or ramps.

1007.3 (IFC [B] 1007.3) (Supp) Egress stairways. In order to be considered part of an accessible means of egress, an egress stairway shall have a clear width of 48 inches (1219 mm) minimum between handrails and shall either incorporate an area of refuge within an enlarged floor-level landing or shall be accessed from either an area of refuge complying with Section 1007.6 or a horizontal exit.

Exceptions:

1. The area of refuge is not required at unenclosed interior stairways as permitted by Section 1020.1 in buildings or facilities that are equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
2. The clear width of 48 inches (1219 mm) between handrails is not required at egress stairways in buildings or facilities equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
3. Areas of refuge are not required at egress stairways in buildings or facilities equipped throughout ~~by~~ with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
4. The clear width of 48 inches (1219 mm) between handrails is not required for egress stairways accessed from a horizontal exit.
5. Areas of refuge are not required at egress stairways serving open parking garages.
6. Areas of refuge are not required for smoke protected seating areas complying with Section 1025.6.2.
7. ~~The~~ Areas of refuge are not required in Group R-2 occupancies.

1016.1 (IFC [B] 1016.1) (Supp) Travel distance limitations. Exits shall be so located such that the maximum ~~length of egress~~ travel distance, measured from the most remote point within the exit access to the entrance to an exit along the natural and unobstructed path of egress travel, shall not exceed the distances given in Table 1016.1.

Where the path of egress travel includes unenclosed interior egress stairways or ramps within the exit access, the distance of egress travel on such ~~unenclosed means of egress~~ components shall also be included in the travel distance measurement. The measurement along the egress stairways shall be made on a plane parallel and tangent to the stair tread nosings in the center of the stairway.

Exceptions:

1. Travel distance in open parking garages is permitted to be measured to the closest riser of an ~~open~~ unenclosed egress stairway that serves only the parking garage.
2. Travel distance in Group A-5 occupancies where all portions of the means of egress are essentially open to the outside is permitted to be measured to the closest riser of an ~~open~~ unenclosed egress stairway or the closest slope of an ~~open~~ unenclosed egress ramp.
3. Travel distance in Group I-3 occupancies as provided in Section 408.3.6 is permitted to be measured to the entrance of the exit enclosure.
4. Travel distance for stages, fly galleries and gridirons as provided in Section 410.5.3 is permitted to be measured to the closest riser of an ~~open~~ unenclosed egress stairway.

1019.1 (IFC [B] 1019.1) (Supp) Exits from stories. ~~All spaces within~~ Each story within a building or structure shall be provided with, or have access to, the minimum number of approved independent exits as specified in Table 1019.1 based on the occupant load of the story. Where access to exits is from one story to another, travel distance shall not exceed that specified in Section 1016. For the purposes of this chapter, occupied roofs shall be provided with exits, or access to exits, as required for stories. The required number of exits, or access to exits, from any story shall be maintained until arrival at ~~grade~~ the exit discharge or ~~the~~ a public way.

Exceptions:

~~1. As modified by Section 403.15 (2007 Supp - Additional exit stairway).~~
1. As modified by Section 1019.2.
2. In Groups R-2 and R-3 occupancies, one means of egress is permitted within and from individual dwelling units with a maximum occupant load of 20 where the dwelling unit is equipped throughout with an automatic sprinkler system in accordance with Sections 903.3.1.1 or 903.3.1.2.

1020.1 (IFC [B] 1020.1) (Supp) Enclosures required. Interior ~~exit~~ stairways and interior ~~exit~~ ramps shall be enclosed with fire barriers constructed in accordance with Section 706 or horizontal assemblies constructed in accordance with Section 711, or both. Such exit 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 exit enclosure shall include any basements but not any mezzanines. Exit enclosures shall have a fire-resistance rating not less than the floor assembly penetrated, but need not exceed 2 hours. An exit enclosure shall not be used for any purpose other than as a means of egress.

Exceptions: The following exceptions are to the requirement for exit enclosure construction. Unenclosed stairways and ramps as permitted by the following exceptions do not qualify as an exit component ~~for~~ of the means of egress ~~design purposes~~.

1. In all occupancies, other than Group H and I occupancies, ~~a stairway is~~ stairways and ramps are not required to be enclosed ~~when~~ where the stairway or ramp serves an occupant load of less than 10 and the stairway or ramp complies with either Item 1.1 or 1.2. In all cases, the maximum number of connecting open stories or ramps shall not exceed two.
   1.1. The stairway or ramp is open to not more than one story above the story at the level of exit discharge; or
   1.2. The stairway or ramp is open to not more than one story below the story at the level of exit discharge.
2. Stairways and ramps in Group A-5 occupancies where all portions of the means of egress are essentially open to the outside need not be enclosed.
3. Stairways and ramps serving and contained within a single residential dwelling unit or sleeping unit in Group R-1, R-2 or R-3 occupancies are not required to be enclosed.
4. Stairways and ramps in open parking garages that serve only the parking garage are not required to be enclosed.
5. Stairways and ramps in Group I-3 occupancies~~,~~ as provided ~~for~~ in Section 408.3.6~~,~~ are not required to be enclosed.
6. Stairways and ramps from stages, fly galleries and gridirons as provided ~~for~~ in Section 410.5.3 are not required to be enclosed.
7. Stairways and ramps from balconies, galleries and press boxes as provided ~~for~~ in Section 1025.5.1~~,~~ are not required to be enclosed.
8. In other than Group H and I occupancies, a maximum of 50 percent of egress stairways serving one adjacent ~~floor~~ story are not required to be enclosed, provided at least two means of egress are provided from both ~~floors~~ stories served by the unenclosed stairways. Any two such interconnected ~~floors~~ stories shall not be open to other ~~floors~~ stories. ~~Unenclosed exit stairways shall be remotely located as required in Section 1015.2.~~
9. In other than Groups H and I occupancies, interior egress stairways serving only the first and second stories of a building equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 are not required to be enclosed, provided at least two means of egress are provided from both ~~floors~~ stories served by the unenclosed stairways. Such interconnected stories shall not be open to other stories. ~~Unenclosed exit stairways shall be remotely located as required in Section 1015.2.~~

Commenter's Reason: This public comment is the second of two public comments that were developed in collaboration with the proponent who is also submitting a public comment. The purpose for the first public comment is to propose additional editorial and technical revisions to those in the proponent's public comment that will further clarify the text. These additional revisions are intended to supplement those by the proponent in his public comment. A comparison of first public comment with the proponent's public comment will indicate that all of the proposed changes in the first public comment are either identical to, or in addition to, the proposed revisions in the proponent's public comment. The proponent's public comment proposes revisions that are identical to those in the first public comment except for Section 1019.1 where several revisions are proposed that are not in the first public comment.

This public comment contains all of the revisions in the first public comment plus additional revisions that, taken together, propose a more comprehensive solution to the issues addressed in the original proposal and is intended as an alternative to the proponent's public comment. The reason statement from the first public comment is reproduced at the end of this reason statement.

The purpose for this public comment can best be explained by summarizing the provisions of Chapter 10 applicable to the relationship between the exit access, the exit, and the exit discharge as revised by the original proposal and this public comment.

Section 1015.1 requires two exits or exit access doorways from any space where certain conditions are met. With this and similar requirements in Section 1015, occupants are provided with adequate egress from spaces within a building. They remain in the exit access. The requirements of Section 1015 for remoteness of exits or exit access doorways, where two or more are required, are not affected by the original proposal or this public comment.

Paragraph #1 of Section 1016.1 requires exits to be located such that travel distance is limited. The measurement of travel distance from the most remote point within the exit access to the entrance to an exit is not affected by the original proposal or this public comment. Occupants remain in the exit access. The required locations of the exits are not specified. Note that "travel distance" is defined as a "measurement of the horizontal and vertical path of egress travel in the exit access portion of the means of egress system until arrival at an exit" and includes "egress travel between various floor levels such as mezzanines and stories connected by unenclosed interior egress stairways or ramps."

Paragraph #2 of Section 1016.1 requires the measurement of travel distance to include egress travel on unenclosed interior egress stairways and ramps where the path of egress travel within the exit access includes them. Occupants remain in the exit access. The required locations of the exits are not specified. Note that unenclosed interior egress stairways and ramps are included as components in the definition of the "exit access" (Section 1002.1).

Section 1019.1 requires each story within a building or structure to be provided with, or have access to, a minimum number of approved independent exits based on the occupant load of each story. Occupants remain in the exit access until arrival at an exit. The required locations of the exits are not specified because providing access to exits is sufficient to comply with the requirements of this section. Where access to exits is from one story to another, travel distance is limited to that specified in Section 1016. As noted above, the measurement of travel distance is required to include egress travel on unenclosed interior egress stairways and ramps where the path of egress travel within the exit access includes them. The reference to structures as well as buildings is for consistency with the definitions of "exit" and "exit access" in Section 1002.1.

Section 1020.1 requires interior stairways and ramps to be enclosed with fire barriers or horizontal assemblies, or both, thus forming exit enclosures. There are several exceptions that enable certain stairways or ramps to be unenclosed. This section, however, does not apply to the determination of which components of the means of egress system qualify as components of the exit. This determination is based solely on the definition of the "exit" in Section 1002.1, which includes exit enclosures. Unenclosed interior egress stairways and ramps qualify as components of the exit access based on the definition of "exit access" in Section 1002.1. Unenclosed interior nonegress stairways and ramps do not qualify as components of the exit or exit access.

Whether an interior stairway or ramp is required by Section 1020l.1 to be an exit enclosure, or is exempted by one of the exceptions to Section 1020.1, is not pertinent to whether the stairway or ramp qualifies as a component of the exit. The purpose for Section 1020.1 is to provide fire containment of the stairway or ramp in the form of an enclosure consisting of fire-resistance-rated construction and protected openings and penetrations. The existence of the stairway or ramp within the enclosure is pertinent only to the extent that protection greater than required by Section 707.2 for a shaft enclosure of an opening through a floor assembly is warranted, which is typically the case for egress stairways and ramps.

Returning to Section 1019.1, occupants remain in the exit access until arrival at an exit and the required locations of the exits are not specified. Exits are not required at each story. The exit access extends from each occupied portion within a building or structure to an exit. Based only on the egress provisions of Sections 1016.1 and 1019.1, three or more stories connected by unenclosed interior egress stairways or ramps would appear to be possible. This appearance, however, does not exist because the fire containment provisions of Section 1020.1 effectively prohibit more than two stories from being connected by unenclosed interior egress stairways or ramps with certain exceptions.

Several of the current exceptions in Section 1020.1 are intended to modify the required determination of travel distance, where the path of egress travel includes the stairway, as well as exempt the stairway from the requirements for fire containment. This intent is retained in the original proposal by virtue of the corresponding exceptions in Section 1016.1 and is not affected by this public comment. Exceptions #1, #2, #3 and #4 in Section 1016.1 correspond to Exceptions #4, #2, #5 and #6, respectively, in Section 1020.1. There are no exceptions in Section 1016.1 corresponding to Exceptions #1, #3, #8 and #9 in Section 1020.1 but the current text does not intend to modify the required determination of travel distance for these exceptions and neither the original proposal nor this public comment propose to change this.

Exception #1 to Section 1019.1 is deleted because Section 403.15 (Section 403.17 in the 2007 Supplement) intends to require an additional interior nonegress stairway protected by an exit enclosure. An egress stairway is not intended. Refer to the 2007 Supplement, which states that an additional stairway "meeting the requirements of Sections 1009 and 1020 shall be provided in addition to the minimum number of exits required by Section 1019.1." The reference to "exit stairway" in the 2007 Supplement has no technical meaning and is an example of why the revisions proposed in the original proposal and this public comment are warranted and justified.

The exceptions in Section 1020.1 are limited to stairways except for Exception #2. While rare, it is possible for a ramp to connect adjacent stories. Thus, ramps are added to stairways in Exceptions #1 and #3 through #7. The addition of ramps to Exceptions #8 and #9 is not proposed because these exceptions address specific design conditions within the means of egress system.

Exterior exit doors at "ground level" in the definition of "exit" in Section 1002.1 and arrival at "grade or the public way" in Section 1019.1 are changed to "the exit discharge or a public way," (1) for consistency with egress travel between the exit access and "the exit discharge or a public way" in the definition of exit, (2) for consistency with the definitions of "exit enclosure" and "exit passageway in Section 1002.1, and (3) to eliminate a conflict with Section 1024.1 where the exit discharge is required to be "at grade or shall provide direct access to grade."

References to "stairways" in provisions applicable to the means of egress are changed to "egress stairways," which is a continuation of the revisions in the original proposal. References to "egress stairways and ramps" in the exit access are changed to "interior egress stairways and ramps" to distinguish between "unenclosed interior egress stairways" and "unenclosed interior egress ramps" at the definition of "exit access" in the original proposal, and "exterior exit stairways" and "exterior exit ramps" in the definition of "exit."

In Paragraph #1 of Section 1016.1, "length of egress travel" is changed to "travel distance" for consistency with use of the same term in this section and throughout the IBC, and for consistency with the definition of "travel distance" in the original proposal. In Paragraph #2, "unenclosed means of egress" is deleted because it is superfluous. In the exceptions, "open" stairways and ramps are changed to "unenclosed" stairways and ramps for consistency with Paragraph #2 of this section and the definition of "travel distance" in the original proposal. In Exception #1, "that serves only the parking garage" is added for consistency with corresponding Exception #4 in Section 1020.1.

In Section 1020.1, interior "exit stairways" and interior "exit ramps" are changed to interior "stairways" and interior "ramps" for consistency with the revisions to Section 1020.1 in the original proposal. The last sentence in Exceptions #8 and #9 to Section 1020.1 is deleted because it is a superfluous cross-reference to requirements of Section 1015.2 for the remoteness of exits or exit access doorways where two or more exits or exit access doorways are required.

Public Comment 3:

Gregory R. Keith, Professional heuristic Development, representing the Boeing Company, requests Approval as Modified by this public comment.

Anne Von Weller, City of Murray, UT, requests Approval as Modified by this public comment.

Modify proposal as follows:

1002.1 (IFC [B] 1002.1) Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

EXIT. That portion of a means of egress system which is separated from other spaces of a building or structure by fire-resistance-rated construction and opening protectives as required to provide a protected path of horizontal and/or vertical egress travel between the exit access and the exit discharge or a public way. Exits include exterior exit doors at ground level, exit enclosures, exit passageways, exterior exit stairways, exterior exit ramps and horizontal exits.

EXIT ACCESS. That portion of a means of egress system that leads from any occupied portion of a building or structure to an exit. Exit access includes occupied floor areas, aisle accessways, aisles, unenclosed interior stairways, unenclosed interior ramps, corridors and egress balconies.

EXIT DISCHARGE. That portion of the means of egress system that leads from the termination of an exit to a public way.

TRAVEL DISTANCE. The measurement of the horizontal and/or vertical path of egress travel in the exit access portion of the means of egress system until arrival at an exit. Such path shall include travel between various floor ~~building~~ levels such as mezzanines and stories connected by unenclosed stairways or ramps.

1007.3 (IFC [B] 1007.3) (Supp) Egress stairways. In order to be considered part of an accessible means of egress, an egress stairway shall have a clear width of 48 inches (1219 mm) minimum between handrails and shall either incorporate an area of refuge within an enlarged floor-level landing or shall be accessed from either an area of refuge complying with Section 1007.6 or a horizontal exit.

Exceptions:

1. The area of refuge is not required at unenclosed interior egress stairways as permitted by Section 1020.1 in buildings or facilities that are equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
2. The clear width of 48 inches (1219 mm) between handrails is not required at egress stairways in buildings or facilities equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
3. Areas of refuge are not required at egress stairways in buildings or facilities equipped throughout by an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
4. The clear width of 48 inches (1219 mm) between handrails is not required for egress stairways accessed from a horizontal exit.
5. Areas of refuge are not required at egress stairways serving open parking garages.
6. Areas of refuge are not required for smoke protected seating areas complying with Section 1025.6.2.
7. ~~The~~ Areas of refuge are not required in Group R-2 occupancies.

1016.1 (IFC [B] 1016.1) (Supp) Travel distance limitations. Exits shall be so located such that the maximum ~~length of~~ ~~egress~~ travel distance, measured from the most remote point within the exit access to the entrance to an exit along the natural and unobstructed path of egress travel, shall not exceed the distances given in Table 1016.1.

Where the path of egress travel includes unenclosed stairways or ramps within the exit access, the distance of travel on such unenclosed means of egress components shall also be included in the travel distance measurement. The measurement along such stairways shall be made on a plane parallel and tangent to the stair tread nosings in the center of the stairway.

Exceptions:

1. Travel distance in open parking garages that serve only the parking garage, is permitted to be measured to the closest riser of an unenclosed ~~open~~ stairway.
2. Travel distance in Group A-5 occupancies where all portions of the means of egress are essentially open to the outside is permitted to be measured to the closest riser of an unenclosed ~~open~~ stairway or the closest slope of an unenclosed ~~open~~ ramp.
3. Travel distance in Group I-3 occupancies as provided in Section 408.3.6 is permitted to be measured to the entrance of the exit enclosure.
4. Travel distance for stages, fly galleries and gridirons as provided in Section 410.5.3 is permitted to be measured to the closest riser of an unenclosed ~~open~~ stairway.

1019.1 (IFC [B] 1019.1) (Supp) Exits from stories. All spaces within each story shall have access to the minimum number of ~~approved independent~~ exits in accordance with Section 1015.1 ~~as specified in Table 1019.1 based on the occupant load of the story~~. The number of exits, or access to exits, from each story shall not be less than that indicated in Table 1019.1 based on the occupant load served. Where access to exits is from one story to another, travel distance shall not exceed that specified in Section 1016. For the purposes of this chapter, occupied roofs shall be provided with exits, or access to exits, as required for stories. The required number of exits, or access to exits, from any story shall be maintained until arrival at grade or the public way.

Exceptions:

1~~2~~. Stories shall be permitted to be served by a single exit in accordance with the provisions of ~~As modified by~~ Section 1019.2.
2~~3~~. In Groups~~-~~ R-2 and R-3 occupancies, access to a single exit ~~one means of egress~~ is permitted within ~~and from~~ individual dwelling units with maximum occupant load of 20 ~~where the dwelling unit is equipped throughout with an automatic sprinkler system in accordance with Sections 903.3.1.1 or 903.3.1.2~~.
3~~4~~. An additional exit stairway shall be provided in accordance with the provisions of ~~As modified by~~ Section 403.1~~5~~7 (2007 Supp - Additional exit stairway).

1020.1 (IFC [B] 1020.1) (Supp) Enclosures required. Interior ~~exit~~ stairways and interior ~~exit~~ ramps shall be enclosed with fire barriers constructed in accordance with Section 706 or horizontal assemblies constructed in accordance with Section 711, or both. Such exit 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 exit enclosure shall include any basements but not any mezzanines. Exit enclosures shall have a fire-resistance rating not less than the floor assembly penetrated, but need not exceed 2 hours. An exit enclosure shall not be used for any purpose other than means of egress.

Exceptions: The following exceptions are to the requirement for exit enclosure construction. Unenclosed stairways and ramps as permitted by the following exceptions do not qualify as an exit component for means of egress design purposes.

1. In all occupancies, other than Group H and I occupancies, a stairway is not required to be enclosed when the stairway serves an occupant load of less than 10 and the stairway complies with either Item 1.1 or 1.2. In all cases, the maximum number of connecting open stories shall not exceed two.
   1.1. The stairway is open to not more than one story above the story at the level of exit discharge; or
   1.2. The stairway is open to not more than one story below the story at the level of exit discharge.
2. Stairways and ramps in Group A-5 occupancies where all portions of the means of egress are essentially open to the outside need not be enclosed.
3. Stairways serving and contained within a single residential dwelling unit or sleeping unit in Group R-1, R-2 or R-3 occupancies are not required to be enclosed.
4. Stairways in open parking garages that serve only the parking garage are not required to be enclosed.
5. Stairways in Group I-3 occupancies, as provided for in Section 408.3.6, are not required to be enclosed.
6. Stairways from stages, fly galleries and gridirons as provided for in Section 410.5.3 are not required to be enclosed.
7. Stairways from balconies, galleries and press boxes as provided for in Section 1025.5.1, are not required to be enclosed.
8. In other than Group H and I occupancies, a maximum of 50 percent of egress stairways serving one adjacent floor are not required to be enclosed, provided at least two means of egress are provided from both floors served by the unenclosed stairways. Any two such interconnected floors shall not be open to other floors. Unenclosed egress stairways shall be remotely located as required in Section 1015.2.
9. In other than Groups H and I occupancies, interior egress stairways serving only the first and second stories of a building equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 are not required to be enclosed, provided at least two means of egress are provided from both floors served by the unenclosed stairways. Such interconnected stories shall not be open to other stories. Unenclosed egress stairways shall be remotely located as required in Section 1015.2.

Commenter's Reason: This proposal is intended to clarify the fundamental relationship between exit access travel distance determination requirements and enclosed or unenclosed stairway and ramp provisions. This issue has been one of considerable debate during the last several code development cycles. Past efforts to clarify related technical provisions have actually further confused the matter. There were no less than eight related code change proposals that were submitted for consideration by the ICC Means of Egress Code Development Committee in Palm Springs. Those proposals supported opposing points of view on the issue. The code development committee chose not to take sides and referred the matter to the ICC Code Technology Committee (CTC) for resolution. The published report of committee actions stated, "The committee feels that the code needs to be addressed comprehensively regarding open stairways in all occupancies as exits or exit access, and how travel distance should be measured along those stairways. There is confusion as to whether the definition for 'exit' would make a stairway no longer an exit if there is an exception for the exit enclosure. This concept should be referred to the Code Technologies Committee." Section 1019 says each floor has to have access to two exits, not two exits directly from that floor, therefore open stairways can serve as a part of a means of egress. A suggestion would be to move Section 1021.1 enclosure requirements to 1019 and apply it to stairways in general."

Given the relatively infrequent CTC meeting dates, it is impossible for that committee to consider—much less solve—this matter prior to the 2008 public comment submittal deadline. All concerned agree that it would be best if the interpretive disagreement could be resolved for the 2009 Edition of the International Building Code. Since Item E103-07/08 was the most comprehensive of the various submittals, interested parties felt that it would best serve as the vehicle for public comment. This public comment represents a consensus of the proponents of all of the related Palms Springs proposals.

As indicated in the original E103 reason statement, the differences in opinion likely stem from legacy experience. The probable source of the differences in technical perspective lies with the definition of "exit" in the former BOCA National Building Code. That definition stated, "That portion of the *means of egress* which is separated from all other spaces of a building or structure by construction and opening protectives as required for exits to provide a protected way of travel to the *exit discharge* (see Section 1006.0). Exits include exterior exit doors, exit *stairways* (see Sections 1014.0 and 1015.0), exit passageways (see Section 1020.0) and *horizontal exits* (see Section 1019.0)." Please note that within that particular means of egress system, the exit stairway was an exit component as opposed to the exit enclosure as prescribed in the IBC. Although these appear to be two different approaches to means of egress, each system results in virtually the same building design. This is due to the relationships between the various applicable technical requirements for stairway enclosure and travel distance.

As stated in the 2006 Edition of the *International Building Code, Code and Commentary, Volume I* (Pg 10-110), the fundamental purpose of enclosing stairways is to prevent the upward migration of fire and associated byproducts. This is currently properly addressed in Section 1020.1. This public comment clarifies the point by removing the reference to "exit" stairways. Basically, all stairways must be enclosed. The exceptions to Section 1020.1 represent instances in which fire migration beyond a single story is acceptable. Where enclosure of a stairway is not required based on permitted exception, there is no exit enclosure; and therefore, no exit by definition. Since such unenclosed stairways (and ramps) are technically exit access components, travel distance is required to be accounted for in accordance with the provisions of Section 1016.1. Several of the Section 1020.1 exception conditions also represent situations where occupant tenability--as well as fire migration--are no longer a concern. Examples are open parking garages and open-air stadiums. In these cases, there are correlated exceptions to the travel distance requirements of Section 1016.1. As such, in these specific cases an unenclosed stairway has the effect of being a formal exit for building design purposes. It is for this reason that two subtly different approaches to means of egress design result in virtually identical building designs. This public comment supports current commentary, educational doctrine and ICC interpretations. This public comment does not contain legacy language; however, results in similar means of egress designs.

It should also be noted that Section 1019.1 access to exit provisions have been modified to clarify procedure and intent consistent with the Code Development Committee's reason statement.

Should it be desired to return to former language to arrive at the same design, modification of several key provisions and the inclusion of numerous exceptions would be required. For example, the definition of "exit" would need to read similar to the former BOCA definition. Since the term "exit enclosure" would be eliminated, stairway enclosure requirements would need to be relocated into Section 1009 (Stairways). Exceptions to exit termination and travel distance requirements would need to be created. Arguably, such provisions would create only more confusion, except for those familiar with specific legacy intent.

It is felt that current IBC exit requirements are fundamentally sound and properly located. This public comment clarifies the intent of the provisions so as to eliminate any tendency to apply former legacy logic. Approval of this public comment will improve the usability of the 2009 Edition of the International Building Code while maintaining requirements that provide for a high degree of occupant safety. (For additional technical information, please refer to the original E103-07/08 reason statement as published in Volume 1, Proposed Changes to the 2006 Edition of the International Building Code.)

Final Action: AS AM AMPC____ D

E104-07/08
1002.1 (IFC [B] 1002.1)

Proposed Change as Submitted:

Proponent: Sarah A. Rice, CBO, Schirmer Engineering Corporation

Revise definition as follows:

1002.1 (IFC [B] 1002.1) Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

EXIT. That portion of a means of egress system which unless specifically exempted by Section 1020.1, is separated from other interior spaces of a building or structure by fire-resistance-rated construction and opening protectives as required to provide a protected path of egress travel between the exit access and the exit discharge. Exits include exterior exit doors at ground level, exit enclosures, exit passageways, exterior exit stairs, exterior exit ramps and horizontal exits.

Reason: Recent interpretations from various jurisdictions have brought to light that there appears to be some confusion regarding when an interior stairway can be considered as an "exit" vs. "exit access."

While the definition in Section 1002.1 states that and "exit" is "That portion of a means of egress system which is separated from other interior spaces of a building or structure by fire-resistance-rated construction and opening protectives…" the code, in Section 1020.1, has like in so many instances exceptions to when the "enclosure" is not required. The exceptions to the enclosure do not make the exit stair no longer an exit, they just make it an exit stair that doesn't have to have the physical enclosure around it.

The proposed language is intended to bring this point to light. That even if there is no physical enclosure around a stairway, it can still be considered to be an "exit" stairway or "vertical exit."

As an example of the inconsistent application of the definition of "exit" is brought to light when one looks at a stairway that connects multiple levels within an open parking garage. The code in Section 1019.1 requires that each story within each building, including open parking garages, be provided with a minimum of 2 independent exits (unless the building qualifies as a single-exit building). But Exception No. 4 in Section 1020.0 (2007 Supp) specifically states that "Stairways in open parking structures that serve only the parking structure are not required to be enclosed." But are they then still an "exit" – yes, just an exit without a physical enclosure.

This point is further emphasized by the provision in Section 1016.1 Exception 1, which gives direction on how exit access travel distance stops at the top of an unenclosed vertical exit in an open parking garage. This is needed because you do not measure exit access distance down a vertical exit (i.e., stairway or ramp).

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

Committee Action: **Disapproved**

Committee Reason: A definition should not have an exception. This should be referred to the Code Technologies Committee. See the committee action on E103-07/08.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Sarah A. Rice, CBO, Schirmer Engineering Corporation, requests Approval as Modified by this public comment.

Modify proposal as follows:

EXIT. That portion of a means of egress ~~system which unless specifically exempted by Section 1020.1, is separated from other interior spaces of a building or structure by fire-resistance-rated construction and opening protectives as required to provide a protected path of egress travel~~ between the exit access and the exit discharge. Exits include, but are not limited to, exterior exit doors at ground level, exit enclosures, exit passageways, exterior exit stairs, exterior exit ramps and horizontal exits.

Commenter's Reason: Recent interpretations from various jurisdictions have brought to light that there appears to be some confusion regarding when an interior stairway can be considered as an "exit" vs. "exit access."

While the definition in Section 1002.1 states that and "exit" is "That portion of a means of egress system which is separated from other interior spaces of a building or structure by fire-resistance-rated construction and opening protectives…" the code, in Section 1020.1, has like in so many instances exceptions to when the "enclosure" is not required. The exceptions to the enclosure do not make the exit stair no longer an exit, they just make it an exit stair that doesn't have to have the physical enclosure around it.

The proposed language is intended to bring this point to light. That even if there is no physical enclosure around a stairway, it can still be considered to be an "exit" stairway or "vertical exit."

As an example of the inconsistent application of the definition of "exit" is brought to light when one looks at a stairway that connects multiple levels within an open parking garage. The code in Section 1019.1 requires that each story within each building, including open parking garages, be provided with a minimum of 2 independent exits (unless the building qualifies as a single-exit building). But Exception No. 4 in Section 1020.0 (2007 Supp) specifically states that "Stairways in open parking structures that serve only the parking structure are not required to be enclosed." But are they then still an "exit" – yes, just an exit without a physical enclosure.

This point is further emphasized by the provision in Section 1016.1 Exception 1, which gives direction on how exit access travel distance stops at the top of an unenclosed vertical exit in an open parking garage. This is needed because you do not measure exit access distance down a vertical exit (i.e., stairway or ramp).

Final Action: AS AM AMPC____ D

E105-07/08

1002.1, 1007.3 (IFC [B] 1002.1, [B] 1007.3)

Proposed Change as Submitted:

Proponent: Sarah A Rice, CBO, Schirmer Engineering Corporation

Revise as follows:

1002.1 (IFC [B] 1002.1) Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

ACCESSIBLE MEANS OF EGRESS. A continuous and unobstructed way of egress travel from any accessible point in a building or facility to a place designated for assisted rescue or a public way.

1007.3 (IFC [B] 1007.3) (Supp) ~~Exit~~ Stairways. In order to be considered part of an accessible means of egress, an exit or exit access stairway shall have a clear width of 48 inches (1219 mm) minimum between handrails and shall either incorporate an area of refuge within an enlarged floor-level landing or shall be accessed from either an area of refuge complying with Section 1007.6 or a horizontal exit

Exceptions:

1. The area of refuge is not required at ~~unenclosed interior~~ open exit access or exit stairways as permitted by ~~Section~~ Sections 1016.1 and 1020.1 in buildings or facilities that are equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
2. The clear width of 48 inches (1219 mm) between handrails is not required at exit access or exit stairways in buildings or facilities equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
3. Areas of refuge are not required at exit stairways in buildings or facilities equipped throughout by an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
4. The clear width of 48 inches (1219 mm) between handrails is not required for exit stairways accessed from a horizontal exit.
5. Areas of refuge are not required at exit stairways serving open parking garages.
6. Areas of refuge are not required for smoke protected seating areas complying with Section 1025.6.2.
7. The areas of refuge are not required in Group R-2 occupancies.

Reason: The proposed language is part of a package of code changes that is intended to clarify how an unenclosed stairway can be used as part of the required means of egress system for a building. The package was developed by a group of stakeholders representing code officials, designers and code users who have been working together for the past 6 years to make the provisions for unenclosed vertical egress elements work within the terms and concepts found in the IBC.

The package does the following:

- Officially introduces 3 new terms for elements within the required means of egress; unenclosed vertical exit access, exit access stair and exit access ramp;
- Allows, through the use of an exception in 1019.1, an unenclosed vertical exit access element (i.e., "exit access stair" or "exit access ramp") to be used in lieu of an enclosed vertical exit (i.e., "exit stair" or "exit ramp");
- Clarifies that a maximum of 50% of the enclosed vertical exits can be replaced by an unenclosed exit access (1019.1); and
- Clarifies that when an unenclosed vertical exit access is part of the required means of egress system the exit access travel limits in Section 1016.1 are to be measured down the unenclosed vertical exit access to an exit or exit discharge.

- Eliminates the option for 100% of the required exits to be replaced with unenclosed exit access elements as this would create a hardship for small buildings (those that are less than 4 stories above or below the level of exit discharge) where 2 accessible means of egress must be provided on all stories. Without at least one enclosed vertical exit, the elevator which would most like have been installed only to provide an accessible route, would now need to be equipped with standby power in accordance with the provisions of 1007.4 (which could add a considerable amount to the overall cost of the project).
- Clarifies what happens when a corridor that is required to be fire rated terminates at a unenclosed exit access (Section 1017.5)

Together this package is considered to resolve many of the design quandaries that have been encountered by small buildings (typically 2 stories) wishing to have "openness."

The revision to the definition is to clarify that the stairway or elevator portion of the accessible means of egress may be through assistance by emergency responders. Stairways, while they may include provisions for persons with mobility impairments, are not part of an accessible route. In order to avoid possible entrapment, during emergencies, control and evacuation using the elevators must be by the fire department. The current definition could be interpreted to mean that the entire route must be accessible and unassisted. This leads to confusion between the exiting and entrance requirement.

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

Committee Action: **Approved as Modified**

Modify the proposal as follows:

1002.1 (IFC [B] 1002.1) Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

ACCESSIBLE MEANS OF EGRESS. A continuous and unobstructed way of egress travel from any accessible point in a building or facility to ~~a place designated for assisted rescue or~~ a public way.

(Portions of proposal not shown remain unchanged)

Committee Reason: The modification to remove consideration of the change to the definition of accessible means of egress was done based on the proponent's request. Revisions to Section 1007.3 were approved for coordination with the 2007 Supplement where some open stairways provisions were relocated to Section 1016.1.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Sarah A. Rice, CBO, Schirmer Engineering Corporation, requests Approval as Submitted.

Commenter's Reason: The proposed language is part of a package of code changes that is intended to clarify how an unenclosed stairway can be used as part of the required means of egress system for a building. The package was developed by a group of stakeholders representing code officials, designers and code users who have been working together for the past 6 years to make the provisions for unenclosed vertical egress elements work within the terms and concepts found in the IBC.

The package does the following:

- Officially introduces 3 new terms for elements within the required means of egress; unenclosed vertical exit access, exit access stair and exit access ramp;
- Allows, through the use of an exception in 1019.1, an unenclosed vertical exit access element (i.e., "exit access stair" or "exit access ramp") to be used in lieu of an enclosed vertical exit (i.e., "exit stair" or "exit ramp");
- Clarifies that a maximum of 50% of the enclosed vertical exits can be replaced by an unenclosed exit access (1019.1); and
- Clarifies that when an unenclosed vertical exit access is part of the required means of egress system the exit access travel limits in Section 1016.1 are to be measured down the unenclosed vertical exit access to an exit or exit discharge.
- Eliminates the option for 100% of the required exits to be replaced with unenclosed exit access elements as this would create a hardship for small buildings (those that are less than 4 stories above or below the level of exit discharge) where 2 accessible means of egress must be provided on all stories. Without at least one enclosed vertical exit, the elevator which would most like have been installed only to provide an accessible route, would now need to be equipped with standby power in accordance with the provisions of 1007.4 (which could add a considerable amount to the overall cost of the project).
- Clarifies what happens when a corridor that is required to be fire rated terminates at an unenclosed exit access (Section 1017.5)

Together this package is considered to resolve many of the design quandaries that have been encountered by small buildings (typically 2 stories) wishing to have "openness."

The revision to the definition is to clarify that the stairway or elevator portion of the accessible means of egress may be through assistance by emergency responders. Stairways, while they may include provisions for persons with mobility impairments, are not part of an accessible route. In order to avoid possible entrapment, during emergencies, control and evacuation using the elevators must be by the fire department. The current definition could be interpreted to mean that the entire route must be accessible and unassisted. This leads to confusion between the exiting and entrance requirement.

Final Action: AS AM AMPC____ D

E106-07/08
1016.1 (IFC [B] 1016.1)

Proposed Change as Submitted:

Proponent: Sarah A. Rice, CBO, Schirmer Engineering Corporation

Revise as follows:

1016.1 (IFC [B] 1016.1) (Supp) Travel distance limitations. Exits shall be so located on each story such that the maximum length of exit access travel, measured from the most remote point within a story to the entrance to an exit along the natural and unobstructed path of egress travel, shall not exceed the distances given in Table 1016.1.

For vertical exits permitted to be unenclosed by Section 1020.1, the exit access travel distance shall be measured to the closest riser or point of slope of the unenclosed vertical exit.

Where the path of exit access includes unenclosed stairways or ramps within the exit access, the distance of travel on such means of egress components shall also be included in the 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 stairway.

Exceptions:

~~1. Travel distance in open parking garages is permitted to be measured to the closest riser of open stairs.~~

~~2~~ 1. In outdoor facilities with open exit access components and open exterior stairs or ramps, travel distance is permitted to be measured to the closest riser of a stair or the closest slope of the ramp.

~~3~~ 2. In other than occupancy Groups H and I, the exit access travel distance to a maximum of 50 percent of the exits is permitted to be measured from the most remote point within a building to an exit using unenclosed stairways or ramps when connecting a maximum of two stories. The two connected stories shall be provided with at least two means of egress. Such interconnected stories shall not be open to other stories. The measurement along stairways shall be made on a plane parallel and tangent to the stair tread nosings in the center of the stairway.

~~4~~ .3. In other than occupancy Groups H and I, exit access travel distance is permitted to be measured from the most remote point within a building to an exit using unenclosed stairways or ramps in the first and second stories above grade plane in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.The first and second stories above grade plane shall be provided with at least two means of egress. Such interconnected stories shall not be open to other stories. The measurement along stairways shall be made on a plane parallel and tangent to the stair tread nosings in the center of the stairway.

Reason: The proposed language is intended to clarify how exit access travel distance is to be measured when an vertical exit is allowed to be unenclosed.

Currently the only direction for when to stop measuring exit access travel distance for an unenclosed vertical exit is found in Exception No.1, and it only makes reference to what happens in the case of an unenclosed vertical exit in an open parking garage.

Section 1020.1 (2007 Supp) contains 7 exceptions that allow for unenclosed vertical exits. It is only appropriate for the exit access travel distance to be measured consistently for all unenclosed vertical exits.

The proposal incorporates what was Exception No. 1 into the main body of the section thus providing direction on how to measure exit access travel distance in any unenclosed vertical exit.

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

Committee Action: **Disapproved**

Committee Reason: This should be referred to the Code Technologies Committee. See the committee action on E103-07/08. Exit access travel distance should not be measured within an exit. If open stairways are considered exits, this language is confusing.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Sarah A. Rice, CBO, Schirmer Engineering Corporation, requests Approval as Submitted.

Commenter's Reason: The proposed language is part of a package of code changes that is intended to clarify how an unenclosed stairway can be used as part of the required means of egress system for a building. The package was developed by a group of stakeholders representing code officials, designers and code users who have been working together for the past 6 years to make the provisions for unenclosed vertical egress elements work within the terms and concepts found in the IBC.

The package does the following:

- Officially introduces 3 new terms for elements within the required means of egress; unenclosed vertical exit access, exit access stair and exit access ramp;
- Allows, through the use of an exception in 1019.1, an unenclosed vertical exit access element (i.e., "exit access stair" or "exit access ramp") to be used in lieu of an enclosed vertical exit (i.e., "exit stair" or "exit ramp");
- Clarifies that a maximum of 50% of the enclosed vertical exits can be replaced by an unenclosed exit access (1019.1); and
- Clarifies that when an unenclosed vertical exit access is part of the required means of egress system the exit access travel limits in Section 1016.1 are to be measured down the unenclosed vertical exit access to an exit or exit discharge.
- Eliminates the option for 100% of the required exits to be replaced with unenclosed exit access elements as this would create a hardship for small buildings (those that are less than 4 stories above or below the level of exit discharge) where 2 accessible means of egress must be provided on all stories. Without at least one enclosed vertical exit, the elevator which would most like have been installed only to provide an accessible route, would now need to be equipped with standby power in accordance with the provisions of 1007.4 (which could add a considerable amount to the overall cost of the project).
- Clarifies what happens when a corridor that is required to be fire rated terminates at an unenclosed exit access (Section 1017.5)

Together this package is considered to resolve many of the design quandaries that have been encountered by small buildings (typically 2 stories) wishing to have "openness."

The revision to the definition is to clarify that the stairway or elevator portion of the accessible means of egress may be through assistance by emergency responders. Stairways, while they may include provisions for persons with mobility impairments, are not part of an accessible route. In order to avoid possible entrapment, during emergencies, control and evacuation using the elevators must be by the fire department. The current definition could be interpreted to mean that the entire route must be accessible and unassisted. This leads to confusion between the exiting and entrance requirement.

Final Action: AS AM AMPC____ D

E108-07/08

1017 (New), 1002.1 (IFC [B] 1017 (New), [B] 1002.1)

Proposed Change as Submitted:

Proponent: Sarah A. Rice, CBO, Schirmer Engineering Corporation

1. Add new text as follows:

1017 (IFC [B] 1017)
VERTICAL EXIT ACCESS

1017.1 (IFC [B] 1017.1) General. Exit access stairways and exit access ramps shall comply with the provisions of this section.

1017.2 (IFC [B] 1017.2) Enclosures required. Interior exit access stairways and interior exit access ramps shall be enclosed in accordance with the Section 711.

1017.3 (IFC [B] 1017.3) Exit access stairways. Exit access stairways used as a part of a required means of egress shall comply with Section 1009.

1017.4 (IFC [B] 1017.4) Exit access ramps. Exit access ramps used as a part of a required means of egress shall comply with Section 1010.

2. Revise definition as follows:

1002.1 (IFC [B] 1002.1) Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

EXIT ACCESS. That portion of a means of egress system that leads from any occupied portion of a building or structure to an exit. Exit access include the floors of a story, unenclosed interior stairways and ramps, exterior stairways and ramps, interior doors and corridors.

Reason: The proposed language is part of a package of code changes that is intended to clarify how an unenclosed stairway can be used as part of the required means of egress system for a building. The package was developed by a group of stakeholders representing code officials, designers and code users who have been working together for the past 6 years to make the provisions for unenclosed vertical egress elements work within the terms and concepts found in the IBC.

The package does the following:

- Officially introduces 3 new terms for elements within the required means of egress; unenclosed vertical exit access, exit access stair and exit access ramp;
- Allows, through the use of an exception in 1019.1, an unenclosed vertical exit access element (i.e., "exit access stair" or "exit access ramp") to be used in lieu of an enclosed vertical exit (i.e., "exit stair" or "exit ramp");
- Clarifies that a maximum of 50% of the enclosed vertical exits can be replaced by an unenclosed exit access (1019.1); and
- Clarifies that when an unenclosed vertical exit access is part of the required means of egress system the exit access travel limits in Section 1016.1 are to be measured down the unenclosed vertical exit access to an exit or exit discharge.
- Eliminates the option for 100% of the required exits to be replaced with unenclosed exit access elements as this would create a hardship for small buildings (those that are less than 4 stories above or below the level of exit discharge) where 2 accessible means of egress must be provided on all stories. Without at least one enclosed vertical exit, the elevator which would most like have been installed only to provide an accessible route, would now need to be equipped with standby power in accordance with the provisions of 1007.4 (which could add a considerable amount to the overall cost of the project).
- Clarifies what happens when a corridor that is required to be fire rated terminates at a unenclosed exit access (Section 1017.5)

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

Committee Action: **Disapproved**

Committee Reason: The proposal was disapproved based on the proponent's request. This should be referred to the Code Technologies Committee. See the committee action on E103-07/08.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Sarah A. Rice, CBO, Schirmer Engineering Corporation, requests Approval as Approval as Modified by this public comment.

Modify proposal as follows:

1002.1 (IFC [B] 1002.1) Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

EXIT ACCESS. That portion of a means of egress system that leads from any occupied portion of a building or structure to an exit. ~~Exit access include the floors of a story, unenclosed interior stairways and ramps, exterior stairways and ramps, interior doors and corridors.~~

(Portions of proposal not shown remain unchanged.)

Commenter's Reason: The proposed language is part of a package of code changes that is intended to clarify how an unenclosed stairway can be used as part of the required means of egress system for a building. The package was developed by a group of stakeholders representing code officials, designers and code users who have been working together for the past 6 years to make the provisions for unenclosed vertical egress elements work within the terms and concepts found in the IBC.

The package does the following:

• Officially introduces 3 new terms for elements within the required means of egress; unenclosed vertical exit access, exit access stair and exit access ramp;
• Allows, through the use of an exception in 1019.1, an unenclosed vertical exit access element (i.e., "exit access stair" or "exit access ramp") to be used in lieu of an enclosed vertical exit (i.e., "exit stair" or "exit ramp");
• Clarifies that a maximum of 50% of the enclosed vertical exits can be replaced by an unenclosed exit access (1019.1); and
• Clarifies that when an unenclosed vertical exit access is part of the required means of egress system the exit access travel limits in Section 1016.1 are to be measured down the unenclosed vertical exit access to an exit or exit discharge.
• Eliminates the option for 100% of the required exits to be replaced with unenclosed exit access elements as this would create a hardship for small buildings (those that are less than 4 stories above or below the level of exit discharge) where 2 accessible means of egress must be provided on all stories. Without at least one enclosed vertical exit, the elevator which would most like have been installed only to provide an accessible route, would now need to be equipped with standby power in accordance with the provisions of 1007.4 (which could add a considerable amount to the overall cost of the project).
• Clarifies what happens when a corridor that is required to be fire rated terminates at an unenclosed exit access (Section 1017.5)

Together this package is considered to resolve many of the design quandaries that have been encountered by small buildings (typically 2 stories) wishing to have "openness."

The revision to the definition is to clarify that the stairway or elevator portion of the accessible means of egress may be through assistance by emergency responders. Stairways, while they may include provisions for persons with mobility impairments, are not part of an accessible route. In order to avoid possible entrapment, during emergencies, control and evacuation using the elevators must be by the fire department. The current definition could be interpreted to mean that the entire route must be accessible and unassisted. This leads to confusion between the exiting and entrance requirement.

Final Action: AS AM AMPC____ D

E109-07/08
1019.1 (IFC [B] 1019.1)

Proposed Change as Submitted:

Proponent: Sarah A. Rice, CBO, Schirmer Engineering Corporation

Revise as follows:

1019.1 (IFC [B] 1019.1) (Supp) Exits from stories. All spaces within each story shall have access to the minimum number of approved independent exits as specified in Table 1019.1 based on the occupant load of the story. For the purposes of this chapter, occupied roofs shall be provided with exits as required for stories. The required number of exits from any story shall be maintained until arrival at grade or the public way.

Exceptions:

1. As modified by Section 403.15 *(2007 Supp - Additional exit stairway)*.
2. As modified by Section 1019.2.
3 ~~Rooms and spaces within each story provided with and having access to a means of egress that complies with Exception 3 or 4 in Section 1016.1 shall not be required to be provide the minimum number of approved independent exits required by Table 1019 on each story.~~ In other than Groups H and I occupancies, a maximum of 50 percent of the exits are permitted to be unenclosed exit access stairways or ramps when connecting not more than two stories, and such interconnected stories are not open to other stories.
4. In Groups R-2 and R-3 occupancies, one means of egress is permitted within and from individual dwelling units with a maximum occupant load of 20 where the dwelling unit is equipped throughout with an automatic sprinkler system in accordance with Sections 903.3.1.1 or 903.3.1.2.

Reason: The proposed language is part of a package of code changes that is intended to clarify how an unenclosed stairway can be used as part of the required means of egress system for a building. The package was developed by a group of stakeholders representing code officials, designers and code users who have been working together for the past 6 years to make the provisions for unenclosed vertical egress elements work within the terms and concepts found in the IBC.

The package does the following:

- Officially introduces 3 new terms for elements within the required means of egress; unenclosed vertical exit access, exit access stair and exit access ramp;
- Allows, through the use of an exception in 1019.1, an unenclosed vertical exit access element (i.e., “exit access stair” or “exit access ramp”) to be used in lieu of an enclosed vertical exit (i.e., “exit stair” or “exit ramp”);
- Clarifies that a maximum of 50% of the enclosed vertical exits can be replaced by an unenclosed exit access (1019.1); and
- Clarifies that when an unenclosed vertical exit access is part of the required means of egress system the exit access travel limits in Section 1016.1 are to be measured down the unenclosed vertical exit access to an exit or exit discharge.
- Eliminates the option for 100% of the required exits to be replaced with unenclosed exit access elements as this would create a hardship for small buildings (those that are less than 4 stories above or below the level of exit discharge) where 2 accessible means of egress must be provided on all stories. Without at least one enclosed vertical exit, the elevator which would most like have been installed only to provide an accessible route, would now need to be equipped with standby power in accordance with the provisions of 1007.4 (which could add a considerable amount to the overall cost of the project).
- Clarifies what happens when a corridor that is required to be fire rated terminates at a unenclosed exit access (Section 1017.5)

Together this package is considered to resolve many of the design quandaries that have been encountered by small buildings (typically 2 stories) wishing to have “openness.”

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

Committee Action: **Disapproved**

Committee Reason: The proposal was disapproved based on the proponent’s request. This should be referred to the Code Technologies Committee. See the committee action on E103-07/08.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Sarah A. Rice, CBO, Schirmer Engineering Corporation, requests Approval as Submitted.

Commenter's Reason: The proposed language is part of a package of code changes that is intended to clarify how an unenclosed stairway can be used as part of the required means of egress system for a building. The package was developed by a group of stakeholders representing code officials, designers and code users who have been working together for the past 6 years to make the provisions for unenclosed vertical egress elements work within the terms and concepts found in the IBC.

The package does the following:

- Officially introduces 3 new terms for elements within the required means of egress; unenclosed vertical exit access, exit access stair and exit access ramp;
- Allows, through the use of an exception in 1019.1, an unenclosed vertical exit access element (i.e., "exit access stair" or "exit access ramp") to be used in lieu of an enclosed vertical exit (i.e., "exit stair" or "exit ramp");
- Clarifies that a maximum of 50% of the enclosed vertical exits can be replaced by an unenclosed exit access (1019.1); and
- Clarifies that when an unenclosed vertical exit access is part of the required means of egress system the exit access travel limits in Section 1016.1 are to be measured down the unenclosed vertical exit access to an exit or exit discharge.
- Eliminates the option for 100% of the required exits to be replaced with unenclosed exit access elements as this would create a hardship for small buildings (those that are less than 4 stories above or below the level of exit discharge) where 2 accessible means of egress must be provided on all stories. Without at least one enclosed vertical exit, the elevator which would most like have been installed only to provide an accessible route, would now need to be equipped with standby power in accordance with the provisions of 1007.4 (which could add a considerable amount to the overall cost of the project).
- Clarifies what happens when a corridor that is required to be fire rated terminates at an unenclosed exit access (Section 1017.5)

Together this package is considered to resolve many of the design quandaries that have been encountered by small buildings (typically 2 stories) wishing to have "openness."

The revision to the definition is to clarify that the stairway or elevator portion of the accessible means of egress may be through assistance by emergency responders. Stairways, while they may include provisions for persons with mobility impairments, are not part of an accessible route. In order to avoid possible entrapment, during emergencies, control and evacuation using the elevators must be by the fire department. The current definition could be interpreted to mean that the entire route must be accessible and unassisted. This leads to confusion between the exiting and entrance requirement.

Final Action: AS AM AMPC____ D

E111-07/08

Table 1016.1 (IFC [B] Table 1016.1)

Proposed Change as Submitted:

Proponent: Sarah A. Rice, Schirmer Engineering Corporation

Revise as follows:

TABLE 1016.1 (IFC [B] TABLE 1016.1)
EXIT ACCESS TRAVEL DISTANCE[a]

OCCUPANCY	WITHOUT SPRINKLER SYSTEM (feet)	WITH SPRINKLER SYSTEM (feet)
A, E,F-1, ~~I-1~~, M, ~~R,~~ S1	200	250[b]
I-1, R	Not Permitted	250[b]
B	200	300[b]
F-2, S2, U	300	400[b]
H-1	Not Permitted	75[b]
H-2	Not Permitted	100[b]
H-3	Not Permitted	150[b]
H-4	Not Permitted	175[b]
H-5	Not Permitted	200[b]
I-2, I-3, I-4	~~150~~ Not Permitted	200[b]

For SI: 1 foot = 304.8 mm.

a. See the following sections for modifications to exit access travel distance requirements:
Section 402.4: 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.
Section 408.6.1 and 408.7.1: For the distance limitations in Group I-3.
Sections 411.4: For the distance limitation in Special Amusement Buildings.
Section 1014.2.2: For the distance limitation in Group I-2 Hospital Suites.
Section 1015.4: For the distance limitation in refrigeration machinery rooms.
Section 1015.5: For the distance limitation in refrigerated rooms and spaces
Section 1016.2 For increased limitations in Groups F-1 and S-1.
Section 1025.7: For increased limitation in assembly seating.

Section 1025.7: For increased limitation for assembly open-air seating.
Section 1019.2: For buildings with one exit.
Section 3103.4: For temporary structures
Section 3104.9: For pedestrian walkways
~~Chapter 31: For the limitation in temporary structures.~~

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 in accordance with Section 903.3.1.2 are permitted.
c. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

Reason: The proposal has two purposes. First to correct the table as it addresses Group I and R occupancies. Per section 903.2 these occupancies have to be protected by an automatic sprinkler system. Therefore there is no need to list a travel distance for an unsprinklered situation. These are the changes within the table itself. With respect to the revision to footnote a, the existing footnote lists 7 code sections where travel distance is modified. The list is incomplete, there are at least 14 locations where travel distance is modified. The proposal adds the other 7 locations. This unfortunately results in a fairly long laundry list in a footnote. Since the code sections referenced are fairly specific to section perhaps the topic addressed by the section is extra information. The extra information does prevent unnecessary searching of other sections. An argument can be made that if one is considering a covered mall building, one is already looking at Section 402 and shouldn't need a reminder in Chapter 10 that there is something else to look for. An alternative to a long laundry list in footnote a would be to revise it as follows: "a. See the following sections for modifications to exit access travel distance for specific occupancies and spaces: 402.4, 404.8, 407.4, 408.6.1, 408.7.1, 411.4, 1014.2.2, 1015.4, 1015.5, 1016.2, 1019.2, 1025.7. 3103.3, 3104.9."

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

Committee Action: **Approved as Submitted**

Committee Reason: The additional language provides a good cross reference and clarification for Table 1016.1.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Carroll Lee Pruitt, FAIA, Pruitt Consulting, representing North Texas Chapter of ICC, requests Approval as Modified by this public comment.

Modify table as follows:

OCCUPANCY	WITHOUT SPRINKLER SYSTEM (feet)	WITH SPRINKLER SYSTEM (feet)
A, E,F-1, M, R, S1	200	250[b]
I-1, ~~R~~	Not Permitted	250[b]

(Portions of table and footnotes not shown remain unchanged)

Commenter's Reason: The code change as approved eliminates the use of NFPA13D fire sprinkler systems permitted by Section 903.3.13 for one- and two- family dwellings as these facilities are not considered sprinklered for code permitted trade offs or reductions. Unless these types of structures were protected with a NFPA 13 or 13R system under the original submittal, there would be no allowed travel distance in these types of buildings. This would be better handled by an appropriate footnote, however, that was not a part of this code change. If this challenge is approved, we will bring back the appropriate code change in the next cycle.

Final Action: AS AM AMPC____ D

E114-07/08
Table 1016.1, 1016.2 (IFC [B] Table 1016.1, [B] 1016.2); IFC 910.2.3 (IBC [F] 910.2.3)

Proposed Change as Submitted:

Proponent: Richard Schulte, Schulte & Associates

1. Revise IBC as follows:

TABLE 1016.1 (IFC [B] TABLE 1016.1)
EXIT ACCESS TRAVEL DISTANCE

(No change to table entries)

For SI: 1 foot = 304.8 mm.

a. See the following sections for modifications to exit access travel distance requirements:
   Section 402: For the distance limitation in malls.
   Section 404: For the distance limitation through an atrium space.
   ~~Section 1016.2 For increased limitations in Groups F-1 and S-1.~~
   Section 1025.7: For increased limitation in assembly seating.
   Section 1025.7: For increased limitation for assembly open-air seating.
   Section 1019.2: For buildings with one exit.
   Chapter 31: For the limitation in temporary structures.
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 in accordance with Section 903.3.1.2 are permitted.
c. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

~~**1016.2 (IFC [B] 1016.2) Roof vent increase.** In buildings that are one story in height, equipped with automatic heat and smoke roof vents complying with Section 910 and equipped throughout with an automatic sprinkler system in accordance with Section 903.1.1, the maximum exit access travel distance shall be 400 feet (122 m) for occupancies in Group F-1 or S-1.~~

2. Revise IFC as follows:

~~**IFC 910.2.3 (IBC [F] 910.2.3 Exit access travel distance increase.** Buildings and portions thereof used as a Group F-1 or S-1 occupancy where the maximum exit access travel distance is increased in accordance with Section 1016.2.~~

Reason: The purpose of this code change proposal is to delete the provision which allows an increase in travel distance to 400 feet in one story Group F-1 and S-1 occupancies protected by a sprinkler system and provided with smoke and heat (roof) vents.

At present, the IBC permits travel distance to be increased from 200 feet to 250 feet in Group F-1 and S-1 occupancies when sprinkler protection is provided. Section 1016.2 allows an additional 150 feet of travel distance in Group F-1 and S-1 occupancies above and beyond that permitted when sprinkler protection is provided when smoke and heat (roof) vents are also provided.

While smoke and heat (roof) vents by themselves will automatically vent smoke and heat generated by a fire in an unsprinklered one story building, there is serious doubt whether or not smoke and heat (roof) vents actually perform their intended function in buildings protected throughout by a sprinkler system.

Fire tests utilizing a combination of standard spray sprinklers and fusible link-activated smoke and heat (roof) vents conducted at Underwriters Laboratories (UL) in 1997 and 1998 clearly demonstrated that operating sprinklers interfere with the opening of roof vents. The following are quotes from the report of the tests at UL, "Sprinkler, Smoke & Heat Vent, Draft Curtain Interaction -- Large Scale Experiments and Model Development", dated September 1998. (The report is referred to as NISTIR 6196-1.)

"*It had become clear by this time in the project that the vents were unlikely to open when the fire was ignited more than about 4.6 m (15 ft) away.*" (Page 54, NISTIR 6196-1)

"*. . . .it appears from the data below that the sprinkler spray influenced the thermal response characteristics of this particular vent, and it is believed that sprinklers could have a similar influence on similar vent designs.*" (Page 64, NISTIR 6196-1)

"*Six other tests were performed with the fire at this distance from the vent when the vent was equipped with a fusible link, and in none of these tests did the vent open. . . Examination of the near-ceiling temperatures from all the tests indicates that sprinklers of this type* [standard spray sprinklers] *have a significant cooling effect, and this will certainly have an effect on thermally-responsive, independently-controlled vents.*" (Page 64, NISTIR 6196-1)

"*In Plastic Test P-2, the fire was ignited directly under a vent. In the experiment, flames reached the top of the central array at about 65 s and the vent cavity at about 70 s. The first sprinkler activated at 100 s. The vent did not open at any time during the 30 min test even though another vent 6 m (20 ft) to the west of the unopened vent opened at 6:04.*" Page 64, NISTIR 6196-1)

"*This data, along with the plunge tunnel measurements reported in Section 3.1.4, suggests that the fusible link reached its activation temperature before or at about the same time as the first sprinkler activated, but the link did not fuse. It is not clear whether the link did not fuse because it was cooled directly by water drawn upwards into the vent cavity, or whether the sprinkler spray simply cooled the rising smoke plume enough to prevent the link from fusing. In any event, this phenomenon deserves further study.*" (Page 64, NISTIR 6196-1)

"*The mass flow rates* [through the vents] *for Test I-10 and P-5 are relatively low compared with the theoretical maximum because the near-ceiling gas temperatures are greatly reduced by the sprinklers.*" (Page 100, NISTIR 6196-1)

"The significant cooling effect of sprinkler sprays on the near-ceiling gas flow often prevented the automatic operation of vents. This conclusion is based on thermocouple measurements within the vent cavity, the presence of drips of solder on the fusible links recovered from unopened vents, and several tests where vents remote from the fire and the sprinkler spray activated. In one cartoned plastic commodity experiment, a vent did not open when the fire was ignited directly beneath it." (Page 101, NISTIR 6196-1)

NFPA 204 also clearly indicates that operating sprinklers will reduce the venting rate through any vents which do open due to the reduction of temperature in the vicinity of the vent caused by operating sprinklers. The following is an excerpt from the 2002 edition of NFPA 204:

"**A.4.4.3** *Mass flow through a vent is governed mainly by the vent area and the depth of the smoke layer and its temperature. Venting becomes more effective with smoke temperature differentials between ambient temperature and an upper layer of approximately 110°C* [198°F] *or higher. Where temperature differences of less than 110°C* [198°F] *are expected, vent flows might be reduced significantly. . . .*"

The following are quotes from Dr. Craig Beyler, Hughes Associates, Inc. regarding the operation of smoke and heat (roof) vents in buildings protected by a sprinkler system:

"*The experimental studies have shown that . . . . .current design practices are likely to limit the number of vents operated to one and vents may in fact not operate at all in very successful sprinkler operations.*" (Page 1, "Interaction of Sprinklers with Smoke and Heat Vents")

Not only is the fear of early operation not founded, current design practice will likely lead to 0-1 vents operating" ("Page 61," "Sprinkler/Vent Interactions-What people think, what we know, and what we don't.")

"*Eliminates Need for Manual Venting? No*" (Page 42, ""Sprinkler/Vent Interactions-What people think, what we know, and what we don't.")

"*Revised design methods for early operation of vents are needed*" (Page 61, "Sprinkler/Vent Interactions-What people think, what we know, and what we don't.")

Given the above, it can be concluded that smoke and heat (roof) vents do not actually operate as expected in buildings protected by a sprinkler system. Based upon this, it can be concluded that there is no technical basis for permitting an increase in travel distance of 150 feet beyond the travel distance permitted for Group F-1 and S-1 occupancies protected by a sprinkler system when smoke and heat (roof) vents are provided.

Bibliography

1. "Sprinkler, Smoke & Heat Vent, Draft Curtain Interaction -- Large Scale Experiments and Model Development" (NISTIR 6196-1), Kevin B. McGrattan, Anthony Hamins, David Stroup, September 1998. http://www.fire.nist.gov/bfrlpubs/fire98/PDF/f98069.pdf
2. "Interaction of Sprinklers with Smoke and Heat Vents", Craig L. Beyler and Leonard Y. Cooper, February 1999. http://www.haifire.com/publications/Paper21.pdf
3. "Sprinkler/Vent Interactions-What people think, what we know, and what we don't.", Dr. Craig Beyler, Hughes Associates, Inc. (undated (presentation). http://www.haifire.com/presentations/Sprinkler%20Vent%20Interactions%20-%20NFPA%202000.pdf
4. NFPA 204, Standard for Smoke and Heat Venting (2002 edition).

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

Committee Action: Approved as Submitted

Committee Reason: Fire fighter safety is a concern in these buildings. In this situation, the tenability in the building will diminish even with the sprinklers in operation, and the 400 feet in and 400 feet out in a building is a hazard for these responders. The correlative reference in the IFC should be struck for consistency.

Assembly Action: None

Individual Consideration Agenda

This item is on the agenda for individual consideration because public comments were submitted.

Public Comment 1:

Rick Thornberry, PE, The Code Consortium, Inc., representing AAMA Smoke Vent Task Group, requests Approval as Modified by this public comment.

1. Modify proposal as follows:

TABLE 1016.1 (IFC [B] TABLE 1016.1)
EXIT ACCESS TRAVEL DISTANCE

(No change to table entries)

For SI: 1 foot = 304.8 mm.

a. See the following sections for modifications to exit access travel distance requirements:
Section 402: For the distance limitation in malls.
Section 404: For the distance limitation through an atrium space.
Section 1016.2: For the distance limitations in Groups F-1 and S-1.
Section 1025.7: For the distance limitation in assembly seating.
Section 1025.7: For the distance limitation for assembly open-air seating.

Section 1019.2: For buildings with one exit.
Chapter 31: for the limitation in temporary structures.

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 in accordance with Section 903.3.1.2 are permitted.
c. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

1016.2 (IFC [B] 1016.2) Roof vent increase. In buildings that are one story in height, equipped with automatic heat and smoke roof vents complying with Section 910 and equipped throughout with an automatic sprinkler system in accordance with Section 903.1.1, the maximum exit access travel distance shall be 400 feet (122 m) for occupancies in Group F-1 or S-1.

1016.2.1 (IFC [B] 1016.2.1) Automatic heat and smoke roof vents activation. In addition to the requirements in Section 910.3, the automatic heat and smoke roof vents shall be activated by any one or more of the following means as approved by the fire code official:

1. Automatically by sprinkler water flow
2. Automatically by an approved smoke detection system installed in accordance with the *International Fire Code* and NFPA 72.
3. Manually by a remote switch provided in an approved location accessible to the fire department without having to enter the building or traverse the roof.

2. Modify IFC as follows:

IFC 910.2.3 (IBC [F] 910.2.3) Exit access travel distance increase. Buildings and portions thereof used as a Group F-1 or S-1 occupancy where the maximum exit access travel distance is increased in accordance with Section 1016.2.

Commenter's Reason: The purpose of this Public Comment is to address the Committee's concerns which were expressed in the Committee Reason for approving this code change to delete this long standing travel distance increase allowance. The Committee's main concern was for firefighter safety in these very large buildings which have travel distances as great as 400 feet since the firefighters may have to travel as far as 400 feet into the building to find the seat of the fire or to effect rescue operations and then to back track that 400 feet to get out of the building should a problem arise during their firefighting and rescue operations. Although we believe that adequate firefighter safety is already provided by the installation of the automatic sprinkler system in conjunction with the automatic smoke and heat vents for which there has never been a documented problem or associated death or injury to our knowledge, we are providing modifications to the code change proposal to address those concerns.

First, we are reinstating the provision that allows for the increased travel distance when automatic sprinkler systems and automatic smoke and heat vents are provided.

Second, we are including a new Subsection 1016.2.1 Automatic Heat and Smoke Roof Vents Activation which specifies how the automatic heat and smoke roof vents must be activated in order to allow the increased travel distance to 400 feet. These activation methods are prescribed so that any one or more of them can be provided based on approval by the fire code official. This would depend upon the fire code official's judgment as to which activation method is appropriate for their fire fighting tactics and that will provide the level of protection they believe is appropriate and necessary for their firefighters when dealing with fires in these buildings. It should be noted that current Section 910.3.2 Vent Operation already provides this authority to the fire code official since the section specifies that smoke and heat vents must be capable of being operated by approved automatic and manual means. In our opinion the three methods of operation for the smoke and heat vents in this application would provide a reasonable level of safety for the responding firefighters. In fact, we commissioned Hughes Associates, Inc. to run a series of computer model simulations on automatic smoke and heat vents activated by the sprinkler water flow to show how effective they are in a ganged operation format in maintaining a tenable and visible atmosphere to allow firefighters to gain access to the seat of the fire. However, if a fire department would prefer a different mode of automatic operation, we have also provided for the use of an approved smoke detection system to operate the automatic smoke and heat vents. And a third option is provided where the fire department may decide that they prefer to have manual override control of the operation of the automatic smoke and heat vents which can be accomplished with a switch provided in an approved remote location accessible to the fire department without fire department personnel having to enter the building or to go onto the roof to operate the vents.

In conclusion, should the ICC Class A voting members agree with the Committee that the increased travel distance of 400 feet currently allowed in factory and warehouse buildings provided with automatic sprinkler systems and automatic smoke and heat vents should no longer be allowed under the current code provisions, then we believe that in order to retain this allowance and provide for reasonable safety to firefighters and building occupants, the provisions in this Public Comment should be approved in order that this long standing travel distance increase can be retained in the code without jeopardizing firefighter safety. In that case we respectfully request that the ICC Class A voting members approve this Public Comment.

Public Comment 2:

Gregory R. Keith, Professional heuristic Development, representing the Boeing Company, requests Disapproval.

Commenter's Reason: With the approval as submitted of Item E114-07/08 in Palm Springs, a long standing travel distance provision became a casualty in an ongoing debate between opponents and proponents of smoke and heat vents. The proponent of E114, who questions the reliability of smoke and heat vents, made a somewhat facetious case that since—in his opinion—such vents are unreliable, the associated travel distance increase in Group F-1 and S-1 occupancies, should be eliminated.

The purpose of our recommendation for disapproval of this item is not intended to take sides in this lingering debate. The fact of the matter is that regardless of the efficacy of smoke and heat vents, there is absolutely no record of life or property loss that would indicate that 400 feet of egress travel in these specific occupancies is problematic. No such supporting data were offered during the consideration of this item.

The allowance for 400 feet of travel distance in Section 1016.2 is also based on several factors not addressed during the discussion of Item E114. They include the presence of ordinary hazard materials, a high degree of occupant familiarity and relatively high ceiling heights associated with buildings utilizing smoke and heat vents. The combination of these factors has proven to be very effective and there is no technical substantiation to reverse this often used provision.

To put the issue in temporal perspective, it should be noted that an increase of 150 feet for egress travel distance adds slightly more than 30 seconds of travel time in a fully sprinklered building. The sustaining of approval of this item would create countless legal, nonconforming uses of buildings that would likely have to be redesigned should an addition, alteration or repair become necessary (Section 3403.1). As products and technology change, The Boeing Company is constantly modifying its existing factory and storage occupancies. To modify existing one-story buildings to conform to a more restrictive 250-foot travel distance requirement would cost tens of millions of dollars.

Unfortunately, a reverse logic argument against a given building construction product has backfired in the face of those who use the code and are required to comply with its requirements. The value of smoke and heat vents should be argued on their relative technical merits and demerits and proven design provisions should not be impacted by the ongoing discourse. Please disapprove Item E114-07/08 and return a time proven 400-foot travel distance provision for qualifying occupancies. Such current provisions have long demonstrated their ability to provide for a high degree of life safety in Group F-1 and S-1 occupancies.

Public Comment 3:

William A. Kinninger, AIA, Fluor Enterprises, Inc., requests Disapproval.

Commenter's Reason: The 400 foot travel distance allowance in one story, Type F1 and S1 occupancies, fully sprinkled, plus smoke vents has been in the model codes for 20 years. There is no technical justification that this is now a problem. There is no documentation that this is now a hazard for fire responders. Note: Table 1016.1 still allows the 400 foot travel distance in F2 and S2 occupancies. The documentation submitted in the proposal references fire tests in which the sprinklers performed as designed and extinguished the fire without opening the smoke vents. With the 400 foot travel distance, the smoke vents are needed as a back up in case the sprinkler system fails to operate. Rather than simply eliminating the 400 foot allowance, improvements to the smoke vent activation methods should be further studied such as tying the vent operation to the fire alarm system, for example. Recommend DISAPPROVAL of this proposal due to a lack of technical justification that this is now a problem and the fact that this allowance has been in the model codes for years.

Public Comment 4:

Rick Thornberry, PE, The Code Consortium, Inc., representing AAMA Smoke Vent Task Group, requests Disapproval.

Commenter's Reason: This code change proposal needs to be disapproved since it eliminates a very important provision in the code that allows for an increased travel distance of up to 400 feet in factory and warehouse buildings that are protected throughout with an approved automatic sprinkler system and approved automatic smoke and heat vents. This allowable increase in travel distance has been used successfully for many years, not only under the International Building Code (IBC), but also under every one of the legacy codes, to accommodate very large unlimited area buildings provided with only exterior doors for the required exits. This increased travel distance provision provides a significant degree of flexibility in the design of such large open floor plan buildings without the need to subdivide them with horizontal exits or provide exit passageways or underground exit tunnels to meet the 250 foot travel distance that would be otherwise allowed in a sprinklered building of this type.

No data was provided to indicate that there had been any injuries or loss of life either to occupants or firefighters in these buildings where this travel distance increase has been permitted. Certainly, there are thousands, if not tens of thousands, of these buildings that exist throughout the United States and have for very many years. So if there was a problem, we believe it would have surfaced by now. Without that kind of information available, we think it is premature and unjustified to eliminate such a time tested provision.

We certainly support firefighter safety for those firefighters who attempt to enter these buildings under fire conditions to perform search and rescue operations, as well as to control and extinguish the fire. However, we firmly believe that the provisions of the automatic sprinkler system and the automatic smoke and heat vents in the roofs of these buildings provide reasonable and adequate safety for the firefighters, as well as the building occupants who must exit the increased travel distance. We have conducted modeling studies of these types of facilities with automatic smoke and heat vents and they've shown that they do provide for reasonably clear access to the fire, as well as to the exits for a sufficient period of time to allow for occupants to evacuate and firefighters to perform their rescue and fire fighting activities.

Furthermore, in those jurisdictions where the fire departments may have concerns about sending their firefighters into these very large buildings with the maximum 400 foot travel distance allowed by this section, the fire code official has the ability to require the smoke and heat vents to be designed to operate in a manner that will further enhance their performance by. For example, he can require ganging them together and tying them into the operation of the automatic sprinkler system water flow alarm so that they all open within the area covered by the sprinkler system that has been activated. Since Section 910.3.2 Vent Operation requires that the smoke and heat vents be capable of being operated by approved automatic and manual means, the fire code official can require such automatic operations as a part of his approval for the use of smoke and heat vents in this particular application.

In conclusion, we have not seen any demonstrated problem with this provision that allows for an increased travel distance to 400 feet, nor has any other compelling evidence been provided to indicate that such a drastic action should be taken to eliminate this travel distance increase as proposed in this code change. Therefore, we strongly urge the ICC Class A voting members to approve this Public Comment which will, in effect, disapprove this code change proposal and continue to allow the 400 foot travel distance.

Final Action: AS AM AMPC____ D

E116-07/08
Table 1017.1 (IFC [B] Table 1017.1)

Proposed Change as Submitted:

Proponent: Laura Blaul, Orange County Fire Authority, representing California Fire Chiefs Association

Revise table as follows:

TABLE 1017.1 (IFC [B] Table 1017.1)
CORRIDOR FIRE-RESISTANCE RATING

OCCUPANCY	OCCUPANT LOAD SERVED BY CORRIDOR	REQUIRED FIRE-RESISTANCE RATING (HOURS)		
		Without sprinkler system	With sprinkler system in areas without interrupted water supply[c]	With sprinkler system in areas with interrupted water supply[c]
H-1, H-2, H-3	All	Not Permitted	1	1
H-4, H-5	Greater than 30	Not Permitted	1	1
A, B, E, F, M, S, U	Greater than 30	1	0	1
R	Greater than 10	1	0.5	1
I-2[a], I-4	All	Not Permitted	0	1
I-1, I-3	All	Not Permitted	1[b]	1[b]

a. For requirements for occupancies in Group I-2, see Section 407.3.
b. For a reduction in the fire-resistance rating for occupancies in Group I-3, see Section 408.7.
c. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 where allowed.

Reason: The purpose of this code change is to reduce the reliance of firefighters, and the community on adequate water supply to help prevent conflagration where the water supply may be interrupted by natural disaster or water system operation issues in the event of an emergency.

This proposed amendment eliminates the automatic sprinkler system trade-off for corridors and reinstates the one hour fire resistance rating requirement for corridors in all occupancies.

The 2006 International Building Code allows the use of non-fire resistance rated corridors (less than 1-hour fire resistance rating) to a much greater extent than the 1997 Uniform Building Code (UBC) currently adopted by California. In many cases the required 1-hour fire resistance rating for corridors is traded-off for the installation of an automatic sprinkler system. We do not believe that such trade-offs are appropriate where life safety is concerned. In such cases, it is advantageous and desirable to maintain the built-in passive fire resistant protection, as well as to provide the active automatic sprinkler system protection, where life safety is involved. In our opinion, trade-offs are entirely inappropriate where life safety is concerned. We believe that a balanced approach should be used to assure that the appropriate level of life safety will be provided to the occupants of the building who must rely upon the corridors to exit the building.

A secondary benefit of 1-hour fire resistance rated corridors is that they also assist fire fighters in doing their job by providing a protected means of access to the interior of the building where they can perform their search and rescue missions, as well as fire fighting operations, in relative safety. Fire resistance rated corridors can provide fire fighters with additional time to do their jobs more effectively and safely.

We strongly believe that sprinkler trade-offs should not be allowed for means of egress components. In California we are especially concerned because of the high probability of severe earthquakes occurring which can knock out the water supply to the sprinkler system. At present, neither the UBC nor the IBC allow sprinkler trade-offs for the fire resistance ratings required for exit stair enclosures, horizontal exits, and exit passageways. So why should sprinkler trade-offs be allowed for the 1-hour fire resistance rating of corridors which provide a protected egress path giving access to these exit elements?

Furthermore, other sprinkler trade-offs related to the means of egress in buildings have already been provided for in the IBC. For example, travel distance is allowed to be increased where automatic sprinkler systems are provided. The separation of exits (remoteness) is also allowed to be reduced where automatic sprinkler systems are installed. Interior finish requirements are relaxed within corridors where Class C interior finish can be used in lieu of Class B interior finish and Class B interior finish can be used where Class A interior finish would otherwise be required if not for the installation of automatic sprinklers. And in certain occupancies dead end corridors are allowed to be increased in length by as much as 150%, i.e. from 20 feet to 50 feet, where automatic sprinkler systems are provided.

We are concerned that the compounding effect of sprinkler trade-offs could lead to greater risk to the life safety of the building occupants, especially if combined with a reduction in or the elimination of the 1-hour fire resistance rating for corridors providing access to the exits or the exit stairs. Too much reliance on automatic sprinkler systems may not be wise where life safety is a key consideration. We strongly believe that a balanced approach to fire and life safety in buildings should be provided to greatly enhance the probability that the intended level of fire and life safety prescribed by the building code will be provided when a fire occurs, even if something should go wrong.

We acknowledge that automatic sprinkler systems are an important fire protection tool, but they are not infallible. Like any mechanical system, they are subject to failure. In fact, a recent statistical analysis of automatic sprinkler system performance conducted by the NFPA has concluded that automatic sprinkler systems fail to activate in at least 1 out of every 6 fires that occur in sprinklered buildings. In our opinion such a level of performance does not justify trading-off built-in fire resistant protection for the means of egress in buildings where the occupant's lives are at risk in a fire emergency. A balanced design approach of providing built-in fire resistive protection in conjunction with automatic sprinkler protection, in our opinion, will go a long way toward assuring that the level of fire and life safety intended by the building code will be delivered during a fire emergency.

A code change that is being heard by the Fire Safety committee will include the definition for areas of interrupted water supply as follows:

AREAS OF INTERRUPTED WATER SUPPLY. Regions or areas where the water supply available for fire suppression is subject to extended periods of failure due to natural disaster or other factors, as determined by the building official to meet any of the following conditions:

1. Areas, regions or geologic features where the 0.2 second spectral response acceleration in Figure 1613.5(1) is 150% or greater; or alluvial valleys located between or adjacent to geologic features or areas where the 0.2 second spectral response acceleration in Figure 1613.5(1) is 150% or greater.
2. Flood hazard areas defined in Section 1612.3.
3. Hurricane-prone regions defined in Section 1609.2.
4. Areas where the water system is not deemed to be operational or reliable in the event of an emergency as determined by the authority having jurisdiction.

Cost Impact: This code change proposal will increase the cost of construction in certain geographic areas or regions as defined.

Analysis: The committee is requested to state its intent regarding this code change proposal should the definition of "**AREAS OF INTERRUPTED WATER SUPPLY** " given in the code change proposal for the IBC-Fire Safety committee be disapproved.

Committee Action: **Disapproved**

Committee Reason: The definition for 'areas of interrupted water supply' is part of FS17-07/08. This proposal is also related to G126-07/08. No technical justification was presented for this increase. The building code requirements rely on an adequate water supply for the sprinklers. If that is not available the redundancy should be in the water supply, not in the passive systems in the building. Areas where an adequate water supply is not available now are required to have tanks for the sprinkler system – would this requirement also mean these buildings would have to increase the corridor ratings? If the concern is for areas with high seismic activity, perhaps a better approach would be to require corridor ratings in buildings in high seismic areas rather than based on a possible interrupted water supply.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Mike Ashley, CBO, Alliance for Fire and Smoke Containment and Control (AFSCC), requests Approval as Modified by this public comment.

Modify proposal as follows:

TABLE 1017.1 (IFC [B] Table 1017.1)
CORRIDOR FIRE-RESISTANCE RATING

OCCUPANCY	OCCUPANT LOAD SERVED BY CORRIDOR	REQUIRED FIRE-RESISTANCE RATING (HOURS)		
		Without sprinkler system	With sprinkler system ~~in areas~~ without ~~interrupted~~ interruptable water supply[c]	With sprinkler system ~~in areas~~ with ~~interrupted~~ interruptable water supply[c]
H-1, H-2, H-3	All	Not Permitted	1	1
H-4, H-5	Greater than 30	Not Permitted	1	1
A, B, E, F, M, S, U	Greater than 30	1	0	1
R	Greater than 30	1	0.5	1
I-2[a], I-4	All	Not Permitted	0	1[d]
I-1, I-3	All	Not Permitted	1[b]	1[b,e]

a. For requirements for occupancies in Group I-2, see Section 407.3.
b. For a reduction in the fire-resistance rating for occupancies in Group I-3, see Section 408.7.
c. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 where allowed.
d. Section 407.3 shall not apply to these corridors for the construction of the corridor walls.
e. The provisions is Section 408.7 that allow for reductions in the required fire-resistance ratings for corridors shall not apply to these corridors.

Add new definition as follows.

Section 202 Definitions.

INTERRUPTABLE WATER SUPPLY. An approved water supply capable of supplying the required fire flow for fire protection as prescribed in the International Fire Code which is subject to extended periods where it is not available in sufficient quantity and pressure as determined by the fire code official due to the occurrence of a natural disaster in any of the following areas or regions:

1. Areas or regions where the 0.2 second spectral response acceleration in Figure 1613.5 (1) is 150% or greater; or alluvial valleys located between or adjacent to areas or regions where the 0.2 second spectral response acceleration in Figure 1613.5 (1) is 150% or greater.
2. Flood hazard areas established in Section 1612.3.
3. Wind-borne debris regions as defined in Section 1609.2.

Commenter's Reason: We are submitting this Public Comment because we believe the concept of providing adequate passive fire-resistive protection for the corridors in the means of egress system makes sense in areas where an interruptable water supply exists, even where an automatic sprinkler system is provided throughout the building. This Public Comment is our attempt to further refine the concept of areas of interrupted water supply as introduced by the proponent of this code change proposal, as well as Code Change Proposal FS17-07/08 which contains the actual definition for "areas of interrupted water supply" upon which this code change proposal relies so that it can be effectively implemented and enforced.

First, in our modifications we have slightly revised the modifications made to Table 1017.1 by providing the necessary Footnote d and deleting Footnote b and adding Footnote e in the right column in order to eliminate potential conflicts with other provisions of the code. Footnote d is applicable to buildings protected with sprinkler systems in areas with interruptable water supply for Group I-2 occupancies where the corridor construction requirements are reduced to smoke partitions in accordance with Section 407.3. Footnote b is deleted and Footnote e is added for buildings provided with sprinkler systems in areas with interruptable water supply for Group I-3 occupancies where corridor fire-resistance ratings are also allowed to be reduced under specific conditions in Section 408.7. We have also changed the term "interrupted water supply" to "interruptable water supply." This ties in with the revisions we have proposed to the definition for "areas of interrupted water supply" in Code Change FS17-07/08.

The modifications in this Public Comment import the definition for "areas of interrupted water supply" from Code Change FS17-07/08 with modifications so that this code change proposal can be considered within the context of the technical changes to Table 1017.1 based upon an interrupted water supply and the definition of what makes an interrupted water supply applicable.

We have also attempted to address some of the concerns expressed by both the Fire Safety Committee which heard FS17-07/08 and the Means of Egress Committee which heard this code change proposal E116-07/08. It appears that most of the concerns related to how to clearly define what an area of interrupted water supply is and how it would apply in a given situation. We have taken a slightly different tact to address that concern by revising the definition so that it is for the term "interruptable water supply." The focus is then on the water supply itself rather than the area in which the water supply may be located. The text of the definition is also further revised to clarify that the issue is the water supply and its potential for being interrupted for extended periods of time due to the occurrence of a natural disaster rather than the area in which such a water supply may exist. We have further revised the definition to indicate that the interruptable water supply is only a concern where the water supply is not capable of supplying the required fire flow for fire protection as prescribed in the International Fire Code. It should be noted that Section 508 Fire Protection Water Supplies contains the requirements for a required water supply for fire protection. So if in the judgment of the fire code official a given fire protection water supply is not available in sufficient water quantity and pressure due to the impact of a natural disaster based on the criteria in the definition, then the water supply is considered an interruptable water supply. Consequently, any buildings served by that water supply would be considered to be in an area with an interrupted water supply.

We have also responded to the concern about this definition applying to hurricane prone regions which may be too broad. So we focused in on wind-borne debris regions which are a subset of hurricane-prone regions subject to much more severe wind conditions. We are well aware of several hurricane events in wind-borne debris regions in southeastern Florida where the water supplies have been out of service for days, even weeks, at a time until the community recovered sufficiently from the impacts of such hurricanes.

And, finally, we have deleted Item 4 of the definition which was objected to by several Committee members because it was too subjective and unenforceable. Thus, we have focused on the three key natural disaster occurrences within various areas or regions of the country where the code provides for additional requirements to address the effects of those natural disasters which basically include the following:

Areas or regions with high seismic activity

Flood hazard areas

Wind-borne debris regions located within hurricane-prone regions

In summary, it is our opinion that corridors provided to serve occupants in numbers greater than the threshold numbers specified in Table 1017.1 should not have their minimum 1-hour fire-resistance rating reduced in sprinklered buildings in areas which may have interruptable water supplies as defined in this Public Comment. The Committee suggested that it may be more appropriate to provide adequate redundancy for the water supply to avoid the problem of it being interrupted, rather than building in passive fire-resistive protection to protect the occupants impacted by such an interruptable water supply. However, if the water supply redundancies are effective, then the water supply would not be interruptable and this requirement would not apply. That is the genius of the proposed definition contained in this Public Comment. It focuses on the performance of the water supply rather than the area in which the water supply is located and which is subject to natural disasters. So if the water supply is in an area subject to natural disasters as defined in the definition and the water supply becomes interruptable for extended periods of time so that it can't deliver the necessary fire flows as required by the IFC based on the judgment of the fire code official (who may allow lesser flows and pressures provided they are at least marginally adequate for use by the fire department), then additional passive fire-resistive protection should be provided in buildings where the passive protection was traded-off because of the installation of an automatic sprinkler system that relies upon that water supply. We believe the proponent has adequately justified this approach in the Reason statements provided to the previously mentioned code changes, so we urge the ICC Class A voting members to approve this Public Comment which modifies E116-07/08 and incorporates a revised definition for interruptable water supply from Code Change FS17-07/08.

Final Action: AS AM AMPC____ D

E117-07/08
Table 1017.1 (IFC [B] Table 1017.1)

Proposed Change as Submitted:

Proponent: Greg Lake, Sacramento Metropolitan Fire District, representing California Fire Chiefs Association (Cal Chiefs); Thomas S. Zaremba, Roetzel & Andress, representing Pilkington Fire Glass North America

Revise table as follows:

TABLE 1017.1 (IFC [B] TABLE 1017.1)
CORRIDOR FIRE-RESISTANCE RATING

OCCUPANCY	OCCUPANT LOAD SERVED BY CORRIDOR	REQUIRED FIRE-RESISTANCE RATING (hours)	
		Without sprinkler system	With sprinkler system[c]
H-1, H-2, H-3	All	Not Permitted	1
H-4, H-5	Greater than 30	Not Permitted	1
A,B, ~~E,~~ F, M, S, U	Greater than 30	1	0
E	Greater than 30	1	1
R	Greater than 10	Not Permitted	0.5
I-2[a], I-4	All	Not Permitted	0
I-1, I-3	All	Not Permitted	1[b]

a. For requirements for occupancies in Group I-2, see Section 407.3.
b. For a reduction in the fire-resistance rating for occupancies in Group I-3, see Section 408.7
c. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.1.2 where allowed.

Reason: Lake - This code change proposal will require all corridors serving an occupant load greater than 30 in Group E educational occupancies to have a 1-hour fire-resistance rating except as allowed by Exception 1 to Section 1017.1.

Exception 1 to Section 1017.1 is a legitimate exception for the one-hour corridor fire resistance rating requirement since it requires every classroom to have at least one door directly to the exterior and that any rooms used for assembly purposes have at least ½ of the required means of egress directly to the exterior as well. Under those conditions, there is no need for the students and other occupants to rely on exiting the building via the corridors since they can go directly to the exterior and move away from the building to a safe area. However, if that is not the case, then the students, teachers, and other occupants of the educational occupancy must rely on the corridor system to exit safely from the building. In that case the paths of travel to get out of the building are restricted and they may be exposed to the room of fire origin while trying to evacuate. Certainly, the basis for one-hour fire resistive protection for corridors when the occupant load exceeds 30 is to provide for a reasonable level of protection for the occupants as they exit the building without having them unduly exposed to a fire condition which may impede their egress.

Presently, the International Building Code (IBC) allows the 1-hour fire-resistance rated corridor to be omitted where the building is protected by an automatic sprinkler system. We don't believe that such a trade-off is appropriate, especially in an educational occupancy where there are large numbers of children at relatively high density who are placed at risk in a fire situation. We believe that a balanced design approach to providing life safety in educational occupancies is prudent so that the 1-hour fire-resistance rated corridors can work in conjunction with the automatic sprinkler system to assure the level of life safety for the building's occupants intended by the code.

Although sprinklers are a valuable fire protection tool, they are not infallible nor can they be assured of providing the necessary degree of protection to allow a 1-hour reduction in fire-resistance for the corridors. A recent analysis of NFPA sprinkler system performance data by William E. Koffel, P.E. of Koffel Associates has indicated that sprinklers failed to perform satisfactorily in at least 1 out of every 9 fires that occur in sprinklered buildings. We believe that such a performance level does not justify deleting or trading-off the 1-hour fire-resistance rating for corridors that provide a protected means of egress for school children in Group E educational occupancies.

We do not believe that such trade-offs are appropriate where life safety is concerned. In such cases, it is advantageous and desirable to maintain the built-in passive fire resistant protection, as well as to provide the active automatic sprinkler system protection, where life safety is involved. In our opinion, trade-offs are entirely inappropriate where life safety is concerned. We believe that a balanced approach should be used to assure that the appropriate level of life safety will be provided to the occupants of the building who must rely upon the corridors to exit the building.

A secondary benefit of 1-hour fire resistance rated corridors is that they also assist fire fighters in doing their job by providing a protected means of access to the interior of the building where they can perform their search and rescue missions, as well as fire fighting operations, in relative safety. Fire resistance rated corridors can provide fire fighters with additional time to do their jobs more effectively and safely.

We strongly believe that sprinkler trade-offs should not be allowed for means of egress components. In California we are especially concerned because of the high probability of severe earthquakes occurring which can knock out the water supply to the sprinkler system. At present, the IBC does not allow sprinkler trade-offs for the fire resistance ratings required for exit stair enclosures, horizontal exits, and exit passageways. So why should sprinkler trade-offs be allowed for the 1-hour fire resistance rating of corridors which provide a protected egress path giving access to these exit elements?

Furthermore, other sprinkler trade-offs related to the means of egress in buildings have already been provided for in the IBC. For example, travel distance is allowed to be increased from 200 feet to 250 feet where automatic sprinkler systems are provided. The separation of exits (remoteness) is also allowed to be reduced where automatic sprinkler systems are installed. Interior finish requirements are relaxed within corridors where Class C interior finish can be used in lieu of Class B interior finish which would otherwise be required if not for the installation of automatic sprinklers.

We are concerned that the compounding effect of sprinkler trade-offs could lead to greater risk to the life safety of the building occupants, especially if combined with a reduction in or the elimination of the 1-hour fire resistance rating for corridors providing access to the exits or the exit stairs. Too much reliance on automatic sprinkler systems may not be wise where life safety is a key consideration. We strongly believe that a balanced approach to fire and life safety in buildings should be provided to greatly enhance the probability that the intended level of fire and life safety prescribed by the building code will be provided when a fire occurs, even if something should go wrong.

In conclusion it should also be noted that our Public Comment #1 to Code Change Proposal E127-06-07 which attempted to do exactly what this code change proposal is doing for corridors in Group E occupancies was successful in overturning the Committee's recommendation for disapproval at the ICC Final Action Hearings in Rochester, NY. Unfortunately, we were not able to achieve the necessary 2/3 majority vote for an approval. Because of that membership vote, we were encouraged to submit this code change proposal focusing on Group E occupancies.

Zaremba: The purpose of this proposal is to provide a redundant level of life-safety to children gathered in relatively high densities in educational occupancies. Currently, the code eliminates any required fire-resistance rating for corridors in E occupancies if a sprinkler system is in place. In the event of fire and a sprinkler system failure for any reason, (whether a loss of water; someone inadvertently closes the wrong valve, rendering the system inoperable; an explosion damages the piping; the fire starts in a non-sprinklered part of the building; etc. etc) redundancy will be necessary to ensure the safe evacuation of frightened children. The risk and need for redundancy are heightened if the school is multi-storied.

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

Committee Action: **Disapproved**

Committee Reason: The proposal to increase the fire resistance rating to 1 hour for the corridors in Group E was disapproved. No technical justification was presented for this increase. Non-rated corridors are a sprinkler system incentive for schools where the fire area threshold is 20,000 square feet. The fire load in schools is minimal. The *International Fire Code* has requirements for monthly fire drills, so students and teachers are trained and practiced for emergency evacuation. The issue of having other incidences where lock downs need to occur in the schools would not be helped by rated corridors. If rated corridors are required, corridor continuity requirements would prohibit the open plans and common areas now in schools.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because public comments were submitted.

Public Comment 1:

Christine Reed, Central County Fire Rescue, representing California Fire Chiefs Association, requests Approval as Submitted.

Commenter's Reason: As mentioned in our previous reason statement, we do not believe that sprinklers should be used as a trade-off for life safety issues such as exit corridors, especially in educational occupancies. Schools are notorious for having heavy fire loading, including text books, art projects, decorations, posters, etc. Along with all the increased fire loading comes additional smoke production and the rated corridor could slow down the migration of smoke from the room of origin to the corridors. There are many occasions when the teachers utilize the sprinkler heads to hang students' projects, which could compromise the effectiveness of the sprinkler system. Educational occupancies also tend to have large numbers of children in a relatively small area. When there is a fire in a school, many times those children are forced to attend another school while repairs are being done to the fire damaged school. With a higher level of protection there is a higher likelihood of less damage and therefore this would allow for faster reconstruction, and the ability for the children to return to their own school sooner. We believe that providing balanced fire protection that includes a combination of rated corridors in conjunction with an automatic fire sprinkler system will allow for the time needed to effectively evacuate children from an educational occupancy. It will also allow more time for the firefighters to be protected while conducting fire suppression activities.

Public Comment 2:

Thomas S. Zaremba, Roetzel & Andress, representing The Primary Fire Rated Glazing Manufacturers, requests Approval as Submitted.

Commenter's Reason: The Committee vote on this proposal was initially a tie. The Committee Chair broke the tie by voting to disapprove. I urge you to vote against the motion supporting the Committee recommendation and to vote in favor of this proposal as submitted.

I respectfully disagree with the Committee's assessment that no technical justification was submitted in support of E117. If technical justification means that proponents failed to bring forward proof of a recent fire upon which to base this proposal, then the Committee's assessment is correct. However, with or without a recent fire, technical justification exists for the adoption of this proposal.

Some life safety risks are sufficiently great that redundancy in fire protection is required. The life safety risks posed by fire in buildings occupied by large numbers of children with only a small number of adult supervisors (with occupant-corridor loads greater than 30) poses a life safety risk that requires redundancy in fire protection.

Children are in E occupancies precisely because they have not yet learned to take care of themselves. The Committee reasons that because schools have fire drills, redundancy in the fire protection features of school construction is unnecessary. Simply put, however, a fire drill is not the same as a real fire. In a real fire, exit corridors may be filled with smoke and steam. Assuming they work, the sprinklers may be covering everyone and everything with water. Seeing into a smoke and steam filled corridor when water is raining down from overhead sprinklers will not be the same as exiting the building in a fire drill. Sprinkler activation will make the floors wet and slippery and exiting children will likely be slipping and falling, with others falling over them from behind. Unlike a fire drill, children will be afraid in a real

fire. They may loose sight of and be unable to hear their teacher and simply hide under a desk out of fear. It will take time for teachers or first responders to realize whether some children are still in the building and to find them. Redundancy in fire protection features will mitigate the risks posed by the presence of a large number of unpredictable children.

EC117 adds redundancy to the fire protection features of E occupancies where the occupancy-corridor load is greater than 30. The need for redundancy is justified by the magnitude of the risk posed in buildings intended to be occupied by large numbers of children that act unpredictably and are unable to protect themselves from the often unpredictable and potentially catastrophic circumstances that can be encountered in a real fire.

I urge you to vote against the motion to adopt the Committee recommendation and to vote to adopt EC117 as submitted.

Final Action: AS AM AMPC____ D

E118-07/08
Table 1017.1 (IFC [B] Table 1017.1)

Proposed Change as Submitted:

Proponent: Greg Lake, Sacramento Metropolitan Fire District, representing California Fire Chiefs Association (Cal Chiefs)

Revise table as follows:

TABLE 1017.1 (IFC [B] TABLE 1017.1)
CORRIDOR FIRE-RESISTANCE RATING

OCCUPANCY	OCCUPANT LOAD SERVED BY CORRIDOR	REQUIRED FIRE-RESISTANCE RATING (hours)	
		Without sprinkler system	With sprinkler system[c]
H-1, H-2, H-3	All	Not Permitted	1
H-4, H-5	Greater than 30	Not Permitted	1
A,B, E, F, M, S, U	Greater than 30	1	0
R	Greater than 10	Not Permitted	~~0.5~~ 1
1-2[a], I-4	All	Not Permitted	0
I-1, I-3	All	Not Permitted	1[b]

a. For requirements for occupancies in Group I-2, see Section 407.3.
b. For a reduction in the fire-resistance rating for occupancies in Group I-3, see Section 408.7
c. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.1.2 where allowed.

Reason: We have submitted this code change proposal to focus on the Group R occupancies for requiring all corridors serving an occupant load greater than 10 to have a minimum fire-resistance rating of 1 hour, even where the building is sprinklered. We believe that the 1 hour fire-resistance rating required for a corridor in Group R occupancies should not be reduced to a ½ hour (30 minute) fire-resistance rating with the installation of an automatic sprinkler system, especially when that sprinkler system need only comply with NFPA 13R which allows for partial sprinklering of the building. We should point out that currently the code will not allow the required separation between adjacent Group R occupancies or sleeping units to be reduced below 1 hour even when an automatic sprinkler system is installed except for buildings of Types IIB, IIIB, and VB construction. But then the fire-resistance rating is allowed to be reduced to ½ hour only if the sprinkler system in installed in accordance with NFPA 13 and not NFPA 13R. Shouldn't corridors for these Group R occupancies have at least the same level of protection as the separations required between the individual occupied spaces in these occupancies?

Furthermore, it becomes difficult to enforce code requirements for ½ hour fire-resistance rated fire partitions since there are no penetration or joint protection systems listed for ½ hour wall assemblies nor are there any fire dampers listed for such wall assemblies. On top of that the ASTM E119 fire-resistance test for walls does not require the hose stream test for any wall that has a fire-resistance rating of less than 1 hour. So the corridor walls can be a very flimsy construction which could not even hold up to a hose stream test conducted after the wall would have been burned for ½ hour to satisfy the requirements in ASTM E119 for a 1-hour wall.

There are very few wall assemblies that have been listed for ½ hour. One of those is UL U319 which only requires one layer of 3/8 inch thick Type X gypsum wallboard on each side of studs. Otherwise, a calculated fire-resistance design could be used in accordance with Section 721.6. Such ½ hour (30 minute) partitions could be constructed of 3/8 inch regular gypsum wallboard installed on both sides of wood studs at 16 inches on center or 15/32 inch plywood or 3/8 inch thick plywood with glass fiber insulation in the stud space (which would actually achieve a 40 minute fire-resistance rating). We don't believe that these types of wall constructions provide adequate fire and smoke protection and structural integrity during a fire exposure condition, especially in the case where the automatic sprinkler system may fail to perform satisfactorily.

We are not aware of many projects where the corridor walls are actually constructed to meet the minimum ½ hour fire-resistance rating. It is just not practical since most projects only use one type of gypsum wallboard to stock the job in order to minimize confusion and improper installation using the wrong type or thickness. So for commercial jobs 5/8 inch Type X gypsum wallboard is generally used throughout the project. When a single layer of 5/8 inch Type X gypsum wallboard is installed on both sides of studs, it achieves a 1 hour fire-resistance rating. So it seems somewhat meaningless and not very cost effective to continue to allow the ½ hour trade-off for an NFPA 13R automatic sprinkler system in Group R occupancies.

We do not believe that such trade-offs are appropriate where life safety is concerned. In such cases, it is advantageous and desirable to maintain the built-in passive fire resistant protection, as well as to provide the active automatic sprinkler system protection, where life safety is involved. In our opinion, trade-offs are entirely inappropriate where life safety is concerned. We believe that a balanced approach should be used to assure that the appropriate level of life safety will be provided to the occupants of the building who must rely upon the corridors to exit the building.

A secondary benefit of 1-hour fire resistance rated corridors is that they also assist fire fighters in doing their job by providing a protected means of access to the interior of the building where they can perform their search and rescue missions, as well as fire fighting operations, in relative safety. Fire resistance rated corridors can provide fire fighters with additional time to do their jobs more effectively and safely.

We strongly believe that sprinkler trade-offs should not be allowed for means of egress components. In California we are especially concerned because of the high probability of severe earthquakes occurring which can knock out the water supply to the sprinkler system. At present, the IBC does not allow sprinkler trade-offs for the fire resistance ratings required for exit stair enclosures, horizontal exits, and exit passageways. So why should sprinkler trade-offs be allowed for the 1-hour fire resistance rating of corridors which provide a protected egress path giving access to these exit elements?

Furthermore, other sprinkler trade-offs related to the means of egress in buildings have already been provided for in the IBC. For example, travel distance is allowed to be increased from 200 feet to 250 feet where automatic sprinkler systems are provided. The separation of exits (remoteness) is also allowed to be reduced where automatic sprinkler systems are installed. Interior finish requirements are relaxed within corridors where Class C interior finish can be used in lieu of Class B interior finish which would otherwise be required if not for the installation of automatic sprinklers. And in Group R-2 occupancies the common path of travel is allowed to be increased in length by 67% from 75 feet to 125 feet where automatic sprinkler systems are provided.

We are concerned that the compounding effect of sprinkler trade-offs could lead to greater risk to the life safety of the building occupants, especially if combined with a reduction in or the elimination of the 1-hour fire resistance rating for corridors providing access to the exits or the exit stairs. Too much reliance on automatic sprinkler systems may not be wise where life safety is a key consideration. We strongly believe that a balanced approach to fire and life safety in buildings should be provided to greatly enhance the probability that the intended level of fire and life safety prescribed by the building code will be provided when a fire occurs, even if something should go wrong.

We acknowledge that automatic sprinkler systems are an important fire protection tool, but they are not infallible. Like any mechanical system, they are subject to failure. In fact, a recent statistical analysis of automatic sprinkler system performance conducted by the NFPA has concluded that automatic sprinkler systems fail to activate in at least 1 out of every 9 fires that occur in sprinklered buildings. In our opinion such a level of performance does not justify trading-off built-in fire resistant protection for the means of egress in buildings where the occupant's lives are at risk in a fire emergency. A balanced design approach of providing built-in fire resistive protection in conjunction with automatic sprinkler protection, in our opinion, will go a long way toward assuring that the level of fire and life safety intended by the building code will be delivered during a fire emergency.

In conclusion it should also be noted that our Public Comment #2 to Code Change Proposal E127-06-07 which attempted to do exactly what this code change proposal is doing for corridors in Group R occupancies was successful in overturning the Committee's recommendation for disapproval at the ICC Final Action Hearings in Rochester, NY. Unfortunately, we were not able to achieve the necessary 2/3 majority vote for an approval. Because of that membership vote, we were encouraged to submit this code change proposal focusing on Group R occupancies.

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

Committee Action: Disapproved

Committee Reason: The proposal to increase the fire resistance rating to 1 hour for the corridors in Group R was disapproved. No technical justification was presented for this increase. Sections 419, 708.3 and 711.3 allow for a dwelling unit separation of ½ hour, so exiting through a ½ fire resistance rated corridor would provide a consistent level of protection consistent with the continuity requirements.

Assembly Action: None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Christine Reed, Central County Fire Department, representing California Fire Chiefs Association (Cal Chiefs), requests Approval as Modified by this public comment.

Modify proposal by adding a new footnote d as follows:

TABLE 1017.1 (IFC [B] TABLE 1017.1)
CORRIDOR FIRE-RESISTANCE RATING

OCCUPANCY	OCCUPANT LOAD SERVED BY CORRIDOR	REQUIRED FIRE-RESISTANCE RATING (hours)	
		Without sprinkler system	With sprinkler system[c]
H-1, H-2, H-3	All	Not Permitted	1
H-4, H-5	Greater than 30	Not Permitted	1
A,B, E, F, M, S, U	Greater than 30	1	0
R	Greater than 10	Not Permitted	1[d]
1-2[a], I-4	All	Not Permitted	0
I-1, I-3	All	Not Permitted	1[b]

a. For requirements for occupancies in Group I-2, see Section 407.3.
b. For a reduction in the fire-resistance rating for occupancies in Group I-3, see Section 408.7
c. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.1.2 where allowed.
d. The required fire resistance rating shall be reduced to 0.5 hour in buildings of Types IIB, IIIB, or VB construction equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

Commenter's Reason: As previously mentioned in our reason statement for this proposal, currently the code requires that the separation between sleeping units and dwelling units in Group R occupancies be a minimum of 1 hour and can only be reduced to ½ hour based upon the installation of a full NFPA 13 system. Currently this table allows for a reduction of ½ hour based on the installation of either a NFPA 13 or 13R system. Therefore, we have revised this proposal by adding a new Footnote d which allows the proposed 1-hour corridor rating to be reduced to ½ hour in buildings of Types IIB, IIIB, and VB construction, but only when an NFPA 13 sprinkler system is installed. This is consistent with Section 708.3 Exception 2 and the Section 711.3 Exception and should satisfy the Committee's concern about this issue.

We believe that the corridors in Group R occupancies should have at least the same rating as required for the separation between the units. It is our experience in a multi-residential occupancy that a builder will construct the corridors with one-hour construction anyway since one-hour construction is needed between units. The builders have stated it is easier to do this, less confusing, and does not add to the construction costs. In residential occupancies the evacuation time is longer than other occupancies when the fire occurs at night since the residents must be awakened before they evacuate. The one-hour corridor would provide more protection and time for the residents to evacuate. When there is a fire in a residential type of occupancy, typically many people are displaced. With the higher level of protection we are proposing there is a higher likelihood that people would be able to return to their residence much quicker. Additionally, the higher level of protection would also allow for firefighters to be better protected while conducting rescue and fire suppression activities.

Final Action: AS AM AMPC____ D

E119-07/08

Table 1017.1 (IFC [B] Table 1017.1)

Proposed Change as Submitted:

Proponent: Greg Lake, Sacramento Metropolitan Fire District, representing California Fire Chief's Association (Cal Chiefs)

Revise table as follows:

TABLE 1017.1 (IFC [B] TABLE 1017.1)
CORRIDOR FIRE-RESISTANCE RATING

OCCUPANCY	OCCUPANT LOAD SERVED BY CORRIDOR	REQUIRED FIRE-RESISTANCE RATING (hours)	
		Without sprinkler system	With sprinkler system[c]
H-1, H-2, H-3	All	Not Permitted	1
H-4, H-5	Greater than 30	Not Permitted	1
A,B, E, F, M, S, U	Greater than 30	1	0
R	Greater than 10	Not Permitted	0.5
1-2[a], I-4	All	Not Permitted	~~0~~ 1
I-1, I-3	All	Not Permitted	1[b]

a. For requirements for occupancies in Group I-2, see Section 407.3.
b. For a reduction in the fire-resistance rating for occupancies in Group I-3, see Section 408.7
c. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.1.2 where allowed.

Reason: We have submitted this code change proposal to focus on the Group I occupancies for requiring all corridors to have a minimum fire-resistance rating of 1 hour, even where the building is sprinklered. We believe that the 1 hour fire-resistance rating required for a corridor in Group I occupancies is appropriate due to the users of these types of facilities are often of limited mobility, restrained, or completely nonambulatory and relying on staff to exit. This type of exiting requires more time and a rated corridor with opening protection will provide that additional time.

Being dependent on staff alone for safe egress is not appropriate. It has been long understood that in an emergency situation the less we are dependent on human error the better. With the life safety features provided in the current code for these occupancies we are heavily dependent on staffing levels. There are very few states that have minimum staffing levels in hospitals, let alone residential facilities. The NFPA and Joint Commission on Healthcare Accrediation, both promote the RACE concept for staff to follow. RACE is Rescue, Alarm, Contain, Extinguish. We have seen many fires in these facilities where the staff is doing good to get the rescue accomplished on their own, remember these are not first responders, they are health care providers, training in this area is limited and they often find themselves having to move a patient twice their size. Training of this type in an I-4 is likely non-existent. These staff members take on the responsibility of actually having to move several patients during a fire event and that will likely be the first time they see a fire up close enough that it will effect their own breathing not to mention that of the patient or elderly resident. With non-rated walls with non-protected openings, there is little chance that a staff person would have time to attempt the contain or extinguish elements of the RACE program. For fire and smoke damage to be allowed to migrate throughout a building unabated is unconscionable, sprinklers may take care of the fire, but not the smoke. A smoke damaged hospital is a closed hospital. How many small communities only have one hospital? If the only hospital in town needed to close for a couple of days to clean up after extensive smoke damage where will they send their patients?

We do not believe that such trade-offs are appropriate where life safety is concerned. In such cases, it is advantageous and desirable to maintain the built-in passive fire resistant protection, as well as to provide the active automatic sprinkler system protection, where life safety is involved. In our opinion, trade-offs are entirely inappropriate where life safety is concerned. We believe that a balanced approach should be used to assure that the appropriate level of life safety will be provided to the occupants of the building who must rely upon the corridors to exit the building.

A secondary benefit of 1-hour fire resistance rated corridors is that they also assist fire fighters in doing their job by providing a protected means of access to the interior of the building where they can perform their search and rescue missions, as well as fire fighting operations, in relative safety. Fire resistance rated corridors can provide fire fighters with additional time to do their jobs more effectively and safely.

We strongly believe that sprinkler trade-offs should not be allowed for means of egress components. In California we are especially concerned because of the high probability of severe earthquakes occurring which can knock out the water supply to the sprinkler system. At present, neither the UBC nor the IBC allow sprinkler trade-offs for the fire resistance ratings required for exit stair enclosures, horizontal exits, and exit passageways. So why should sprinkler trade-offs be allowed for the 1-hour fire resistance rating of corridors which provide a protected egress path giving access to these exit elements?

Furthermore, other sprinkler trade-offs related to the means of egress in buildings have already been provided for in the IBC. For example, travel distance is allowed to be increased from 150 feet to 200 feet where automatic sprinkler systems are provided. The separation of exits (remoteness) is also allowed to be reduced where automatic sprinkler systems are installed. Interior finish requirements are relaxed within corridors where Class B interior finish can be used where Class A interior finish would otherwise be required if not for the installation of automatic sprinklers.

We are concerned that the compounding effect of sprinkler trade-offs could lead to greater risk to the life safety of the building occupants, especially if combined with a reduction in or the elimination of the 1-hour fire resistance rating for corridors providing access to the exits or the exit stairs. Too much reliance on automatic sprinkler systems may not be wise where life safety is a key consideration. We strongly believe that a balanced approach to fire and life safety in buildings should be provided to greatly enhance the probability that the intended level of fire and life safety prescribed by the building code will be provided when a fire occurs, even if something should go wrong.

We acknowledge that automatic sprinkler systems are an important fire protection tool, but they are not infallible. Like any mechanical system, they are subject to failure. In fact, a recent statistical analysis of automatic sprinkler system performance conducted by the NFPA has concluded that automatic sprinkler systems fail to activate in at least 1 out of every 9 fires that occur in sprinklered buildings. In our opinion such a level of performance does not justify trading-off built-in fire resistant protection for the means of egress in buildings where the occupant's lives are at risk in a fire emergency. A balanced design approach of providing built-in fire resistive protection in conjunction with automatic sprinkler protection, in our opinion, will go a long way toward assuring that the level of fire and life safety intended by the building code will be delivered during a fire emergency.

In conclusion it should also be noted that our Public Comment #3 to Code Change Proposal E127-06-07 which attempted to do exactly what this code change proposal is doing for corridors in Group I-2 and I-4 occupancies was successful in overturning the Committee's recommendation for disapproval at the ICC Final Action Hearings in Rochester, NY. Unfortunately, we were not able to achieve the necessary 2/3 majority vote for an approval. Because of that membership vote, we were encouraged to submit this code change proposal focusing on Group I-2 and I-4 occupancies.

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

Committee Action: Disapproved

Committee Reason: The proposal to increase the fire resistance rating to 1 hour for the corridors in Groups I-2 and I-4 was disapproved. No technical justification was presented for this increase. Section 410 requires smoke partitions in Group I-2 and smoke partitions do not have a fire resistance rating. This proposal is not coordinated with those provisions. The requirement to rate the corridors could dramatically affect the doors commonly used along with the standard operation of hospitals. Group I-2 facilities have trained staff for assistance in evacuation and are required to meet additional safety inspections that include the sprinkler system.

Assembly Action: None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Christine Reed, Central County Fire Department, representing California Fire Chiefs, requests Approval as Modified by this public comment.

407.3 Corridor walls. Corridor walls shall be constructed as ~~smoke~~ fire partitions in accordance with Section 708 ~~710~~.

Commenter's Reason: This modification addresses one of the Committee's concerns and resolves an omission in the original proposal in reference to the requirements for the fire-resistance rated construction of corridors in Group I-2 occupancies. With the increase proposed to the fire-resistance rating requirement in Table 1017.1 to 1-hour for Group I-2 occupancies in a sprinklered building, there was a conflict in Footnote (a) referencing Section 407.3. The change now correlates the table's requirement with the appropriate reference.

Also, making this modification to Section 407.3 does not affect the provisions in Section 407.3.1 Corridor Doors that allow the corridor doors to be non-rated and without closing devices, provided they are an effective barrier to limit the transfer of smoke. This was another one of the Committee's concerns we've addressed with this modification.

If this Public Comment is approved by the ICC Class A voting members, it will result in the following improvements in fire protection for 1-hour corridors in Group I-2 occupancies:

- The corridor walls will be of substantial construction capable of resisting a 1-hour fire exposure since they must pass the hose stream test of ASTM 119 in order to achieve a 1-hour fire-resistance rating.
- Ducts penetrating the 1-hour corridor walls will be protected as through penetrations.
- Joints and penetrations located in the 1-hour corridor walls will be protected with a minimum 1-hour fire-resistance rating to maintain the integrity of the walls.
- Windows installed in the 1-hour corridor walls will be fire protection rated so they won't be subject to breaking out of their openings in the early stages of a fire.

These additional protection features cannot be reasonably compensated for by the staffing provided at these facilities, nor the automatic sprinkler system should the system not perform as intended. We believe this will provide an improved level of fire and life safety for the occupants of these Group I-2 occupancies, as well as for the fire fighters who must perform search and rescue missions, and suppress the fire. So we urge the Class A voting membership to approve this Public Comment with the modification to Section 407.3 Corridor Walls.

Final Action: AS AM AMPC____ D

E120-07/08
Table 1017.1 (IFC [B] Table 1017.1)

Proposed Change as Submitted:

Proponent: A. Brooks Ballard, Virginia Department of Corrections

Revise table as follows:

TABLE 1017.1 (IFC [B] Table 1017.1)
CORRIDOR FIRE-RESISTANCE RATING

OCCUPANCY	OCCUPANT LOAD SERVED BY CORRIDOR	REQUIRED FIRE-RESISTANCE RATING (HOURS)	
		Without sprinkler system	With sprinkler system[c]
H-1, H-2, H-3	All	Not Permitted	1
H-4, H-5	Greater than 30	Not Permitted	1
A, B, E, F, M, S, U	Greater than 30	1	0
R	Greater than 10	1	0.5
I-2[a], I-4	All	Not Permitted	0
I-1, ~~I-3~~	All	Not Permitted	1[b]
I-3	All	Not Permitted	0

a. For requirements for occupancies in Group I-2, see Section 407.3.
~~b. For a reduction in the fire resistance rating for occupancies in Group I-3, see Section 408.7.~~
~~c~~.b Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 where allowed.

Reason: Use Group I-3 is a constantly supervised environment and in an emergency situation evacuation is staff supervised and assisted. Locking arrangements in other portions of the code related to Group I-3 provide accommodation for expedient movement and evacuation of occupants. The basic philosophy in a Group I-3 environment for purposes of public safety must be a 'defend in place' emergency response. Generally first line of defense is to move the occupants to another safe place (an adjacent smoke compartment not through a corridor) within the building. Section 408 provides for additional protection and separation within the building by requiring more smoke barriers than other occupancies. Fuel loading in these facilities, by their nature, is minimal. Rating of glazed openings brings in the requirement for wire glass or other very expensive rated glazing, none of which are rated for security. Windows in corridors are necessary for supervision and control of occupants and they must also contain them (be non breakable for a defined length of time). It is desirable, to minimize the inclusion of wire glass (or other rated glazing) in these facilities and handle occupant life safety protection in other ways allowed d by the coed because rated glazing is a security and safety hazard because it is easily and frequently broken and pieces of it can be used as weapons. At least one

Legacy Code did not require rating of corridors in Group I-3 occupancy.
Note b should be deleted because Section 408.7 does not address reduction of corridor ratings in Group I-3.

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

Committee Action: **Disapproved**

Committee Reason: The proponent has not provided technical justification to reduce the corridor ratings for Group I-3.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because public comments were submitted.

Public Comment 1:

Bradley R. Hall, PSA Dewberry, Inc., requests Approval as Submitted.

Commenter's Reason: I am in total agreement with reducing the corridor fire-resistance rating in an I-3 occupancy to 0 hours as proposed by A. Brooks Ballard. In her reason paragraph she mentions that at least one Legacy Code did not require rated corridors for this occupancy when in fact there were two. The 1999 Standard Building Code Section 704.2.4 and the 1999 Boca National Building Code Section 1011.4 both required a 0 hour fire-resistance rating for the corridors. With the I-3 occupancy there typically are only staff and inmates located in the facility. The only public people who come into the facility are social workers and clergy so all occupants have a good understanding of the facility layout and how to exit the facility. Before a facility is allowed to accept inmates the user must submit policy and procedures to the state detailing these exiting requirements. It is imperative that staff must observe inmates at all times especially movement in an emergency so clear unobstructed window glazing must be in place to allow the staff to do their job. This proposed modification allows this to occur without compromising the noncombustible characteristics of the facility.

Public Comment 2:

A. Brooks Ballard, Virginia Department of Corrections, requests Approval as Modified by this public comment.

Modify proposal as follows:

TABLE 1017.1 (IFC [B] Table 1017.1)
CORRIDOR FIRE-RESISTANCE RATING

OCCUPANCY	OCCUPANT LOAD SERVED BY CORRIDOR	REQUIRED FIRE-RESISTANCE RATING (HOURS)	
		Without sprinkler system	With sprinkler system[c b]
H-1, H-2, H-3	All	Not Permitted	1
H-4, H-5	Greater than 30	Not Permitted	1
A, B, E, F, M, S, U	Greater than 30	1	0
R	Greater than 10	1	0.5
I-2[a], I-4	All	Not Permitted	0
I-1	All	Not Permitted	1[b]
I-3[c]	All	Not Permitted	0

a. For requirements for occupancies in Group I-2, see Section 407.3.
b Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 where allowed.
c. Corridor walls in occupancies in Group I-3 shall be constructed as smoke partitions and in accordance Section 408.7.

Commenter's Reason: In addition to the original supporting statement:

This change clarifies the inconsistency between this table and the requirements in Chapter 4 for I-3.

Sprinkler protection in I-3 has recently been upgraded to require systems with quick response heads thus providing greater protection in these facilities.

Because of security and safety requirements, there is a limitation of free egress movement in these facilities with movement being directed, limited and controlled by staff. Safety is maintained by the use of smoke partitions which utilize security glazing for necessary protection while eliminating the security hazards and maintenance problems presented by wire glass. There are no security rated glazing currently available for use which do not incorporate wire glass in their assembly.

Two recent legacy codes did not require a fire resistance rating for corridors in Group I-3, instead handling it in the special occupancy requirements for the I-3 use group. This change realigns with at least two prior codes. NFPA requires only smoke resistant construction.

Bibliography:
1996 BOCA National Building Code, Table 1011.4
1999 Standard Building Code, Table 704.2.4
2006 NFPA 5000, Section 21.3.6, Table 22.3.8.1
2006 NFPA 101, Section 22.3.6, Table 22.3.8

Final Action: AS AM AMPC____ D

E123-07/08
1017.5 (IFC [B] 1017.5)

Proposed Change as Submitted:

Proponent: Barry N. Gupton, North Carolina Department of Insurance, Engineering Division

Revise as follows:

1017.5 (IFC [B] 1017.5) Corridor continuity. ~~Fire-resistance-rated corridors~~ Corridors shall be continuous from the point of entry to an exit, and shall not be interrupted by intervening rooms or enclosed elevator lobbies.

Exceptions:

1. Foyers, office lobbies or reception rooms constructed as required for corridors shall not be constructed as intervening rooms.

2. In Group B buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, corridors are permitted to lead through enclosed elevator lobbies provided all areas of the building have access to at least one required exit without passing through the elevator lobby.

Reason: The purpose of this proposal is to expand the scope of this Section to be consistent with the corridor definition and to limit the use of enclosed elevator lobbies.

The current provisions imply that there are no continuity requirements for non-fire-resistance-rated corridors. Corridors are a design choice, and once established should offer a predictable level of safety to access the exits.

The enclosed elevator lobby should be considered part of the elevator shaft enclosure protection system, rather than part of the corridor system. The intent is to limit the spread of smoke to other floors beyond the point of origin. The scope of the elevator lobby provision is limited and doesn't affect most buildings (only Group I-3 greater than 3-stories, non-sprinklered buildings greater than 3-stories, and non-pressurized high rise buildings).

Cost Impact: The code change proposal will increase the cost of construction where corridor continuity is not currently provided.

Committee Action: **Disapproved**

Committee Reason: The expansion of the corridor continuity requirements from rated corridors to all corridors is a major concern. If Exception 2 is warranted, no justification was provided as to why this should be limited to just Group B and not all Groups.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Bill Ziegert, Smoke Guard, Inc., requests Approval as Modified by this public comment.

Modify proposal as follows:

1017.5 (IFC [B] 1017.5) Corridor continuity. Corridors shall be continuous from the point of entry to an exit, and shall not be interrupted by intervening rooms or enclosed elevator lobbies.

Exceptions:

1. Foyers, office lobbies or reception rooms constructed as required for corridors shall not be constructed as intervening rooms.
2. In Group B buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, corridors are permitted to lead through enclosed elevator lobbies provided all areas of the building have access to at least one required exit without passing through the elevator lobby.
3. In buildings where an exit enclosure can be directly accessed from the elevator lobby, egress is permitted through the elevator lobby to the exit enclosure.

Commenter's Reason: The enclosed elevator lobby required by IBC 2006 707.14.1 is intended entirely to protect the elevator shaft from smoke entering it and spreading to other floors. It is part of the elevator shaft protection system just like rated elevator doors, and should not be considered part of the corridor system. Allowing building occupants to pass through the elevator lobby on their way to the exit stairs on the fire floor can lead to excessive amounts of smoke entering the lobby as the doors are repeatedly opened / closed, and then due to the stack effect this smoke can be drawn into the elevator shaft and be discharged at the upper floors of the building spreading the hazard from the fire well beyond the floor of origin. Egress continuity demands that there be no decrease in the level of compartmentation protection to the point of exit discharge. Egress continuity should also include the protection from the increased risk that a smoke filled elevator lobby would present. Requiring occupants to traverse through the elevator lobby on their way to the exit stair system, is forcing them to be exposed to the hazard of smoke in the elevator shaft needlessly and reducing their level of protection.

Final Action: AS AM AMPC____ D

E124-07/08
1017.5 (IFC [B] 1017.5)

Proposed Change as Submitted:

Proponent: Sarah A. Rice, CBO, Schirmer Engineering Corporation

Revise as follows:

1017.5 Corridor continuity. Fire-resistance-rated corridors shall be continuous from the point of entry to an exit, and shall not be interrupted by intervening rooms. Where the corridor ends at an exit that is permitted to be unenclosed by Section 1020.1, The fire resistance rating shall terminate at the point where vertical ascent or decent occurs.

Exception: Foyers, lobbies or reception rooms constructed as required for corridors shall not be construed as intervening rooms.

Reason: Yes it is important to provide a specific level of protection to a person that is in a fire rated corridors as often they are less able to identify an emergency due to the confinement of the space.

But to not allow the occupants to discharge from a very restrictive space into a large room where there would be numerous paths of travel to an exit does not make sense. A large space offers many advantages that a corridor would not, they include quick recognition of an emergency, a much larger space for smoke to disperse in and typically numerous paths of travel to the exit.

An example of the problem with the current language would be if the spaces on a floor were arranged in what could be referred to as a bar-bell configuration. There are exits at each end of the floor, there are multiple rooms located in the center of the floor all opening onto a corridor which allows travel to both of the exits. The rooms have an occupant load of greater than 30 and thus require a fire rated corridor. The corridor opens onto a very large room at each end – hence the bar-bell description. While when in the corridor there is the required protection, but once an occupant leaves that corridor they enter a very large room with numerous paths of travel to the exit. Should that room be compromised, they can go back the other way and again have access to a space that would provide numerous paths of travel to the exit.

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

Committee Action: **Disapproved**

Committee Reason: This should be referred to the Code Technologies Committee. See the committee action on E103-07/08. The language does not accomplish the intent stated in the reason. Once a certain level of protection is provided along a confined path, that level of protection should be maintained to the exit discharge.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Sarah A. Rice, CBO, Schirmer Engineering Corportion, requests Approval as Modified by this public comment.

Modify proposal as follows:

1017.5 Corridor continuity. Fire-resistance-rated corridors shall be continuous from the point of entry to an exit, and shall not be interrupted by intervening rooms. Where the corridor ends at an exit that is permitted to be unenclosed by Section 1020.1. The fire resistance rating shall terminate <u>through the use of a wall and opening protectives that are part of the corridor enclosure</u> at the point where vertical ascent or decent occurs<u>, or shall extend down the unenclosed exit stair to the exit discharge</u>.

Exception: Foyers, lobbies or reception rooms constructed as required for corridors shall not be construed as intervening rooms.

Commenter's Reason: The proposed language is intended to add clarity to the enclosure provisions of fire rated corridors when they connect to unenclosed exit stairs.

Final Action: AS AM AMPC____ D

E125-07/08
1017.5 (IFC [B] 1017.5)

Proposed Change as Submitted:

Proponent: Lori Lee Graham, City of Portland, OR

Revise as follows:

1017.5 (IFC [B] 1017.5) Corridor continuity. Fire-resistance-rated corridors shall be continuous from the point of entry to an exit, and shall not be interrupted by intervening rooms.

Exception: Foyers, lobbies or reception rooms constructed as required for corridors shall not be construed as intervening rooms.

<u>Elevator hoistway openings without lobbies shall comply with the opening protection requirements of Section 715.4.3 or shall meet Section 707.14.1, Exception 3.</u>

Reason: There has been confusion between the application of Sections 707.14, 715.4.3 and Section 1017.5.

Section 707.14.1 states that an elevator lobby is not needed if any one of the six listed exceptions is met. The exemption of the lobby has been interpreted to mean that the corridor continuity requirement in Section 1017.5 or the opening protection requirements of 715.4.3 are also exempted. This proposal ties all three sections together providing a clear pathway to the necessary requirements for elevator hoistway openings.

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

Committee Action: **Disapproved**

Committee Reason: The proposal would require elevator hoistway protection where elevator lobbies are not required. The reference to Section 715.4.3 is not an appropriate reference for shaft openings.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Frank Hertzog, Smoke Safety Council, requests Approval as Submitted.

Commenter's Reason: This amendment addresses inconsistencies in several code sections, as addressed by the proponent. "Corridor" is defined in Chapter 10 of the IBC as "An enclosed exit access component that defines and provides a path of egress travel to an exit." The proponent correctly identifies the elevator hoistway opening as requiring the protection called for by Section 715.4.3 for door assemblies in fire-resistance rated corridors. Elevator hoistway openings communicate directly between every horizontal corridor and a vertical column (elevator hoistway) penetrating every floor. The elevator hoistway is typically the largest vertical penetration in the building. Hoistway openings that open into fire-resistance rated corridors violate the integrity of the definition of an "enclosed exit access component" as a corridor is defined in the building code. Corridors in occupancies deemed to be of higher risk are required to have fire-resistance rated construction while those deemed to be at lesser risk can use smoke rated construction when sprinklered.

Section 707 **Shaft Enclosures**, subsection 707. 7 **Openings** prescribes that "Openings in a shaft enclosure shall be protected in accordance with Section 715 as required for fire barriers." Section 715.4.3 is titled "Door assemblies in corridors and smoke barriers". This section defines the requirements that apply to doors in fire-resistance rated corridors, which includes elevator hoistway doors. This proposed amendment addresses the need for consistency between Sections 707.7, 715.4.3 and 1017.5 and provides for protection of openings into fire-resistance rated corridors consistent with the intent of these sections.

Final Action: AS AM AMPC____ D

E126-07/08
1019.1 (IFC [B] 1019.1)

Proposed Change as Submitted:

Proponent: Gerald Anderson, City of Overland Park, KS, representing himself

Revise as follows:

1019.1 (IFC [B] 1019.1) (Supp) Exits from stories. All spaces within each story shall have access to the minimum number of approved independent exits as specified in Table 1019.1 based on the occupant load of the story. For the purposes of this chapter, occupied roofs shall be provided with exits as required for stories. The required number of exits from any story shall be maintained until arrival at grade or the public way.

Exceptions:

1. As modified by Section 403.15 (additional exit stairway).
2. As modified by Section 1019.2.
3. Rooms and spaces within each story provided with and having access to a means of egress that complies with Exception 3 or 4 in Section 1016.1 shall not be required to be provided the minimum number of approved independent exits required by Table 1019 on each story.
4. In Groups R-2 and R-3 occupancies, one means of egress is permitted within and from individual dwelling units with a maximum occupant load of 20 where the dwelling unit is equipped throughout with an automatic sprinkler system in accordance with Sections 903.3.1.1 or 903.3.1.2.

5. Within a story, rooms and spaces complying with Section 1015.1 with exits that discharge directly to the exterior at grade level, are permitted to have one exit.

Reason: The purpose of this code change is to make allowance for those rooms or spaces that have exits independent of the building exits. The exits serving these spaces exit directly at grade. Often times due to grade differentiations these rooms spaces may exit at different levels, thus I did not speak to exits from the basement or first story.

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

Committee Action: **Approved as Modified**

Modify the proposal as follows:

1019.1 (IFC [B] 1019.1) (Supp) Exits from stories. All spaces within each story shall have access to the minimum number of approved independent exits as specified in Table 1019.1 based on the occupant load of the story. For the purposes of this chapter, occupied roofs shall be provided with exits as required for stories. The required number of exits from any story shall be maintained until arrival at grade or the public way.

Exceptions:

1. As modified by Section 403.15.
2. As modified by Section 1019.2.
3. Rooms and spaces within each story provided with and having access to a means of egress that complies with Exception 3 or 4 in Section 1016.1 shall not be required to be provided the minimum number of approved independent exits required by Table 1019 on each story.
4. In Groups R-2 and R-3 occupancies, one means of egress is permitted within and from individual dwelling units with a maximum occupant load of 20 where the dwelling unit is equipped throughout with an automatic sprinkler system in accordance with Sections 903.3.1.1 or 903.3.1.2.
5. Within a story, rooms and spaces complying with Section 1015.1 with exits that discharge directly to the exterior at ~~grade level~~ the level of exit discharge, are permitted to have one exit.

Committee Reason: The modification is for coordination with the revision to level of exit discharge approved in the committee actions on E8-07/08 and E5-06/07. There are situations where rooms or spaces have independent exits directly to the outside of a building, similar to what is permitted in Section 1019.2, Exception 3. As long as these spaces meet provisions for spaces with one means of egress with access directly to the outside, there is an adequate level of safety provided.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because public comments were submitted.

Public Comment 1:

Lori Lee Graham, City of Portland, OR, representing herself, requests Approval as Modified by this public comment.

Further modify proposal as follows:

1019.1 (IFC [B] 1019.1) (Supp) Exits from stories. All spaces within each story shall have access to the minimum number of approved independent exits as specified in Table 1019.1 based on the occupant load of the story. For the purposes of this chapter, occupied roofs shall be provided with exits as required for stories. The required number of exits from any story shall be maintained until arrival at grade or the public way.

Exceptions:

1. As modified by Section 403.15.
2. As modified by Section 1019.2.
3. Rooms and spaces within each story provided with and having access to a means of egress that complies with Exception 3 or 4 in Section 1016.1 shall not be required to be provided the minimum number of approved independent exits required by Table 1019 on each story.
4. In Groups R-2 and R-3 occupancies, one means of egress is permitted within and from individual dwelling units with a maximum occupant load of 20 where the dwelling unit is equipped throughout with an automatic sprinkler system in accordance with Sections 903.3.1.1 or 903.3.1.2.
5. Within a story, rooms and spaces complying with Section 1015.1 with exits serving no other rooms, spaces or stories that discharge directly to the exterior at the level of exit discharge, are permitted to have one exit.

Commenter's Reason: As approved by the committee, this is a wide open exception that will allow single exits from spaces at ANY HEIGHT. The committee reason for approval speaks to rooms or spaces that have independent exits. There is nothing in the committee approved version that requires the exit to be independent of the exits from other spaces or stories. There is no limit on how high in the building (or deep in the ground for basements) this space could be. As approved by the committee, there could be a space on the 23rd floor office building which is less than 4900 square feet and it could have access to only one exit (the vertical exit enclosure) as long as that exit discharges at the level of exit discharge. Please not that except for horizontal exits – ALL exits discharge at the level of exit discharge.

The added language would make sure that the revisions meet the intent of the committee's statement that the spaces have independent exits. This doesn't limit it to being on the 23rd floor, but people will unlikely commit space for an individual exit from the 23rd floor to the ground. But they might still do it for a 4th, 5th or 6th story.

Public Comment 2:

Tim Pate, City & County of Broomfield Building Department, representing Colorado Chapter of ICC, requests Approval as Modified by this public comment.

Further modify proposal as follows:

1019.1 (IFC [B] 1019.1) (Supp) Exits from stories. All spaces within each story shall have access to the minimum number of approved independent exits as specified in Table 1019.1 based on the occupant load of the story. For the purposes of this chapter, occupied roofs shall be provided with exits as required for stories. The required number of exits from any story shall be maintained until arrival at grade or the public way.

Exceptions:

1. As modified by Section 403.15.
2. As modified by Section 1019.2.
3. Rooms and spaces within each story provided with and having access to a means of egress that complies with Exception 3 or 4 in Section 1016.1 shall not be required to be provided the minimum number of approved independent exits required by Table 1019 on each story.
4. In Groups R-2 and R-3 occupancies, one means of egress is permitted within and from individual dwelling units with a maximum occupant load of 20 where the dwelling unit is equipped throughout with an automatic sprinkler system in accordance with Sections 903.3.1.1 or 903.3.1.2.
5. Within a story, rooms and spaces complying with Section 1015.1 with ~~exits~~ exit access that discharge directly to the exterior at the level of exit discharge, are permitted to have one exit.

Commenter's Reason: The proponent's Reason statement appears to suggest Exception No 5 is intended to be applied to structures set upon a sloping site; the exception enabling a single means of egress to serve Section 1015.1 complying rooms or spaces with at-grade exit access.

However as written, Exception No. 5 enables every story of a small-footprint building to be served by a single exit regardless of the number of stories above the level-of-exit-discharge at which the occupant enters the exit. For example a ten-story structure, each story consisting of a pair of 4,000-sq. ft. residential condominiums units would be allowed to be served by a single stair enclosure; the same would be allowed for a six-story 10,000-sq. ft. floor plate office building, each floor level occupied by a pair of 5,000-sq. ft. office suites. The exception if left unmodified could be interpreted to allow a radical departure in the means-of-egress redundancy provided by the legacy codes without providing any justification warranting the change.

The modification proposed by this public comment is in harmony with the Committee's Reason Statement provided to document their modification of the proponent's initial proposal; .i.e. "As long as these spaces meet provisions for spaces with one means of egress with access directly to the outside, there is an adequate level of safety provided."

Final Action: AS AM AMPC____ D

E127-07/08

1019.2, Table 1019.2, 1015.1, Table 1015.1 (IFC [B] 1019.2, [B] Table 1019.2, [B] 1015.1, [B] Table 1015.1)

Proposed Change as Submitted:

Proponent: Jonathan C. Siu, City of Seattle Department of Planning and Development, Gregory R. Keith, Professional heuristic Development, representing The Boeing Company

Revise as follows:

1019.2 (IFC [B] 1019.2) (Supp) ~~Stories with one exit.~~ Single exits. Only one exit shall be required from Group R-3 occupancy buildings or from stories of other buildings as indicated in Table 1019.2. ~~specified below:~~ Occupancies shall be permitted to have a single exit in buildings otherwise required to have more than one exit if the areas served by the single exit do not exceed the limitations of Table 1019.2. Mixed occupancies shall be permitted to be served by single exits provided each individual occupancy complies with the applicable requirements of Table 1019.2 for that occupancy. Where applicable, cumulative occupant loads from adjacent occupancies shall be considered in accordance with the provisions of Section 1004.1. Basements with a single exit shall not be located more than one story below grade plane.

~~1. Stories meeting the limitations of Table 1021.2.~~
~~2. Buildings of Group R-3 occupancy.~~

TABLE 1019.2 (IFC [B] TABLE 1019.2)
(Supp) STORIES WITH ONE EXIT

STORY ~~ABOVE GRADE PLANE~~	OCCUPANCY	MAXIMUM OCCUPANTS (OR DWELLING UNITS) PER FLOOR AND TRAVEL DISTANCE TO EXIT
First story or basement	A, B[d], E[e], F[d], M, U, S[d]	49 occupants and 75 feet travel distance
	H-2, H-3	3 occupants and 25 feet travel distance
	H-4, H-5, I, R	10 occupants and 75 feet travel distance
	S[a]	29 occupants and 100 feet travel distance
Second story	B[b], F, M, S[a]	29 occupants and 75 feet travel distance
	R-2	4 dwelling units and 50 feet travel distance
Third Story	R-2[c]	4 dwelling units and 50 feet travel distance

For SI: 1 foot = 3048.mm

a. For the required number of exits for parking structures, see Section 1019.1.1.

b. For the required number of exits for air traffic control towers, see Section 412.1.

1015.1 (IFC [B] 1015.1) (Supp) Exits or exit access doorways from spaces. Two exits or exit access doorways from any space shall be provided where one of the following conditions exists:

1. The occupant load of the space exceeds one of the values in Table 1015.1.

   Exception: In Groups R-2 and R-3 occupancies, one means of egress is permitted within and from individual dwelling units with a maximum occupant load of 20 where the dwelling unit is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

2. The common path of egress travel exceeds one of the limitations of Section 1014.3.
3. Where required by Sections 1015.3, 1015.4, 1015.5, 1015.6 or 1015.6.1.

   Exception: Group I-2 occupancies shall comply with Section 1014.2.2.

Where a building contains mixed occupancies, each individual occupancy shall comply with the applicable requirements for that occupancy. Where applicable, cumulative occupant loads from adjacent occupancies shall be considered in accordance with the provisions of Section 1004.1.

TABLE 1015.1 (IFC [B] TABLE 1015.1)
SPACES WITH ONE ~~MEANS OF EGRESS~~ EXIT OR EXT ACCESS DOORWAY

OCCUPANCY	MAXIMUM OCCUPANT LOAD
A, B, E[a], F, M, U	49
H-1, H-2, H-3	3
H-4, H-5, I-1, I-3, I-4, R	10
S	29

a. Day care maximum occupant load is 10.

Reason: This proposal is intended to follow up on Item E136-06/07 of the previous code development cycle. The City of Portland, Oregon, proponents of that submittal, correctly identified shortcomings in the 2006 Table 1019.2. The Means of Egress Code Development Committee and the membership agreed as the item was approved and appears in the 2007 Supplement. As much as the code change represents a significant improvement, specific details remain unaddressed. The City of Seattle frequently encounters single exit designs and we feel that too much is presently left to interpretation. This proposal primarily adds explanatory language to the section text. It is felt that this more detailed verbiage is necessary to provide clarity and lend to uniformity in application of single exit provisions. An indication that this is necessary is offered in the 2006 International Building Code, Code and Commentary, Volume 1. That document makes two statements of questionable technical merit or history. For example, it states, “Also, this section assumes single occupancy buildings. The use of these provisions for mixed occupancies is subject to approval by the building official.” Section 1019.1 or 1019.2 do not make that distinction and previous editions of the commentary have not either. The 2006 Commentary also states, “It is important to note that the provisions in Section 1019.2 apply to entire buildings only, not individual stories or fire areas.” This statement has obviously been nullified by the 2007 Supplement.

The reformatting of Table 1019.2 in the 2007 Supplement goes a long way in implying the purpose of the table. That is, to indicate the combination of variables under which a given occupancy may be served by a single exit. It is felt that these provisions are intended to be used in combination based on their individual merit. For example, a building of any height where the remainder of the building is served by two or more exits may have a Group M occupancy at the second story of the building so long as that occupancy has an occupant load of not more that 29 persons and the travel distance does not exceed 75 feet. This obviously assumes no cumulative occupant loads as regulated by Section 1004.1. Should one occupancy egress through another occupancy, the cumulative occupant load and applicable travel distance would serve as entry values for Table 1019.2. Additionally, the same building could have a Group A occupancy at the first story of the building provided that the occupant load and the travel distance did not exceed 49 occupants and 75 feet, respectively.

Section 1001.1 fundamentally requires that, "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." Clearly, means of egress provisions apply to the "portions served" and may be designed independently of other "portions served" within a given building. The proposed second sentence of Section 1019.2 makes this distinction. This portion-by-portion philosophy also potentially applies to mixed occupancies so long as the individual occupancies do not exceed the limitations for those occupancies as delineated in Table 1019.2. The Boeing Company has been instrumental in the development of current IBC mixed occupancy requirements. They share our concern about the vagueness of single exit provisions and are co-proponents of this proposal. Boeing noted that the perceived limitation of mixed occupancies in individual story applications could also be applied to individual spaces given the similarity of threshold requirements in Section 1015.1. Accordingly, that section has also been modified to clarify mixed occupancy requirements. Additionally, the title of Table 1015.1 has been altered to agree with the title of the section and the text in Section 1015.1.

Lastly, and to support a position stated in the 2006 Commentary, the last sentence of Section 1019.2 stipulates that single exit basement applications are limited to the first story below grade plane. To be consistent with the allowance for single exit basements, the column heading in Table 1019.2 has been changed to acknowledge that the story could be above or below grade plane (basement).

In summary, this proposal provides needed amplification of single exit provisions from various stories within a building. It provides necessary guidance for designers and code enforcement officials alike and will lend to more uniform and appropriate interpretations of this important concept.

Cost Impact: The code proposal will not increase the cost of construction.

Committee Action: **Approved as Submitted**

Committee Reason: The proposal adds consistency and clarifies the provisions for single exit buildings as provided in the 2007 Supplement.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Lori Lee Graham, Portland, OR, representing herself, requests Approval as Modified by this public comment.

Modify proposal as follows:

1019.2 (IFC [B] 1019.2) (Supp) Single exits. Only one exit shall be required from Group R-3 occupancy buildings or from stories of other buildings as indicated in Table 1019. Occupancies shall be permitted to have a single exit in buildings otherwise required to have more than one exit if the areas served by the single exit do not exceed the limitations of Table 1019.2. ~~Mixed occupancies shall be permitted to be served by single exits provided each individual occupancy complies with the applicable requirements of Table 1019.2 for that occupancy. Where applicable, cumulative occupant loads from adjacent occupancies shall be considered in accordance with the provisions of Section 1004.1.~~ Basements with a single exit shall not be located more than one story below grade plane.

Mixed occupancies shall be permitted to be served by single exits provided each individual occupancy complies with the applicable requirements of Table 1019.2 for that occupancy. Where applicable, cumulative occupant loads from adjacent occupancies shall be considered in accordance with the provisions of Section 1004.1. In each story of a mixed occupancy building, the maximum number of occupants served by a single exit shall be such that the sum of the ratios of the calculated number of occupants of the space divided by the allowable number of occupants for each occupancy shall not exceed one.

(Portions of proposal not shown remain unchanged.)

Commenter's Reason: As approved by the committee, the provision would allow a single exit from a mixed occupancy story with as much as twice the occupant load allowed for a single occupancy story. For example, if on the second story of a building I have two tenant spaces, one is a B and one is an M; the B has 28 occupants and the M has 28 occupants. Both tenant spaces have a single door to a single exit stairway. Each of these occupancies complies with the limits of Table 1019.2, but cumulatively there is now 56 people using a single exit. The only way to prevent this substantial expansion of the number of occupants relying on a single exit, is to use a 'unity' formula that allows a calculation to see if the number of occupants is reasonable. This proposal moves the sentences regarding mixed occupancy out of the first paragraph and places them in their own paragraph. The new third sentence is added establishing a unity formula for mixed occupancies sharing the same single exit. This is based on the provision in Section 508.3.3.2 used to determine the allowable area of a separated mixed occupancy building. Finally, this will work in conjunction with the concept of a single story multiple tenant building where each tenant space has its own exterior exit. If someone chooses have 2 tenant spaces of different occupancies share the same exit, then this added sentence would apply. But it that is two restrictive, they can always put in individual exits from each space.

Final Action: AS AM AMPC____ D

E132-07/08

706.7.1, 1020.1.2, 1020.1.3, 1021.5 (IFC [B] 1020.1.2, [B] 1020.1.3, [B] 1021.5)

Proposed Change as Submitted:

Proponent: Philip Brazil, PE, Reid Middleton, Inc., representing himself

Revise as follows:

706.7.1 Prohibited penetrations. Penetrations ~~into~~ of fire barriers or horizontal assemblies, or both, enclosing an exit enclosure or an exit passageway ~~shall be allowed only when~~ are prohibited except where permitted by Section 1020.1.2 ~~or~~ and 1021.5, respectively.

1020.1.2 (IFC [B] 1020.1.2) Penetrations. Penetrations ~~into~~ of and openings ~~through~~ in fire barriers or horizontal assemblies, or both, enclosing an exit enclosure are prohibited except for those serving the interior of the exit enclosure, including required exit doors, equipment and ductwork necessary for ~~independent~~ mechanical ventilation of smokeproof enclosures or stairway pressurization, automatic sprinkler systems ~~piping~~, ~~standpipes~~ standpipe systems, ~~electrical raceway for~~ fire department ~~communication~~ communications systems and electrical ~~raceway~~ raceways ~~serving the exit enclosure and~~ terminating at ~~a steel~~ electrical ~~box~~ boxes ~~not exceeding 16 square inches (0.010m2).~~ complying with Section 712.3.2. ~~Such~~ The penetrations shall be protected in accordance with Section 712. There shall be no penetrations or ~~communication~~ openings, whether protected or not, between adjacent exit enclosures.

Exceptions:

1. Membrane penetrations protected by an approved penetration firestop system installed as tested in accordance with ASTM E 814 or UL 1479, with a minimum positive pressure differential of 0.01 inch (2.49 Pa) of water, and with an F-rating and a T-rating of not less than the required fire-resistance rating of the assembly penetrated shall be permitted.
2. Membrane penetrations installed as tested in an approved fire-resistance-rated assembly shall be permitted.

1020.1.3 (IFC [B] 1020.1.3) Ventilation. Equipment and ductwork for ~~exit enclosure~~ mechanical ventilation ~~of~~ smokeproof enclosures and stairway pressurization as permitted by Section 1020.1.2 shall comply with one of the following ~~items~~:

1. Such equipment and ductwork shall be located exterior to the building and shall be directly connected to the exit enclosure by ductwork enclosed in construction as required for shafts.
2. Where such equipment and ductwork is located within the exit enclosure, the intake air shall be taken directly from the outdoors and the exhaust air shall be discharged directly to the outdoors, or such air shall be conveyed through ducts enclosed in construction as required for shafts.
3. Where located within the building, such equipment and ductwork shall be separated from the remainder of the building, including other mechanical equipment, with construction as required for shafts.

In each case, openings ~~into~~ in the fire-resistance-rated construction shall be limited to those needed for maintenance and operation and shall be protected by opening protectives in accordance with Section 715 for shaft enclosures.

~~Exit enclosure ventilation systems~~ Systems for mechanical ventilation of smokeproof enclosures and stairway pressurization shall be independent of other building ventilation systems.

1021.5 (IFC [B] 1021.5) Penetrations. Penetrations ~~into~~ of and openings ~~through~~ in fire barriers or horizontal assemblies, or both, enclosing an exit passageway are prohibited except for those serving the interior of the exit passageway, including required exit doors, equipment and ductwork necessary for ~~independent~~ mechanical ventilation of smokeproof enclosures or stairway pressurization, automatic sprinkler ~~piping~~ systems, ~~standpipes~~ standpipe systems, ~~electrical raceway for~~ fire department ~~communication~~ communications systems and electrical ~~raceway~~ raceways ~~serving the exit passageway and~~ terminating at ~~a steel electrical~~ ~~box~~ electrical boxes ~~not exceeding 16 square inches (0.010m2)~~ complying with Section 712.3.2. ~~Such~~ The penetrations shall be protected in accordance with Section 712. There shall be no penetrations or ~~communicating~~ openings, whether protected or not, between adjacent exit passageways.

Exceptions:

1. Membrane penetrations protected by an approved penetration firestop system installed as tested in accordance with ASTM E 814 or UL 1479, with a minimum positive pressure differential of 0.01 inch (2.49 Pa) of water, and with an F-rating and a T-rating of not less than the required fire-resistance rating of the assembly penetrated shall be permitted.
2. Membrane penetrations installed as tested in an approved fire-resistance-rated assembly shall be permitted.

Reason: The purpose for this proposal is to improve the technical requirements limiting penetrations of and openings in the fire containment assemblies (fire barriers and horizontal assemblies) enclosing exit enclosures and exit passageways. Exceptions are also proposed permitting penetrations of the enclosure assemblies by components or devices not specifically intended to serve the exit passageway or exit passageway, provided they are protected in a manner equivalent to the fire-resistance rating of the assembly being penetrated.

The provisions of Section 712 for penetration firestop systems are written for typical fire containment assemblies, not critical ones like exit enclosures and exit passageways. In typical fire containment assemblies such as fire barriers, penetrations are required to be protected by listed and F-rated penetration firestop systems. T ratings are not required because an occupant can move away from a typical fire barrier. That is not the case with fire barriers protecting critical assemblies like an exit enclosure or an exit passageway where a T rating is needed to prevent excessive levels of heat transmission from compromising the exit stairway or exit passageway. Escaping occupants are not able to move away from the excessive heat transmission like they can from a typical fire containment assembly.

A membrane penetration on the outside of a fire barrier wall protecting an exit enclosure or exit passageway should continue to be prohibited unless it is protected in a manner that is equivalent to the fire-resistance rating of the enclosing fire barrier and there are numerous options available to designers and code officials. The typical solution for protecting the penetration is with a listed penetration firestop system that has an F rating and a T rating at least equal to the fire-resistance-rating. Or, a method of protection listed as complying with a test standard for fire resistance (i.e., ASTM E 119, UL 263 or NFPA 251) can be utilized.

There are numerous products currently qualified to meet the conditions of the proposed exceptions. Referring to the category codes at the listings of the Underwriters Laboratories, for example, there are wall opening protective materials (CLIV, putty pads), outlet boxes and fittings classified for fire resistance (CEYY, wall and floor boxes), luminaires and luminaire assemblies classified for fire resistance (CDHW, wall and ceiling luminaires), and others.

"Penetrations into and openings through" is changed to "penetrations of and openings in" for consistency with the charging statements for openings and penetrations in the provisions of Chapter 7 for fire containment assemblies (e.g. fire barriers, fire partitions, smoke partitions, etc.). "Those serving the interior of the exit enclosure (or exit passageway)" is added to establish what limits are being placed on permitted penetrations and openings rather than relying on what is now a list that will inevitably leave out a component or device critical the function of the exit stairway. The list of permitted penetrations and openings are changed for consistency with their technical provisions elsewhere in the IBC. Compliance with Section 712.3.2 for electrical boxes will permit steel electrical boxes of listed electrical boxes provided they comply with the limitations of Exceptions #1 and #2, respectively. Limiting the permitted penetrations and openings to sprinkler piping and standpipes does not account for components of automatic sprinkle systems and standpipes other than their piping

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

Committee Action: **Disapproved**

Committee Reason: The proposal would require both an F and T rating for a membrane penetration. There are no T ratings for wall membrane penetrations for pipes. It appears that the requirements for T-ratings in Section 1020.1.2, Exp. 1 and Section 1021.5, Exp. 1 may eliminate metallic items from passing through the enclosure protection. In Section 1020.1.2, the relocating of the language 'those serving the interior of the exit enclosure, including' puts this requirement in the scoping provisions of the section, thus the sprinkler system and standpipe could not penetrate the enclosure unless it serves only the stairway enclosure. This would be a huge issue in highrise buildings where the stand pipes are in the exit enclosures. This would also be a problem for fire department communications in the stairway.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Philip Brazil, PE, Reid Middleton, Inc., representing himself and in collaboration with Gregory Nicholls, requests Approval as Modified by this public comment.

Gregory Nicholls, AIA, City of Mason, OH, representing himself and in collaboration with Philip Brazil), requests Approval as Modified by this public comment.

Modify proposal as follows:

706.7.1 Prohibited penetrations. Penetrations of fire barriers or horizontal assemblies, or both, enclosing an exit enclosure or an exit passageway are prohibited except where permitted by Section~~s~~ 1020.1.2 ~~and~~ or 1021.5, respectively.

1020.1.2 Penetrations. Penetrations of and openings in fire barriers or horizontal assemblies, or both, enclosing an exit enclosure are prohibited except for ~~those serving the interior of the exit enclosure, including~~ required exit doors, equipment and duct work necessary for mechanical ventilation of smokeproof enclosures or stairway pressurization, automatic sprinkler systems, standpipe~~s~~ systems, fire department communications systems and electrical raceways serving the exit enclosure and terminating at electrical boxes complying with Section 712.3.2. The penetrations shall be protected in accordance with Section 712. There shall be no penetrations or openings, whether protected or not, between adjacent exit enclosures.

Exceptions:

1. Membrane penetrations protected by an approved penetration firestop system installed as tested in accordance with ASTM E 814 or UL 1479, with a minimum positive pressure differential of 0.01 inch (2.49 Pa) of water, and with an F-rating and a T-rating of not less than the required fire-resistance rating of the assembly penetrated shall be permitted.
2. Membrane penetrations installed as tested in an approved fire-resistance-rated assembly shall be permitted.

1021.5 Penetrations. Penetrations of and openings in fire barriers or horizontal assemblies, or both, enclosing an exit passageway are prohibited except for ~~those serving the interior of the exit passageway, including~~ required exit doors, equipment and duct work necessary for mechanical ventilation of smokeproof enclosures or stairway pressurization, automatic sprinkler systems, standpipe~~s~~ systems, fire department communications systems and electrical raceways serving the exit passageway and terminating at electrical boxes complying with Section 712.3.2. The penetrations shall be protected in accordance with Section 712. There shall be no penetrations or openings, whether protected or not, between adjacent exit passageways.

Exceptions:

1. Membrane penetrations protected by an approved penetration firestop system installed as tested in accordance with ASTM E 814 or UL 1479, with a minimum positive pressure differential of 0.01 inch (2.49 Pa) of water, and with an F-rating and a T-rating of not less than the required fire-resistance rating of the assembly penetrated shall be permitted.
2. Membrane penetrations installed as tested in an approved fire-resistance-rated assembly shall be permitted.

(Portions of proposal not shown remain unchanged)

Commenter's Reason: The Committee's primary reason for disapproval in the Report of the Public Hearings was that relocating the text "serving the exit enclosure (exit passageway)" in Section 1020.1.2 (1021.5) from being limited to electrical raceways to being the scoping text for the entire section changes the intent from exempting the listed assemblies and systems in all cases to exempting them only where they serve the interior of the exit enclosure (exit passageway). We agree with this comment by the Committee. It was not the intent of the proponent to propose such a change. The public comment restores the current text (and intent) so that penetrations and openings are prohibited except by the assemblies and systems specifically listed in the text, which are necessary for egress or fire protection and typically located within an exit enclosure or exit passageway (e.g., exit door assemblies, automatic sprinkler systems, standpipe systems, etc.).

Final Action: AS AM AMPC____ D

E135-07/08

1021.3 (New), 1021.3.1(New) [IFC [B] 1021.3 (New), [B] 1021.3.1 (New)]

Proposed Change as Submitted:

Proponent: Gary Lewis, Chair, representing ICC Ad Hoc Committee on Terrorism Resistant Buildings

Add new text as follows:

1021.3 (IFC [B] 1021.3) Length. In buildings with an occupied floor located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access, exit passageways used to connect vertical exit enclosures on floors, other than the level of exit discharge, shall be not exceed 50 feet (15 240 mm) in length.

1021.3.1 (IFC [B] 1021.3.1) Signage. Exit passageways, that change direction at other than the level of exit discharge, shall be provided with exit and directional signage in accordance with Section 1011.

(Renumber subsequent sections)

Reason The purpose of this proposal is to reduce occupant confusion created by the use of horizontal transfer corridors between vertical exit enclosures.

The National Institute of Standards and Technology (NIST) World Trade Center (WTC) Report pointed out that horizontal transfers from one shaft to another caused occupant confusion and thereby slowed egress time. The WTC Report also recommended that Codes be revised to address the need for full building evacuation in the shortest possible time.

This proposal adds new Section 1021.3 to require that exit passageways, used as horizontal transfer corridors between vertical exit enclosures, be limited in length and be provided with appropriate signage. The 50 feet limit is consistent with the code's limit on dead end corridors. The code currently requires horizontal transfer in exit enclosures to comply with Section 1021; this proposal merely places a restriction on the transfer length and also requires directional signage within the exit passageway. This will reduce occupant confusion and

will promote prompt evacuations. Some would argue that, although it is confusing to be required to leave a stair tower to traverse a corridor that connects to another stair tower, occupants can be trained to accept these counterintuitive horizontal transfers. However, given the impracticality of full drills in high rise buildings, this training is likely to be paper or lecture-based. At any given time, the building will have occupants who have not been trained. The proponents believe it is better to provide clear direction and limitations on the length of the transfer corridors than trying to train building occupants to follow an illogical and unclear route in a highly stressed situation. Some will argue that this provision will put constraints on design. Of course it will. All safety requirements put constraints on design. It may take a little extra effort on the part of designers, but good buildings can incorporate this type of feature if designers put safety first.

Bibliography: National Institute of Standards and Technology. Final Report of the National Construction Safety Team on the Collapses of the World Trade Center Towers. United States Government Printing Office: Washington, D.C. September 2005

Cost Impact: This proposal will not increase the cost of construction. It can be met through careful design alone.

Committee Action: Disapproved

Committee Reason: The length of the transfer corridor is not the reason this configuration is unsafe. The requirement would result in a series of short transfer corridors rather than one longer transfer corridor – which would be worse. The proponent testified that the 50 feet length is based on dead end corridors lengths. This proposal is for all uses, and the 50 feet dead end is Group B only. The length of travel for a dead end is down and back, plus the dead ends are totally different functions. Therefore, justification to match the dead end provisions is not valid. E78-07/08 addresses signage in transfer corridors.

Assembly Action: None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Gary Lewis, Chair, representing ICC Ad Hoc Committee on Terrorism Resistant Buildings, requests Approval as Modified by this public comment.

Modify proposal as follows:

1021.3 (IFC [B] 1021.3) Length. In buildings with an occupied floor located more than 75 feet (22,860 mm) above the lowest level of fire department vehicle access, exit passageways used to connect vertical enclosures on floors located more than 75 feet (22,860 mm) above the lowest level of fire department vehicle access ~~, other than the level of exit discharge,~~ shall not exceed 50 feet (15,240 mm) in length.

1021.3.1 (IFC [B] 1021.3.1) Signage. Exit passageways that change direction at other than the level of exit discharge shall be provided with exit and directional signage in accordance with Section 1011.

Commenter's Reason: The purpose of this public comment is to request approval as modified by this public comment. The reason for requesting approval rests in our objective as the Terrorism Resistant Buildings Committee to provide safe egress from buildings. This public comment serves to reduce occupant confusion due to lengthy passageways connecting stairwells in buildings on floors located greater than 75' above exit to the outside.

The Means of Egress Committee split their judgment on the TRB original. After speaking with opponents and other interested parties, the Committee has slightly modified our proposal to eliminate the stated concerns and apply the restriction solely to the upper floors (above the 6th floor) of the building.

The National Institute of Standards and Technology (NIST) World Trade Center (WTC) Report pointed out that horizontal transfers from one shaft to another caused occupant confusion and thereby slowed egress time. The WTC Report also recommended that codes be revised to address the need for full building evacuation in the shortest possible time.

Studies have shown that both occupant and building characteristics (in addition to fire characteristics) are important parts of safe egress. First, behavioral scientists have found that occupant characteristics including age, gender, alertness, mobility and training are some of the factors that affect evacuation in a fire emergency. Additionally, occupant's situation in an emergency is important: are they traveling alone or in a group, a visitor. No less important are the building's characteristics, design, organization and fire safety system have an influence in evacuation outcome.1

Building egress systems can often be complex and non-intuitive to users. Research has shown the benefit of appropriate signage for wayfinding.[2] This is especially true in complex commercial buildings, including high rise, where stairways may not be continuous and require a corridor path to the next safe stairwell.

Copies of the emergency plan are given to tenants before occupancy in a space. However, how much education is really given to the everyday employee that walks into a high rise building? How much adventuring do people do, or are allowed to do? Usually, it's into the elevator, then up to the office, or down to the lobby, parking structure or other space, and out. Until we educate building occupants on safe egress through the stairwells on a routine basis, occupants will not find their way out safely. People change jobs, businesses move from one building to another, lessening the familiarity of egress routes by occupants. And, visitors rarely plan escape routes in these high rise buildings other than the elevator they rode to their destination.

Additionally, it has been said that the study of human behavior in fire is fairly new compared to other areas of fire research. Once smoke is smelled or upon hearing the fire alarm, occupants do not panic, but act fairly rational in fire events. However, they do not react and may deny or ignore the situation.[3] This delay in response due to many factors; too many prank or false alarms, no signal to leave by person of authority, finishing an important phone call, saving data on computers, filing confidential information, and gathering belongings, etc., can cause an overfilling of egress systems. Overuse with too many complex moves, can slow egress time considerably.

Key factors for occupants evacuation and movement include: Familiarity and experience with the building; smoke…occupants are most likely to exit via the way they entered; Occupants are most likely to be unprepared to try a new unknown route, etc. "Movement calculations are usually over-optimistic compared to actual movement speed during fires since a number of dimensions interplay to reduce speed of movement to leave a building. Although adequate fire systems are often installed in buildings, failure of these systems to work 'as planned' is regularly observed when an actual fire occurs.[3]

Decision making during an emergency is different from day-to-day decision making. There's more at stake, less time, and less good

information to make decisions. (Proulx, 1993) After the WTC Towers Collapse, late in 2001, it was found that occupants evacuated quickly after a cue of some kind, alarm, rumor, exterior building event, etc.[4] Perceptions of emergencies requiring evacuation rose. Some of that heightened awareness still exists even today.

It has been written that the events of September 11th, 2001 have effected people's belief about safety in structures. Rather than delaying egress and cueing, they may grab things and move quickly, stressing the egress structure resulting in slower movement, injuries associated with uncontrolled egress and confusion in transfer corridors. Plus, most people think stairwells take them safely outside. Lack of familiarity with the concept of transfer from one area to another for the same stairwell may lead to more confusion, causing some to turn around and go back up.

Now that 7 years have gone by since 9/11, we could have a combination of problems...with some remaining in place gathering friends, and others before leaving, and others, exiting faster than designed, stressing egress capacities. Regardless, corridor lengths need to be shorter on upper floors to accommodate occupant variations in egress, and limit confusion of occupants as they egress.

1. Guylene Proulx, Ph.D.,Canadian Consulting Engineer, March 1997., pp36.
2. P. Arthur, and R. Passini, Wayfinding - People, Signs and Architecture - McGraw Hill, Inc., New York, NY, 1992l
3. Guylene Proulx, Ph.D., Occupant Behavior and Evacuation, May 25, 2001.
4. Guylene Proulx, Ph.D., Understanding Human Behavior in Stressful Situations, April 15, 2002

Final Action: AS AM AMPC____ D

E136-07/08

1022.1, 1022.4, (IFC [B] 1022.1, [B] 1022.4)

Proposed Change as Submitted:

Proponent: Gregory R. Keith, Professional heuristic Development, representing The Boeing Company

Revise as follows:

1022.1 (IFC [B] 1022.1) Horizontal exits. Horizontal exits serving as an exit in a means of egress system shall comply with the requirements of this section. A horizontal exit shall not serve as the only exit from a portion of a building, and where two or more exits are required, not more than one-half of the total number of exits or total exit width shall be horizontal exits.

Exceptions:

1. Horizontal exits are permitted to comprise two-thirds of the required exits from any building or floor area for occupancies in Group I-2.
2. Horizontal exits are permitted to comprise 100 percent of the exits required for occupancies in Group I-3. At least 6 square feet (0.6 m^2) of accessible space per occupant shall be provided on each side of the horizontal exit for the total number of people in adjoining compartments.

~~Every fire compartment for which credit is allowed in connection with a horizontal exit shall not be required to have a stairway or door leading directly outside, provided the adjoining fire compartments have stairways or doors leading directly outside and are so arranged that egress shall not require the occupants to return through the compartment from which egress originates.~~

~~The area into which a horizontal exit leads shall be provided with exits adequate to meet the occupant requirements of this chapter, but not including the added occupant capacity imposed by persons entering it through horizontal exits from other areas. At least one of its exits shall lead directly to the exterior or to an exit enclosure.~~

1022.4 (IFC [B] 1022.4) Capacity of refuge area. The refuge area of a horizontal exit shall be a space occupied by the same tenant or a public area and each such refuge area shall be adequate to accommodate the original occupant load of the refuge area plus the occupant load anticipated from the adjoining compartment. The anticipated occupant load from the adjoining compartment shall be based on the capacity of the horizontal exit doors entering the refuge area. The capacity of the refuge area shall be computed based on a net floor area allowance of 3 square feet (0.2787 m^2) for each occupant to be accommodated therein.

Exception: The net floor area allowable per occupant shall be as follows for the indicated occupancies:

1. Six square feet (0.6 m^2) per occupant for occupancies in Group I-3.
2. Fifteen square feet (1.4 m^2) per occupant for ambulatory occupancies in Group I-2.
3. Thirty square feet (2.8 m^2) per occupant for nonambulatory occupancies in Group I-2.

The refuge area into which a horizontal exit leads shall be provided with exits adequate to meet the occupant requirements of this chapter, but not including the added occupant load imposed by persons entering it through horizontal exits from other areas. At least one refuge area exit shall lead directly to the exterior or to an exit enclosure.

> **Exception**: The adjoining compartment shall not be required to have a stairway or door leading directly outside, provided the refuge area into which a horizontal exit leads has stairways or doors leading directly outside and are so arranged that egress shall not require the occupants to return through the compartment from which egress originates.

Reason: This proposal intends to clarify horizontal exit provisions. First, the third paragraph of Section 1022.1 has been relocated to Section 1022.4. That provision deals with the design of the means of egress from the refuge area and is more appropriately located in the latter section. Secondly, the second paragraph of Section 1022.1 currently contains some confusing language referencing a fire compartment credit concept that is not recognized anywhere in Chapter 10. The paragraph has been rewritten in more contemporary language while maintaining the original technical intent. Additionally, based on IBC errata, the provision in question was originally intended to be an exception. Accordingly, it has been retained as an exception; however, it also been placed in context following the proposed second paragraph of Section 1022.4. Approval of this proposal will clarify the intent of the code and assist users in the proper determination of horizontal exit technical requirements.

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

Analysis: An errata has been issued for Section 1022.1, Exception 2. In the 2000 IBC this section had two paragraphs under the exception. The 2003 IBC and 2006 IBC show the second paragraph of Exception 2 moved out as a main section paragraph. There was no code change proposal to relocate this paragraph, therefore, and errata has been issued for the 2003 and 2006 IBC to locate the paragraph starting "Every fire compartment…." as part of Exception 2.

Committee Action: **Approved as Submitted**

Committee Reason: The proposal places the language in a better location to improve understanding of what is permitted for horizontal exits.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Jason Thompson, PE, National Concrete Masonry Association (NCMA), representing Masonry Alliance for Codes and Standards (MACS), requests Approval as Modified by this public comment.

Modify proposal as follows:

1022.1 (IFC [B] 1002.1) Horizontal exits. Horizontal exits serving as an exit in a means of egress system shall comply with the requirements of this section. A horizontal exit shall not serve as the only exit from a portion of a building, and where two or more exits are required, not more than one-half of the total number of exits or total exit width shall be horizontal exits.

Exceptions:

1. Horizontal exits are permitted to comprise two-thirds of the required exits from any building or floor area for occupancies in Group I-2.
2. Horizontal exits are permitted to comprise 100 percent of the exits required for occupancies in Group I-3. At least 6 square feet (0.6 m^2) of accessible space per occupant shall be provided on each side of the horizontal exit for the total number of people occupying both sides of the horizontal exit ~~in adjoining compartments~~.

1022.4 (IFC [B] 1022.4) Capacity of refuge areas. The refuge area of a horizontal exit shall be a space occupied by the same tenant or a public area and each such refuge area shall be adequate to accommodate the original occupant load of the refuge area plus the occupant load anticipated from the area served by the horizontal exit ~~adjoining compartment~~. The anticipated occupant load from the area served by the horizontal exit ~~adjoining compartment~~ shall be based on the capacity of the horizontal exit doors entering the refuge area. The capacity of the refuge area shall be computed based on a net floor area allowance of 3 square feet (0.2787 m^2) for each occupant to be accommodated therein.

Exceptions: The net floor area allowable per occupant shall be as follows for the indicated occupancies:

1. Six square feet (0.6 m^2) per occupant for occupancies in Group I-3.
2. Fifteen square feet (1.4 m^2) per occupant for ambulatory occupancies in Group I-2.
3. Thirty square feet (2.8 m^2) per occupant for nonambulatory occupancies in Group I-2.

The refuge area ~~into which~~ of a horizontal exit ~~leads~~ shall be provided with access to other exits adequate to meet the occupant requirements of this chapter, but not including the added occupant load imposed by persons entering it through horizontal exits from other areas. At least one ~~refuge area~~ of the other exits shall lead directly to the exterior or to an exit enclosure.

Exception: The ~~adjoining compartment~~ area served by a horizontal exit shall not be required to have a stairway or door leading directly

outside, provided the ~~refuge~~ area ~~into which a~~ on the other side of the horizontal exit ~~leads has~~ contains stairways or doors leading directly outside and are so arranged that egress shall not require the occupants to pass through another horizontal exit or return through the ~~compartment~~ area on the side of the horizontal exit from which egress originates.

Commenter's Reason: We believe this Public Comment that amends the original Code Change Proposal E136-07/08 which was approved as submitted by the Committee will further clarify the language in these sections which allow areas served by horizontal exits to not have a stairway or door leading directly outside under specified conditions. We note that the original concern for modifying these sections was due to confusing language referencing fire compartments which is an undefined term. However, the term "compartment" proposed by the proponent of E136-07/08 is not defined either and may cause confusion as well. We simply substituted the term "the area served by the horizontal exit" which is consistent with the definition for horizontal exit found in Section 1002.1.

The reference to the refuge area in the Exception to the second paragraph of Section 1022.4 is also not appropriate since the refuge area is only a component of the area on the opposite side of the horizontal exit, not the entire area. It is only required to provide adequate space to hold the building occupants exiting through the horizontal exit into the refuge area until they can eventually find other exits out of the building. So the revised language originally proposed in this code change would require that the stairways or doors leading directly to the outside must be immediately accessible to the refuge area rather than to the entire area served by the horizontal exit.

We believe that the additional modifications we have proposed will correct those potential interpretation problems and further clarify the application of these sections for how horizontal exits are to be used as an element of an overall means of egress system.

Final Action: AS AM AMPC____ D

E138-07/08
1024.1 (IFC [B] 1024.1)

Proposed Change as Submitted:

Proponent: Lee J. Kranz, City of Bellevue, WA, representing The Washington Association of Building Officials (WABO), Technical Code Development Committee

Revise as follows:

1024.1 (IFC [B] 1024.1) (Supp) General. Exits shall discharge directly to the exterior of the building. The exit discharge shall be at grade or shall provide direct access to grade. The exit discharge shall not reenter a building. Exceptions 1 and 2 below shall not be used concurrently within a building.

Exceptions:

1. A maximum of 50 percent of the number and capacity of the exit enclosures is permitted to egress through areas on the level of discharge provided all of the following are met:
   - 1.1. Such exit enclosures egress to a free and unobstructed way to the exterior of the building, which way is readily visible and identifiable from the point of termination of the exit enclosure.
   - 1.2. The entire area of the level of discharge is separated from areas below by construction conforming to the fire-resistance rating for the exit enclosure.
   - 1.3. The egress path from the exit enclosure on the level of discharge is protected throughout by an approved automatic sprinkler system. All portions of the level of discharge with access to the egress path shall either be protected throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, or separated from the egress path in accordance with the requirements for the enclosure of exits.
2. A maximum of 50 percent of the number and capacity of the exit enclosures is permitted to egress through a vestibule provided all of the following are met:
   - 2.1. The entire area of the vestibule is separated from areas below by construction conforming to the fire resistance rating for the exit enclosure.
   - 2.2. The depth from the exterior of the building is not greater than 10 feet (3048 mm) and the length is not greater than 30 feet (9144 mm).
   - 2.3. The area is separated from the remainder of the level of exit discharge by construction providing protection at least the equivalent of approved wired glass in steel frames.
   - 2.4. The area is used only for means of egress and exits directly to the outside.
3. Stairways in open parking garages complying with Section 1020.1, Exception 5, are permitted to egress through the open parking garage at the level of exit discharge.
4. Horizontal exits complying with Section 1022 shall not be required to discharge directly to the exterior of the building.

Reason: This code change clarifies for designers and code officials that only one of the two exceptions related to reentering a building from an exit enclosure may be used in a single building. As currently written, it appears that both exceptions could be used in the same building.

The IBC Commentary book indicates “or” but there is no code basis to support that assumption.

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

Committee Action: **Disapproved**

Committee Reason: In a four exit building the proposed language would prohibit the option of one lobby, one vestibule and two exits to the exterior. The committee agreed that using the exceptions to exempt 100% of the exits of a building from going to the exterior was not the intent and requested the proponent to return with revised language.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because public comments were submitted.

Public Comment 1:

Lee J. Kranz, City of Bellevue, WA, representing Washington Association of Building Officials Technical Code Development Committee, requests Approval as Modified by this public comment.

Modify proposal as follows:

1024.1 (IFC [B] 1024.1) (Supp) General. Exits shall discharge directly to the exterior of the building. The exit discharge shall be at grade or shall provide direct access to grade. The exit discharge shall not reenter a building. The combined use of Exceptions 1 and 2 below shall not ~~be used concurrently within a building~~ exceed 50% of the number and capacity of the required exits.

Exceptions:

1. A maximum of 50 percent of the number and capacity of the exit enclosures is permitted to egress through areas on the level of discharge provided all of the following are met:
   1.1. Such exit enclosures egress to a free and unobstructed way to the exterior of the building, which way is readily visible and identifiable from the point of termination of the exit enclosure.
   1.2. The entire area of the level of discharge is separated from areas below by construction conforming to the fire-resistance rating for the exit enclosure.
   1.3. The egress path from the exit enclosure on the level of discharge is protected throughout by an approved automatic sprinkler system. All portions of the level of discharge with access to the egress path shall either be protected throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, or separated from the egress path in accordance with the requirements for the enclosure of exits.
2. A maximum of 50 percent of the number and capacity of the exit enclosures is permitted to egress through a vestibule provided all of the following are met:
   2.1. The entire area of the vestibule is separated from areas below by construction conforming to the fire resistance rating for the exit enclosure.
   2.2. The depth from the exterior of the building is not greater than 10 feet (3048 mm) and the length is not greater than 30 feet (9144 mm).
   2.3. The area is separated from the remainder of the level of exit discharge by construction providing protection at least the equivalent of approved wired glass in steel frames.
   2.4. The area is used only for means of egress and exits directly to the outside.
3. Stairways in open parking garages complying with Section 1020.1, Exception 5, are permitted to egress through the open parking garage at the level of exit discharge.
4. Horizontal exits complying with Section 1022 shall not be required to discharge directly to the exterior of the building.

Commenter's Reason: As advised by the Egress Committee in Palm Springs, the language has been modified to make it clear that not more than 50% of the required exit enclosures may utilize exceptions #1 & #2 concurrently. This is necessary as there will be cases where more than 2 exit enclosures are required and the revised language resolves the issue.

Public Comment 2:

Steve Thomas, Colorado Code Consulting LLC, representing Colorado Chapter of ICC, requests Approval as Modified by this public comment.

Modify proposal as follows:

1024.1 (IFC [B] 1024.1) (Supp) General. Exits shall discharge directly to the exterior of the building. The exit discharge shall be at grade or shall provide direct access to grade. The exit discharge shall not reenter a building.
~~Exceptions 1 and 2 below shall not be used concurrently within a building.~~

Exceptions:

1. A maximum of 50 percent of the number and capacity of the exit enclosures in a building is permitted to egress through areas ~~on the level of discharge~~ or vestibules on the level of exit discharge in accordance with Section 1024.1.1 or 1024.1.2. ~~provided all of the following are met:~~
   ~~1.1. Such exit enclosure egress to a free and unobstructed way to the exterior of the building, which way is readily visible and identifiable from the point of termination of the exit enclosure.~~

~~1.2. The entire area of the level of discharge is separated from areas below by construction conforming to the fire-resistance rating for the exit enclosure.~~

~~1.3. The egress path from the exit enclosure on the level of discharge is protected throughout by an approved automatic sprinkler system. All portions of the level of discharge with access to the egress path shall either be protected throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, or separated from the egress path in accordance with the requirements for the enclosure of exits.~~

~~2. A maximum of 50 percent of the number and capacity of the exit enclosures is permitted to egress through a vestibule provided all of the following are met:~~

~~2.1. The entire area of the vestibule is separated from areas below by construction conforming to the fire resistance rating for the exit enclosure.~~

~~2.2. The depth from the exterior of the building is not greater than 10 feet (3048 mm) and the length is not greater than 30 feet (9144 mm).~~

~~2.3. The area is separated from the remainder of the level of exit discharge by construction providing protection at least the equivalent of approved wired glass in steel frames.~~

~~2.4. The area is used only for means of egress and exits directly to the outside.~~

2. ~~3.~~ Stairways in open parking garages complying with Section 1020.1, Exception 5, are permitted to egress through the open parking garage at the level of exit discharge.
3. ~~4.~~ Horizontal exits complying with Section 1022 shall not be required to discharge directly to the exterior of the building.

1024.1.1. Egress through areas on level of exit discharge. When permitted by exception 1 above, the exit shall be permitted to discharge through areas on the level of exit discharge provided all the following are met:

1. The exit enclosure(s) egress to a free and unobstructed way to the exterior of the building, which way is readily visible and identifiable from the point of termination of the exit enclosure; and
2. The entire area of the level of discharge is separated from areas below by construction conforming to the fire-resistance rating for the exit enclosure; and
3. The egress path from the exit enclosure on the level of discharge is protected throughout by an approved automatic sprinkler system. All portions of the level of discharge with access to the egress path shall either be protected throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, or separated from the egress path in accordance with the requirements for the enclosure of exits.

1024.1.2. Egress through vestibule. When permitted by exception 1 above, the exit shall be permitted to discharge through a vestibule provided all of the following are met:

1. The entire area of the vestibule is separated from areas below by construction conforming to the fire resistance rating for the exit enclosure; and
2. The depth from the exterior of the building is not greater than 10 feet (3048 mm) and the length is not greater than 30 feet (9144 mm); and
3. The area is separated from the remainder of the level of exit discharge by construction providing protection at least the equivalent of approved wired glass in steel frames; and
4. The area is used only for means of egress and exits directly to the outside.

Commenter's Reason: The committee felt that the proponent's change had merit, however the language created potential problems for buildings that had more than three exits. The new proposed language changes the exception editorially to clarify that the designer can't use the exit enclosure option for 50% of the exits and then the vestibule option for the other 50% of the exits, essentially allowing 100% of the exits to discharge through the building and not directly to the exterior. This proposal deletes the charging language in exception 2 and combines the two together in Exception 1. Exception 1 then refers to two new sections which are similar to the two previous exceptions that were confusing. The charging language of exception 1 still only permits 50% of the total exits to use these options. This will provide clearer language to the user that only 50% of the exit enclosures can exit through an area or vestibule on the level of exit discharge. It will also allow the use of both options in a building that has been provided with more than three exit enclosures. For example in a building provided with four exit enclosures, the design could include one exit enclosure egressing through a lobby on the level of exit discharge, and another enclosure exiting through a vestibule on the level of exit discharge. However, only two of the four enclosures can use either of these options.

Final Action: AS AM AMPC____ D

E140-07/08
1024.1, (IFC [B] 1024.1)

Proposed Change as Submitted:

Proponent: Jay Wallace, The Boeing Company

Revise as follows:

1024.1 (IFC [B] 1024.1) (Supp) General. Exits shall discharge directly to the exterior of the building. The exit discharge shall be at grade or shall provide direct access to grade. The exit discharge shall not reenter a building.

Exceptions:

1. A maximum of 50 percent of the number and capacity of the exit enclosures is permitted to egress through areas on the level of discharge provided all of the following are met:
   1.1. Such exit enclosures egress to a free and unobstructed path of travel ~~way~~ to an exit at the exterior of the building~~, which way~~ and such exit is readily visible and identifiable from the point of termination of the exit enclosure.
   1.2. The entire area of the level of discharge is separated from areas below by construction conforming to the fire-resistance rating for the exit enclosure.
   1.3. The egress path from the exit enclosure on the level of discharge is protected throughout by an approved automatic sprinkler system. All portions of the level of discharge with access to the egress path shall either be protected throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, or separated from the egress path in accordance with the requirements for the enclosure of exits.
2. A maximum of 50 percent of the number and capacity of the exit enclosures is permitted to egress through a vestibule provided all of the following are met:
   2.1. The entire area of the vestibule is separated from areas below by construction conforming to the fire resistance rating for the exit enclosure.
   2.2. The depth from the exterior of the building is not greater than 10 feet (3048 mm) and the length is not greater than 30 feet (9144 mm).
   2.3. The area is separated from the remainder of the level of exit discharge by construction providing protection at least the equivalent of approved wired glass in steel frames.
   2.4. The area is used only for means of egress and exits directly to the outside.
3. Stairways in open parking garages complying with Section 1020.1, Exception 5, are permitted to egress through the open parking garage at the level of exit discharge.
4. Horizontal exits complying with Section 1022 shall not be required to discharge directly to the exterior of the building.

Reason: Exception 1 allows egress through areas along the way to the exterior of the building but those areas are not well defined. As written, it could be interpreted to allow for a free and unobstructed way that winds through various areas on the level of discharge as long as the way is readily visible and identifiable. The intent of the exception is to allow for egress along a path of travel which leads directly to an exit at the exterior of the building that can be seen from the door of the exit enclosure. This revision clarifies that the exit door to the exterior of the building must be visible upon egress from the exit enclosure which is how this section is being interpreted in most jurisdictions today.

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

Committee Action: **Approved as Submitted**

Committee Reason: The proposed language clarifies that the exit signage is not enough in the lobby used for exit discharge. The exit door must be visible from the bottom of the exit stair.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because public comments were submitted.

Public Comment 1:

Lori Lee Graham, City of Portland, OR, representing herself, requests Approval as Modified by this public comment.

Modify proposal as follows:

1024.1 (IFC [B] 1024.1) (Supp) General. Exits shall discharge directly to the exterior of the building. The exit discharge shall be at grade or shall provide direct access to grade. The exit discharge shall not reenter a building.

Exceptions:

1. A maximum of 50 percent of the number and capacity of the exit enclosures is permitted to egress through areas on the level of discharge provided all of the following are met:
   1.1. Such exit enclosures egress to a free and unobstructed path of travel to an exterior exit door ~~at the exterior of the building~~ and such exit is readily visible and identifiable from the point of termination of the exit enclosure.
   1.2. The entire area of the level of discharge is separated from areas below by construction conforming to the fire-resistance rating for the exit enclosure.

1.3. The egress path from the exit enclosure on the level of discharge is protected throughout by an approved automatic sprinkler system. All portions of the level of discharge with access to the egress path shall either be protected throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, or separated from the egress path in accordance with the requirements for the enclosure of exits.

2. A maximum of 50 percent of the number and capacity of the exit enclosures is permitted to egress through a vestibule provided all of the following are met:
   2.1. The entire area of the vestibule is separated from areas below by construction conforming to the fire resistance rating for the exit enclosure.
   2.2. The depth from the exterior of the building is not greater than 10 feet (3048 mm) and the length is not greater than 30 feet (9144 mm).
   2.3. The area is separated from the remainder of the level of exit discharge by construction providing protection at least the equivalent of approved wired glass in steel frames.
   2.4. The area is used only for means of egress and exits directly to the outside.
3. Stairways in open parking garages complying with Section 1020.1, Exception 5, are permitted to egress through the open parking garage at the level of exit discharge.
4. Horizontal exits complying with Section 1022 shall not be required to discharge directly to the exterior of the building.

Commenter's Reason: The proposal as approved by the committee has a flaw in that it requires an unobstructed path to an "exit" at the exterior of the building. Since the definition of exit includes 6 different things, this exit could be another exit enclosure (vertical) or an exit passageway, or an exterior exit stairway. We believe the intent of the proponent and of the original code is that this is specifically an exterior exit door.

Public Comment 2:

Wayne R. Jewell, CBO, City of Southfield, MI, representing himself, requests Disapproval.

Commenter's Reason: First, the proponent claims that egress to the exterior of a building through a lobby are not well defined and the exit discharge, door to the exterior **shall** be readily visible, in other words you must see it, from the point of termination of the vertical exit enclosure. It is further claimed that most jurisdictions interpret this section to mean that a person leaving the vertical exit enclosure must see the exit discharge. Think about it; is this the case in buildings within your jurisdiction? Can you see the point of exit discharge from the termination point of every vertical exit enclosure in a multi-story building? The code requires directional exit signage, this works on numerous other stories above grade. Why is it that it is not acceptable on the level of exit discharge? People have entered this building through an entrance way, which in many instances where interior lobbies are used to terminate exit enclosures will be familiar space to them and with the aid of directional exit signage the point of discharge is readily distinguishable. There has been no substantiation provided to demonstrate what has been taking place within the design and construction of numerous multi-story buildings over the years has been a threat to the ability of persons to egress a building at the level of exit discharge, a location which they are probably some what familiar with if not a common place of travel. This eliminates a the ability of a vertical exit enclosure to terminate into a grade floor lobby and require an occupant to simply turn right or left, as directed by an exit sign to see the point of exit discharge, 95+% of the time the door they entered the building from.

Final Action: AS AM AMPC____ D

E141-07/08

1025.1.1, (IFC [B] 1025.1.1)

Proposed Change as Submitted:

Proponent: Gerard Hathaway, New York State Department of State Building Codes Division, representing ICC 300 Development Committee

Revise as follows:

1025.1.1 (IFC [B] 1025.1.1) Bleachers. Bleachers, grandstands, and folding and telescopic seating, that are not building elements, shall comply with ICC 300.

Reason: Bleachers, Grandstands and Folding and Telescopic Seating are addressed in ICC 300. The purpose of the proposed scoping change is to clarify that bleachers, grandstands and folding and telescopic seating are limited to items that are separate, independent structures from the buildings. They may be located within buildings or combined with spaces constructed under or over (e.g. concessions booths, toilets, roofs). The ICC 300 addresses specifics for the listed types of seating only. The ICC 300 is not intended to be utilized for single row seating that is supported directly on the floor system.

Note that 'building element' is a defined term that was added to the code by FS04-06/07.

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

Committee Action: **Approved as Submitted**

Committee Reason: The inclusion of the term "not a building element" clarifies that bleachers and grandstands are not part of a floor system. Therefore, where ICC 300 *Bleachers, Grandstands and Folding and Telescopic Seating* should be used is also clarified.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Gene Boecker, Code Consultants, Inc., representing himself, requests Disapproval.

Commenter's Reason: While I agree with the intent of the proposal it does not provide clarification.

First, the definition is in Chapter 7 and not in Chapter 2 or chapter 10. The definition relates back to structural elements as defined in Chapter 6. If the definition for building element is applicable it should have been moved to chapter 2 because it would apply to more than one portion of the code.

Second, the definition is not intended to be used in this fashion. A building element includes floors, columns, and beams. It also includes trusses. The framework under the bleachers resembles truss work. There is not a clear distinction in the definition.

Third, if a person stands on it does it make it a floor? Not if it's a bleacher. But the definition does not assist in that manner. There is no definition of floor from which to distinguish a "floor board" from a floor. The code provision for platforms already blurs the line and this does not help. A platform is built on top of the floor. The bleacher and the platform both need to have structural stability but not necessarily fire resistance. If tiered seating is constructed on top of the roof it is bleacher seating. If it is constructed extending from one floor level to another is it still a bleacher even if the materials are the same as that used for the floor?

Fourth, the appearance of the "bleacher" may be the same as that for the rest of the facility but does that allow it to still be a bleacher? If the tiered seating is concrete and the floor is concrete, does that mean that it is now a floor or can it still be treated as a bleacher? The reference back to "building element doe s not help. Since all building elements must support their own weight and that contributing to it, there must be a better way to distinguish the bleacher. Simply because it looks like a floor doesn't mean it must be treated as a floor but the definition does not clarify that.

Fifth, the construction method for the seating may or may not be a factor using this definition. How many vertical supports are necessary for the bleacher to be a bleacher? If, instead of lattice and truss work, a series of beams are used to support the floorboards and a single column to support those beams, is it still a bleacher or now do the "beams and the "column" become a building element? It looks the same from the top and the area below is the same but the construction is different. What is seats are hung from the front of the upper concourse by a similar system? Is the cantilever beam now a building element or part of the bleacher system?

I believe the intent is that if the bleacher is removed, the building remains, compartmentalized as it normally would without the seating. However, for an outdoor ballpark, what would be left may be only a couple of locker rooms and a few concession stands. There is no compartmentalization for such a facility anyway. The reference to the definition does not provide the clarity needed. Until such can be done this adds nothing to the code. There is still much work to be done to provide clarification.

Final Action: AS AM AMPC____ D

E147-07/08

1027.1, 1027.1.6, 1027.2 (New), 1027.2.5 (New), 1027.2.6 (New), 1027.2.6.1 (New), 1027.2.6.2 (New), 1027.2.6.3 (New), 1027.3 (New), 1027.3.1 (New), 1027.7 (New), Chapter 35, (IFC [B] 1027.1, [B] 1027.1.6, [B] 1027.2 (New), [B] 1027.2.5 (New), [B] 1027.2.6 (New), [B] 1027.2.6.1 (New), [B] 1027.2.6.2 (New), [B] 1027.2.6.3 (New), [B] 1027.3 (New), [B] 1027.3.1 (New), [B] 1027.7 (New), Chapter 45)

Proposed Change as Submitted:

Proponent: James P. Colgate, RA, Esq, City of New York, Department of Buildings; Thomas Jensen, City of New York Fire Department

1. Revise as follows:

SECTION 1027 (IFC [B] 1027) (Supp)
EXIT PATH MARKINGS

1027.1 (IFC [B] 1027.1) (Supp) General. Approved luminous markings delineating the exit path shall be provided in ~~exit enclosures, including vertical exit enclosures and exit passageways, of~~ buildings of Group A, B, E, I, M, and R-1 having occupied floors located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access ~~and shall comply with Sections 1027.1.1 through 1027.1.7~~ in accordance with Sections 1027.2 through 1027.7.

Exception: Exit path markings shall not be required in lobbies or areas of open parking garages, where such lobby or area is located on the level of exit discharge and complies with ~~the exception~~ to Section ~~1023.1~~ 1024.1 Exceptions 1 or 3.

1027.2 (IFC [B] 1027.2) Markings within exit enclosures. Egress path markings shall be provided in exit enclosures, including vertical exit enclosures and exit passageways, in accordance with Sections 1027.2.1 through 1027.2.6.

~~**1027.1.1 (IFC [B] 1027.1.1)**~~ **1027.2.1 (IFC [B] 1027.2.1) (Supp) Steps.** A stripe shall be applied to the horizontal leading edge of each step and shall extend for the full length of the step. Outlining stripes shall have a minimum horizontal width of 1 inch (25 mm) and a maximum width of 2 inches (51 mm). The leading edge of the stripe shall be placed at a maximum of ½ inch (13 mm) from the leading edge of the step and the stripe shall not overlap the leading edge of the step by not more than ½ inch (13 mm) down the vertical face of the step.

~~**1027.1.2 (IFC [B] 1027.1.2)**~~ **1027.2.2(IFC [B] 1027.2.2) (Supp) Landings:** The leading edge of landings shall be marked with a stripe consistent with the dimensional requirements for steps.

~~**1027.1.3 (IFC [B] 1027.1.3)**~~ **1027.2.3 (IFC [B] 1027.2.3) (Supp) Handrails:** All handrails and handrail extensions shall be marked with a stripe having a minimum width of 1 inch (25 mm). The stripe shall be placed on the top surface of the handrail for the entire length of the handrail, including extensions and newel post caps. Where handrails or handrail extensions bend or turn corners, the stripe shall not have a gap of more than 4 inches (102 mm).

~~**1027.1.4 (IFC [B] 1027.1.4)**~~ **1027.2.4 (IFC [B] 1027.2.4) (Supp) Perimeter demarcation lines:** Stair landings and other floor areas within exit enclosures, with the exception of the sides of steps, shall be provided with demarcation lines on the floor or on the walls or a combination of both. The stripes shall be 1 (25 mm) to 2 inches (51 mm) wide with interruptions not exceeding 4 inches (102 mm).

~~**1027.1.4.1(IFC [B] 1027.1.4.1)**~~ **1027.2.4.1 (IFC [B] 1027.2.4.1) (Supp) Floor mounted demarcation lines:** Perimeter demarcation lines shall be placed within 4 inches of the wall and shall extend to within 2 inches (51 mm) of the markings on the leading edge of landings. The demarcation lines shall continue across the floor in front of all doors.

> **Exception:** Demarcation lines shall not extend in front of exit doors that lead out of an exit enclosure and through which occupants must travel to complete the exit path.

~~**1027.1.4.2 (IFC [B] 1027.1.4.2)**~~ **1027.2.4.2 (IFC [B] 1027.2.4.2) (Supp) Wall mounted demarcation lines:** Perimeter demarcation lines shall be placed on the wall with the bottom edge of the stripe no more than 4 inches (102 mm) above the finished floor. At the top or bottom of the stairs, demarcation lines shall drop vertically to the floor within 2 inches (51 mm) of the step or landing edge. Demarcation lines on walls shall transition vertically to the floor and then extend across the floor where a line on the floor is the only practical method of outlining the path. Where the wall line is broken by a door, demarcation lines on walls shall continue across the face of the door or transition to the floor and extend across the floor in front of such doors.

> **Exception:** Demarcation lines shall not extend in front of exit doors that lead out of an exit enclosure and through which occupants must travel to complete the exit path.

~~**1027.1.4.3 (IFC [B] 1027.1.4.3)**~~ **1027.2.4.3 (IFC [B] 1027.2.4.3) (Supp) Transition.** Where a wall mounted demarcation line transitions to a floor mounted demarcation line, or vice-versa, the wall mounted demarcation line shall drop vertically to the floor to meet a complimentary extension of the floor mounted demarcation line, thus forming a continuous marking.

1027.2.5 (IFC [B] 1027.2.5) Obstacles. Obstacles at or below 6'-6" (1981 mm) in height and projecting more than 4" (102 mm) into the egress path shall be outlined with markings no less than 1" (25 mm) in width comprised of a pattern of alternating equal bands, of luminescent luminous material and black, with the alternating bands no more than 2" thick and angled at 45 degrees. Obstacles shall include, but are not limited to, standpipes, hose cabinets, wall projections, and restricted height areas. However, such markings shall not conceal any required information or indicators including but not limited to instructions to occupants for the use of standpipes.

1027.2.6 (IFC [B] 1027.2.6) Intervening doors within exit enclosures and discharge doors from exit enclosures. Doors through which occupants within an exit enclosure must pass in order to complete the exit path shall be provided with markings complying with Sections 1027.6.1 through 1027.2.6.3.

1027.2.6.1 (IFC [B] 1027.2.6.1) Low-location luminous marking for doors. The doors shall be identified by a low-location luminous marking complying with Section 1027.3.

1027.2.6.2 (IFC [B] 1027.2.6.2) Door Hardware markings. Door hardware shall be marked with no less than 16 in^2 (406 mm2) of luminous material. This marking shall be located behind, immediately adjacent to, or on the door handle and/or escutcheon. Where a panic bar is installed, such material shall be no less than 1" (25 mm) wide for the entire length of the actuating bar or touchpad.

1027.2.6.3 (IFC [B] 1027.2.6.3) Door frame markings. The top and sides of the door frame shall be marked with a solid and continuous 1" to 2" (25 mm to 51 mm) wide stripe. Where the door molding does not provide sufficient flat surface on which to locate the stripe, the stripe shall be permitted to be located on the wall surrounding the frame.

1027.3 (IFC [B] 1027.3) Markings where exit signs are provided. Where exit signs are provided in accordance with Section 1011 in interior corridors, at doors opening into exits, or within exit enclosures, approved low-location luminous egress path markings shall be provided. The top of the marking shall be not more than 18 inches (457 mm) above the finished floor. For doors, the marking shall be mounted on the door, or on the wall adjacent to latch side of the door with the nearest edge of the marking within 4 inches (100 mm) of the door frame.

1027.3.1 (IFC [B] 1027.3.1) Graphics. The marking shall comply with the following:

1. The marking shall contain the "emergency exit" symbol complying with the 1st line of Table 4.2 of NFPA 170, except that the color of the luminous portions shall be permitted to be a light, contrasting color in lieu of white. The exit symbol shall be least 4" (102 mm) high.
2. The marking shall contain the word EXIT printed in sans serif letters at least 4" (102 mm) high with strokes no less than ½" (13 mm). The color of the letters shall be the same as the exit symbol if the background is luminous, or shall be a light color or white if the letters are luminous and the background is the same color as the exit symbol.
3. In the case of markings that identify doors, the marking shall not be required to contain an arrow when mounted on the door, but shall contain an arrow when mounted on a wall. Any such arrow shall be at 45 degrees and at least 2 ¾" (70 mm) high and shall comply with the 3rd, 4th, 8th or 9th line of Table 4.2 of NFPA 170, except that the color of the arrow shall be the same as the exit symbol if the background is luminous, or shall be a light color or white if the exit symbol is luminous and the background is the same color as the exit symbol.
4. In the case of markings that do not identify a door, the sign shall contain an arrow at least 2 ¾" (70 mm) high, complying with the 2nd, 3rd, 4th, 7th, 8th or 9th line of Table 4.2 of NFPA 170, except that the color of the arrow shall be the same as the exit symbol if the background is luminescent, or shall be a light color or white if the arrow is luminescent and the background is the same color as the exit symbol.
5. Additional descriptive text shall be permitted, provided such words are in sans serif letters and are no more than one-half as high as the word EXIT or the emergency exit symbol.

~~**1027.1.5 (IFC [B] 1027.1.5)**~~ **1027.4 (IFC [B] 1027.4) (Supp) Uniformity.** Placement and dimensions of markings shall be consistent and uniform throughout the same exit enclosure.

~~**1027.1.6 (IFC [B] 1027.1.6)**~~ **1027.5 (IFC [B] 1027.5) (Supp) Materials.** Luminescent exit path markings shall be permitted to be made of any material, including paint, provided that an electrical charge is not required to maintain the required luminance. Such materials shall include, but not limited to, self-luminous materials and photoluminescent materials. Materials shall comply with either:

1. UL 1994, or
2. ASTM E 2072, except that the charging source shall be 1 foot candles (11 lux) of fluorescent illumination for 60 minutes, and the minimum luminance shall be 30 milicandelas per square meter at 10 minutes and 5 milicandelas per square meter after 90 minutes.

~~**1027.1.7 (IFC [B] 1027.1.7)**~~ **1027.6 (IFC [B] 1027.6) (Supp) Illumination.** Exit enclosures where photoluminescent exit path markings are installed shall be provided with the minimum means of egress illumination required by Section 1006 for at least 60 minutes prior to periods when the building is occupied.

1027.7 (IFC [B] 1027.7) Labeled. The markings shall be labeled in at least 6 point font with the manufacturer's name and product number, the test standard utilized, and, where ASTM E 2072 is utilized, the luminance measurements at 10 and 90 minutes.

Exception: For paints and epoxies applied in the field, the labeling information shall be provided on the container.

2. Add standard to Chapter 35 (IFC Chapter 45) as follows:

NFPA

170-06 Standard for Fire Safety and Emergency Symbols

Reason: The purpose of this code change proposal is modify section 1027 to include the egress path marking components that are already required in high rise buildings in New York City.

At the Codes Forum in Orlando in 2006, the Means of Egress Committee was supportive of low-location egress path marking system for high rise buildings, but was frustrated by the number different proposals. The Committee rejected all of the proposals and suggested that the various proponents work together to resolve their differences, and to submit a more unified proposal in the future. As a result, at the Final Action hearing in Rochester, Section 1027 was added by over two-thirds majority of the membership present.

The luminous low-location egress path marking systems, required only in particular occupancies of high-rise buildings, identify the egress path elements in the event of failure of power and back-up power. Although based on the requirements already enacted in New York City, Section 1027, as adopted in Rochester, lacks some important components required in New York City and, therefore, did not result in a complete egress path marking system. Specifically, Section 1027 currently does not require the egress path marking system to include marking of obstacles, of intervening egress doors, and of access to the exit doors. This proposal will strengthen Section 1027 by adding into it these omitted features.

Organizationally, the proposal will break the egress path marking requirements into two parts. The first part will comprise Section 1027.2, and will include those markings within the exit enclosure. The second part will comprise Section 1027.3, and will include a limited amount of markings within the exit access.

This proposal will add three new components into section 1027:

1. Obstacles within exits: The current Section 1027 does not require the marking of obstacles, such as hose cabinets, radiators, pipes, etc. In dark conditions where only outlines of the steps, floors, and handrails are luminous, it is critical to mark the projecting obstacles to prevent accidents. Section 1027.2.5 will require markings of obstacles with luminous stripes.
2. Intervening doors within exits: The current Section 1027 does not require the marking of intervening doors through which an occupant who is already within the exit enclosure must thereafter pass through in order to complete the egress path. In dark conditions, it is critical to make clear to the occupant what is the next step when the stair ends abruptly at ground floor or at a transfer level. Section 1027.2.6 will require markings of such doors with luminous stripes around the door moldings, markings at the door hardware, and a low-location sign.
3. At locations where exit signs are required: The current section 1027 provides markings within the exit enclosure, but does not require any markings that identify the exits from the exit access side. When the power and back-up power fail, finding the exit in the dark would be difficult without low-location luminous markings. Section 1027.3 will require low-location markings at the door opening onto the exit and interior corridors at the same locations where high-location exit signs are required by Section 1011.

Additionally, the proposal will add a requirement for a minimum luminance measurement at 10 minutes for products tested under the ASTM

2072 testing standard. This was inadvertently omitted from the prior proposal. The 10-minute standard will ensure that the luminance has a sufficient luminance decay curve such that the markings will be brighter at the beginning of an evacuation.

Lastly, the proposal will require that the products be labeled by the manufacturer to increase accountability and prevent counterfeiting.

The new additions to Section 1027 come from the standards established by New York City's RS 6-1. The RS 6-1 was developed by the New York City Department of Buildings' architects and engineers after over one year of research of all available relevant standards, including but not limited to those published by the ASTM, UL, ISO, IMO, APTA (American Public Transportation Association). In addition, the department performed outreach and consultation with the various industries, including those from overseas. The Buildings Department also inspected mock-up/test installations of luminescent markings in various permutations, with different placement and dimensional configurations, to ensure that the resulting standards were adequate and appropriate. The result of all this research was a draft standard that was published for public comment – the public hearing on the proposal drew over 80 attendees representing a wide range of egress and safety experts. As a result of the public comment, the draft standard was refined and published in final form on May 31, 2005. Since then over 1500 installations have been completed in high rise buildings pursuant to this standard. It is on the basis of this experience that this proposal is being made.

Regarding obstacles markings, the text comes from New York City's RS 6-1. The only change to New York's city language was a clarification that required standpipe instructions should not be covered by the markings.

Regarding the intervening door markings, the text also comes from New York City's RS 6-1.

Regrading the markings on the exit access side of exit doors, the text comes from New York City's RS 6-1. However, at the time of RS 6-1's enactment in 2005, the NFPA 170 had not yet by then been updated to include the international arrow and egress symbols. As a result, RS 6-1 referenced ISO 7010 (2003). With the recent modification to NFPA 170 (2006), this proposal will reference to NFPA instead of ISO.

Regarding the 10-minute measurement at 30 milicandelas per square meter, this is the same luminance reading as specified in New York City's RS 6-1.

Regarding the labeling requirement, this is the same as specified in New York City's RS 6-1. There is no need to specify labeling for products tested to UL 1994 since UL 1994 already has a labeling provision as a condition of the listing.

Bibliography:

1. ASTM E 2072-04, Standard Specification for Photoluminescent (Phosphorescent) Safety Marking
2. City of New York, Department of Buildings. Building Code Reference Standard RS 6-1 and 6-1A (available at http://www.nyc.gov/html/dob/downloads/pdf/rs_6-1.pdf). Promulgated May 31, 2005.
3. City of New York, Department of Buildings. Word Trade Center Building Code Task Force: Findings and Recommendations (available at http://home2.nyc.gov/html/dob/downloads/pdf/wtcbctf.pdf). February, 2003.
City of New York.
4. Local Law 26 of 2004, Section 15, modifying Building Code Section 27-283 (available at http://www.nyc.gov/html/dob/downloads/bldgs_code/locallaw26of04.pdf). Enacted May 24, 2004.
5. UL 1994-04, Luminous Egress Path Marking Systems, with revisions through February, 2005.

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

Analysis: Review of proposed new standard NFPA 170 indicated that, in the opinion of ICC Staff, the standard did comply with ICC standards criteria.

Committee Action: **Disapproved**

Committee Reason: The proposal would require photo luminescent markings in all corridors, not just in exits. With all obstructions being marked, the visual clutter may be a problem for occupants following the means of egress. There was no justification provided that the current requirements were not adequate. There is no testing that photoluminescent markings are going to provide additional levels of protection in general, and this proposal is just adding more. Section 1027.3.1 references only specific lines of a table in NFPA 170 – the requirements should be moved into the code. The labeling requirement in Section 1027.7 is a problem for enforcement – where and how often in a building. Low exit signage was previously disapproved in E80-07/08. The proponent developed new standards for graphics instead of following those in NFPA 170.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

James P. Colgate, RA, Esq., New York City Department of Buildings, requests Approval as Modified by this public comment.

Modify proposal as follows:

1027.2.6 ~~Intervening doors within exit enclosures and discharge d~~Doors from exit enclosures. Doors through which occupants within an exit enclosure must pass in order to complete the exit path shall be provided with markings complying with Sections 1027.6.1 through 1027.2.6.3.

1027.2.6.1. Emergency Exit Symbol. ~~Low-location luminous marking for doors.~~ The door shall be identified by a low-location luminous emergency exit symbol complying with NFPA 170~~marking complying with Section 1027.3~~. The exit symbol shall be a minimum of 4 inches (102 mm) in height and shall be mounted on the door, centered horizontally, with the top of the symbol no higher that 18 inches (457 mm) above the finished floor.

~~**1027.3 Markings where exit signs are provided.** Where exit signs are provided in accordance with Section 1011 in interior corridors, at doors opening into exits, or within exit enclosures, approved low-location luminous egress path markings shall be provided. The top of the marking shall be not more than 18 inches (457 mm) above the finished floor. For doors, the marking shall be mounted on the door, or on the wall adjacent to latch side of the door with the nearest edge of the marking within 4 inches (100 mm) of the door frame.~~

~~**1027.3.1 Graphics.** The marking shall comply with the following:~~

1. ~~The marking shall contain the "emergency exit" symbol complying with the 1st line of Table 4.2 of NFPA 170, except that the color of the luminous portions shall be permitted to be a light, contrasting color in lieu of white. The exit symbol shall be least 4" (102 mm) high.~~
2. ~~The marking shall contain the word EXIT printed in sans serif letters at least 4" (102 mm) high with strokes no less than ½" (13 mm). The color of the letters shall be the same as the exit symbol if the background is luminous, or shall be a light color or white if the letters are luminous and the background is the same color as the exit symbol.~~
3. ~~In the case of markings that identify doors, the marking shall not be required to contain an arrow when mounted on the door, but shall contain an arrow when mounted on a wall. Any such arrow shall be at 45 degrees and at least 2 ¾" (70 mm) high and shall comply with the 3rd, 4th, 8th or 9th line of Table 4.2 of NFPA 170, except that the color of the arrow shall be the same as the exit symbol if the background is luminous, or shall be a light color or white if the exit symbol is luminous and the background is the same color as the exit symbol.~~
4. ~~In the case of markings that do not identify a door, the sign shall contain an arrow at least 2 ¾" (70 mm) high, complying with the 2nd, 3rd, 4th, 7th, 8th or 9th line of Table 4.2 of NFPA 170, except that the color of the arrow shall be the same as the exit symbol if the background is luminescent, or shall be a light color or white if the arrow is luminescent and the background is the same color as the exit symbol.~~
5. ~~Additional descriptive text shall be permitted, provided such words are in sans serif letters and are no more than one-half as high as the word EXIT or the emergency exit symbol.~~

(Renumber remaining paragraphs 1027.4, 1027.5, 1027.6)

~~**1027.7 Labeled.** The markings shall be labeled in at least 6 point font with the manufacturer's name and product number, the test standard utilized, and, where ASTM E 2072 is utilized, the luminance measurements at 10 and 90 minutes.~~

~~Exception: For paints and epoxies applied in the field, the labeling information shall be provided on the container.~~

(Portions of proposal not shown remain unchanged)

Commenter's Reason: In Rochester, the ICC membership voted to add low-location luminous egress path markings as a requirement in the exit enclosures of most new high-rise buildings. This improvement in fire safety followed the lead of New York City – which required such markings in all new and existing high rise office buildings back in 2004 as a result of lessons learned from 1993 and 2001 World Trade Center attacks.

However, the Rochester change did not address three fundamental aspects of the low-location luminous egress path system – namely, the marking of the door opening into the exit enclosure, the marking of the protruding obstacles within the exit enclosure, and the marking of the door discharging from the exit enclosure. In Palm Springs, I submitted a proposal that rectified all three missing components.

However, in Palm Springs, the Means of Egress Committee made clear that it was not ready to require low-location luminous egress path markings outside of the exit enclosures. It was concerned about the placement of such markings, that it was simply too much, and that it would make for much visual clutter.

The other issues raised by the Means of Egress Committee were related to the overly-complicated way in which the proposal referenced NFPA 170 (Standard for Fire Safety and Emergency Symbols), and that the labeling requirement was problematic.

This public comment squarely addresses all of these of these Committee concerns.

First, it eliminates any requirement for markings outside of the exit enclosure – if accepted by the membership, this comment will restrict the markings solely to within the exit enclosure. While the result will be less extensive than New York City's requirements, the overall system resulting from adoption of this comment will greatly improve safety.

Second, it simplifies the NFPA signage, so that the only signage requirement is a single, low-location emergency exit symbol on the inside face of the door that exits out of the exit enclosure. This exit symbol on the discharge door is an important feature because knowing which door is the one out of the exit enclosure is important to the safe evacuation when there is a loss of both primary and emergency power.

Third, it removes the labeling requirement that the committee found problematic.

The result of these changes to E 147 is that the path markings that the 2009 IBC will require in high-rise buildings will provide a complete and safe system of emergency egress.

Final Action: AS AM AMPC____ D

E148-07/08
1027.1.6 (IFC [B] 1027.1.6)

Proposed Change as Submitted:

Proponent: Manny Muniz, Manny Muniz Associates, LLC, representing himself

1. Add new text as follows:

1027.1.6 (IFC [B] 1027.1.6) Stairway floor number signs. Stairway floor number signs required by 1020.1.6 shall also comply with Section 1027.1.8.

2. Revise text as follows:

~~**1027.1.6 (IFC [B] 1027.1.6)**~~ **1027.1.7 (IFC [B] 1027.1.7) (Supp) Materials.** Luminescent exit path markings shall be permitted to be made of material including paint, provided that an electrical charge is not required to maintain the required luminance. Such materials shall include, but not be limited to, self-luminous materials and photoluminescent materials. Materials shall comply with either:

1. UL 1994 or
2. ASTM E 2072, except that the charging source shall be 1 foot candle (11 lux) of fluorescent illumination for 60 minutes, and the minimum luminance shall be 5 millicandles per square meter after 90 minutes.

~~**1027.1.7 (IFC [B] 1027.1.7)**~~ **1027.1.8 (IFC [B] 1027.1.8) (Supp) Illumination.** Exit enclosures where photoluminescent exit path markings are installed shall be provided with the minimum means of egress illumination required by Section 1006 for at least 60 minutes prior to periods when the building is occupied.

Reason: The ICC membership agreed with the New York City Building Code by voting to require that stairs, handrails and stair landings in high rise stair enclosures be marked so they are visible during normal, emergency and total blackout lighting conditions. Stairway floor numbers signs required by Section 1020.1.6 give critical egress information which should also be visible during all three of these lighting conditions.

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

Analysis: The 2007 Supplement includes a new Section 1027 Exit Path Markings where this proposal language would be located. A consideration would be if this new requirement should be located in Section 1020.1.6

Committee Action: **Disapproved**

Committee Reason: Section 1020.1.6 uses the term 'stairway identification' signs instead of 'stairway floor number signs' used in this proposal. The signage requirements should be in Section 1020, not in photoluminescent requirements.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Manny Muniz, Manny Muniz Associates, LLC, representing himself, requests Approval as Modified by this public comment.

Replace proposal as follows:

1020.1.6 (IFC [B] 10201.1.6) (Supp) Floor identification signs. A sign shall be provided at each floor landing in interior exit enclosures connecting more than three stories designating the floor level, the terminus of the top and bottom of the exit enclosure and the identification of the stair or ramp. The signage shall also state the story of, and the direction to the exit discharge and the availability of roof access from the enclosure for the fire department. The sign shall be located 5 feet (1524 mm) above the floor landing in a position that is readily visible when the doors are in the open and closed positions. Floor level identification signs in tactile characters complying with ICC A117.1, shall be located at each floor level landing adjacent to the door leading from the enclosure into the corridor to identify the floor level.

1020.1.6.1 (IFC [B] 10201.1.6.1) (Supp) Signage requirements. Stairway identification signs shall comply with all of the following requirements:

1. The signs shall be a minimum size of 18 inches (457 mm) by 12 inches (305 mm).
2. The letters designating the identification of the stair enclosure shall be a minimum of 1 1/2 inches (38 mm) in height.
3. The number designating the floor level shall be a minimum of 5 inches (127 mm) in height and located in the center of the sign.
4. All other lettering and numbers shall be a minimum of 1 inch (22 mm) in height.
5. Characters and their background shall have a nonglare finish. Characters shall contrast with their background, with either light characters on a dark background or dark characters on a light background.
6. When signs required by Section 1020.1.6 are installed in interior exit enclosures of buildings subject to Section 1027, the signs shall be made of the same materials as required by Section 1027.1.6.

Commenter's Reason: The committee's reason for disapproval was not because the proposal did not have merit but because it was not located in the correct section of the code. Based on the recommendations of the committee, the proposal has now been relocated to 1020.1.6.

The ICC membership agreed with the New York City Building Code by voting to require that stairs, handrails and stair landings in high rise stair enclosures be marked so they are visible during normal, emergency and total blackout lighting conditions. Stairway floor numbers signs required by Section 1020.1.6 give critical egress information which should also be visible during all three of these lighting conditions.

Final Action: AS AM AMPC____ D

E149-07/08
1027 (IFC [B] 1027)

Proposed Change as Submitted:

Proponent: Lawrence G. Perry, AIA, representing Building Owners and Managers Association (BOMA) International

Delete without substitution:

~~**SECTION 1027 (Supp)**~~
~~**EXIT PATH MARKINGS**~~

~~**1027.1 (IFC [B] 1027.1) (Supp) General.** Approved luminous markings delineating the exit path shall be provided in exit enclosures, including vertical exit enclosures and exit passageways, of buildings of Group A, B, E, I, M, and R-1 having occupied floors located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access and shall comply with Sections 1027.1.1 through 1027.1.7.~~

~~**Exception:** Exit path markings shall not be required in lobbies or areas of open parking garages, where such lobby or area is located on the level of exit discharge and complies with the exception to Section 1023.1.~~

~~**1027.1.1 (IFC [B] 1027.1.1) (Supp) Steps.** A stripe shall be applied to the horizontal leading edge of each step and shall extend for the full length of the step. Outlining stripes shall have a minimum horizontal width of 1 inch (25 mm) and a maximum width of 2 inches (51 mm). The leading edge of the stripe shall be placed at a maximum of ½ inch (13 mm) from the leading edge of the step and the stripe shall not overlap the leading edge of the step by not more than ½ inch (13 mm) down the vertical face of the step.~~

~~**1027.1.2 (IFC [B] 1027.1.2) (Supp) Landings:** The leading edge of landings shall be marked with a stripe consistent with the dimensional requirements for steps.~~

1027.1.3 (IFC [B] 1027.1.3) (Supp) Handrails: All handrails and handrail extensions shall be marked with a stripe having a minimum width of 1 inch (25 mm). The stripe shall be placed on the top surface of the handrail for the entire length of the handrail, including extensions and newel post caps. Where handrails or handrail extensions bend or turn corners, the stripe shall not have a gap of more than 4 inches (102 mm).

1027.1.4 (IFC [B] 1027.1.4) (Supp) Perimeter demarcation lines: Stair landings and other floor areas within exit enclosures, with the exception of the sides of steps, shall be provided with demarcation lines on the floor or on the walls or a combination of both. The stripes shall be 1 (25 mm) to 2 inches (51 mm) wide with interruptions not exceeding 4 inches (102 mm).

1027.1.4.1 (IFC [B] 1027.1.4.1) (Supp) Floor mounted demarcation lines: Perimeter demarcation lines shall be placed within 4 inches of the wall and shall extend to within 2 inches (51 mm) of the markings on the leading edge of landings. The demarcation lines shall continue across the floor in front of all doors.

> **Exception:** Demarcation lines shall not extend in front of exit doors that lead out of an exit enclosure and through which occupants must travel to complete the exit path.

1027.1.4.2 (IFC [B] 1027.1.4.2) (Supp) Wall mounted demarcation lines: Perimeter demarcation lines shall be placed on the wall with the bottom edge of the stripe no more than 4 inches (102 mm) above the finished floor. At the top or bottom of the stairs, demarcation lines shall drop vertically to the floor within 2 inches (51 mm) of the step or landing edge. Demarcation lines on walls shall transition vertically to the floor and then extend across the floor where a line on the floor is the only practical method of outlining the path. Where the wall line is broken by a door, demarcation lines on walls shall continue across the face of the door or transition to the floor and extend across the floor in front of such doors.

> **Exception:** Demarcation lines shall not extend in front of exit doors that lead out of an exit enclosure and through which occupants must travel to complete the exit path.

1027.1.4.3 (IFC [B] 1027.1.4.3) (Supp) Transition. Where a wall mounted demarcation line transitions to a floor mounted demarcation line, or vice versa, the wall mounted demarcation line shall drop vertically to the floor to meet a complimentary extension of the floor mounted demarcation line, thus forming a continuous marking.

1027.1.5 (IFC [B] 1027.1.5) (Supp) Uniformity. Placement and dimensions of markings shall be consistent and uniform throughout the same exit enclosure.

1027.1.6 (IFC [B] 1027.1.6) (Supp) Materials. Luminescent exit path markings shall be permitted to be made of any material, including paint, provided that an electrical charge is not required to maintain the required luminance. Such materials shall include, but not limited to, self-luminous materials and photoluminescent materials. Materials shall comply with either:

1. UL 1994, or
2. ASTM E 2072, except that the charging source shall be 1 foot candle (11 lux) of fluorescent illumination for 60 minutes, and the minimum luminance shall be 5 milicandelas per square meter after 90 minutes.

1027.1.7 (IFC [B] 1027.1.7) (Supp) Illumination. Exit enclosures where photoluminescent exit path markings are installed shall be provided with the minimum means of egress illumination required by Section 1006 for at least 60 minutes prior to periods when the building is occupied.

Reason: This proposal seeks to eliminate the requirement for photoluminescent exit path markings in exit enclosures and exit passageways in new high-rise buildings. These provisions were added to the IBC via a successful public comment to Code Change E84-06/07.
In New York City, which has been using similar provisions for several years, building owners and managers have been experiencing problems with installed materials coming loose, wearing away, or otherwise being adversely affected, due to everyday use and/or housekeeping operations.

Additionally, it is not clear if these new products will continue to meet their required performance criteria after being in place for any length of time. There is not yet any criteria available to determine on what frequency the photoluminescent materials should be inspected, re-tested, or replaced.

BOMA remains concerned that the provisions, as approved, have significant technical problems.

- The provisions allow a mixing-and-matching of demarcation lines on floors and on walls, without adequate provisions to ensure that the installation will provide a clear definition of the egress path and wall/floor intersection.
- The provisions allow wall markings up to 4” above the floor, which may confuse by making it appear that the landing floor level is 4” higher than it actually is, thereby creating a tripping hazard.
- The provisions allow the mixing-and-matching of materials from the two referenced standards (UL 1994 and ASTM E 2072). These standards have significantly different performance criteria, which may lead to a significant variation in levels of performance.

- Recent research done in Canada appears to indicate that not marking the center of landings my cause occupants to hesitate as they reach the landing, potentially creating a negative impact of egress speed.

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

Committee Action: **Disapproved**

Committee Reason: This is a new requirement in the code. New York has only had this in place for about 9 months. There is no technical justification provided that shows these provisions will not work and should be removed from the code. The maintenance issues are the building owner's responsibility.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Lawrence G. Perry, AIA, representing Building Owners and Managers Association (BOMA) International, requests Approval as Submitted.

Commenter's Reason: BOMA International continues to believe that it is premature to mandate exit path markings in all new high-rise buildings as a tertiary exit lighting system.

Further study of whether there is a justified need for a third system of 'lighting' in the stairs is needed.

The package of marking provisions is based closely on the package used in New York City, which has only been in place for a few years; BOMA is beginning to hear from our members of problems with maintenance and life of the materials. If this is as valuable a system as it is touted to be, it should be done correctly, rather than just done quickly.

Final Action: AS AM AMPC____ D

E155-07/08
1106.3

Proposed Change as Submitted:

Proponent: Tim Nogler, Washington State, representing Washington State Building Code Council

Revise as follows:

1106.3 (Supp) ~~Hospital~~ Groups I-1 and I-2 outpatient facilities. At least ten percent, but not less than one, of patient and visitor parking spaces provided to serve ~~hospital~~ Group I-1 and I-2 outpatient facilities shall be accessible.

Reason: This proposal adds new requirements to the code, and meets or exceeds current and proposed ADA language. Current ADA language reads "Outpatient units and facilities: 10 percent of the total number of parking spaces provided serving each such outpatient unit or facility." Proposed ADA-ABA language reads " 208.2.1 Hospital Outpatient Facilities. Ten percent of patient and visitor parking spaces provided to serve hospital outpatient facilities shall comply with 502". The advisory in the ADA-ABA reads "The term "outpatient facility" is not defined in this document but is intended to cover facilities or units that are located in hospitals and that provide regular and continuing medical treatment without an overnight stay. Doctor's offices, independent clinics and other facilities not located in hospitals are not considered hospital outpatient facilities for purposes of this document." The intent of this code change proposal is to be consistent with the ADA and cover outpatient services in institutional facilities classified as Group I-1 or I-2. Hospitals as referenced in the ADA-ABA may include mental hospitals or convalescent facilities, but do not include independent clinics. The building code classifies outpatient clinics as Group B, so they would not be covered by this section. The Washington state building code has contained this requirement since the original barrier free code certified by the federal Department of Justice as meeting the ADA

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

Committee Action: **Disapproved**

Committee Reason: The intent of the current text is to address outpatient facilities in Group B, not Group I-1 and I-2 facilities. This is a big change in scope with no technical justification.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Tim Nogler, Washington State Building Code Council, representing Washington Association of Building Officials, requests Approval as Modified by this public comment.

Modify proposal as follows:

1106.3 ~~Hospital~~ ~~Groups I-1 and I-2~~ Medical outpatient facilities. At least ten percent, but not less than one, of patient and visitor parking spaces provided to serve ~~hospital~~ ~~Groups I-1 and I-2~~ medical outpatient facilities shall be accessible.

Commenter's Reason: The committee in Palm Springs disapproved this proposal because "the intent of the current text is to address outpatient facilities in Group B, not I-1 and I-2 facilities." The current reference is to "hospitals", a Group I-2 occupancy. The modification achieves the intent of this section as stated by the committee .

Final Action: AS AM AMPC____ D

E157-07/08
1106.6

Proposed Change as Submitted:

Proponent: Tim Nogler, Washington State, representing Washington State Building Code Council

Revise as follows:

1106.6 Location. Accessible parking spaces shall be located on the shortest accessible route of travel from adjacent parking to an accessible building entrance. In parking facilities that do not serve a particular building, accessible parking spaces shall be located on the shortest route to an accessible pedestrian entrance to the parking facility. Where buildings have multiple accessible entrances with adjacent parking, accessible parking spaces shall be dispersed and located near the accessible entrances. Where the accessible route crosses lanes of vehicular traffic, the route shall be designated and marked as a crosswalk.

Exceptions:

1. In multilevel parking structures, van-accessible parking spaces are permitted on one level.
2. Accessible parking spaces shall be permitted to be located in different parking facilities if substantially equivalent or greater accessibility is provided in terms of distance from an accessible entrance or entrances, parking fee and user convenience.

Reason: The purpose of this code change is to add a new requirement to the code. The shortest route from accessible parking spaces to the accessible building entrance sometimes will cross vehicle traffic lanes. To accommodate the accessible route and provide the greatest possible safety to people using the route, a designated, marked crosswalk must be required where the route crosses traffic lanes. The Washington state building code has contained this requirement since the original barrier free code certified by the federal Department of Justice as meeting the ADA.

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

Committee Action: **Disapproved**

Committee Reason: The existing language in Section 1106.6, first sentence adequately addresses the proponent's concern. The additional proposed language adds confusion with non-defined terms such as 'vehicular traffic' and 'crosswalk.'

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Tim Nogler, Washington State Building Code Council, representing Washington Association of Building Officials, requests Approval as Submitted.

Commenter's Reason: The committee in Palm Springs disapproved this proposal to add a requirement for crosswalk marking where the accessible route crosses a traffic lane. The reason given was that this section already addresses the concern by requiring the parking space be located on the shortest accessible route. However, the shortest accessible route may cross a vehicular lane and may not be safe. The committee commented that "crosswalk" and "vehicular traffic" are non-defined terms. These standard terms are commonly understood, the intent is to mark the route consistent with whatever crosswalk marking is used locally, and providing a definition or specification would be too restrictive.

Final Action: AS AM AMPC____ D

E162-07/08
1107.7.2.1 (New)

Proposed Change as Submitted:

Proponent: Thomas Meyers, City of Central, CO, representing himself

Add new text as follows:

1107.7.2.1 Dwelling units with private residence elevators Multistory dwelling units containing a private residence elevator within the dwelling unit shall be a Type B unit. All levels served by the elevator shall comply with the requirements for a Type B unit. The levels served by the elevator shall include the primary entry to the unit and a toilet facility.

Reason: Private residence elevators are becoming a common feature in traditional multistory townhouses and condominiums. Under the current general exceptions, the mere presence of a private elevator located within the interior of a single unit in a multi-tenant can be construed as requiring ALL units within that building to be Type B accessible. This code change is intended to clarify that the "structure" is not automatically an "elevator building" with significant accessibility ramifications simply by the existence of a private elevator located within the interior of an individual's private dwelling unit. This clarification is consistent with FFHA interpretive guidance given by HUD sponsored agencies such as Fair Housing Accessibility First.

The second sentence clarifies that WHEN the elevator serves as an accessible route to other levels in the unit, all such levels served will be required to be Type B accessible. The third sentence is intended to indicate the minimum levels and conditions required when an elevator is provided within the unit. This is consistent with the requirements currently contained in 1107.7.2, permitting stairs to extend to other non-accessible floors in the unit.

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

Committee Action: **Disapproved**

Committee Reason: Section 1107.7.2, while unclear, does address this issue for multi-story dwelling units with elevator service. The proposal does not address what happens when the unit is intended to meet the Type A dwelling unit scoping provisions. Housing and Urban Development (HUD) interprets Fair Housing units with private residence elevators to meet Fair Housing criteria on all levels. Type B unit requirements should be consistent with this interpretation. The proposal would only require Type B elements on levels accessed by the elevator.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Thomas Meyers, CBO, City of Central, CO, representing Colorado Chapter ICC, requests Approval as Modified by this public comment.

Modify proposal as follows:

1107.7.2.1 Dwelling units with private residence elevators. Multistory dwelling units containing a private residence elevator within the dwelling unit shall be a Type B unit. All levels within the dwelling unit shall be served by the elevator and shall comply with the requirements for a Type B unit. ~~The levels served by the elevator shall include the primary entry to the unit and a toilet facility.~~

Commenter's Reason: During the hearing in Palm Springs, some minor issues were raised with this proposal causing it to be disapproved. This modification is intended to address those concerns.

The primary concern was raised by HUD testimony stating that they now intend that any private residence elevator placed within the interior of a dwelling unit provide for disabled access to all levels. The proposed modification clearly states that requirement. Once all levels are connected, the accessible route will now automatically extend to both the primary entry and to a toilet facility. This makes the last sentence unnecessary.

The committee's concerns about Type A accessibility are unfounded. The scoping for Type A always requires that the requisite 2% be provided in some location within the Group R-2 site boundaries. The unit location is at the discretion of the designer. The designer may choose to place a required Type A unit within a private residence elevator served multistory unit. If that is the case, they would be required to design that multistory to the Type A criteria contained in ICC A117.1.

Conversely, the Federal Fair Housing Act scoping for Type B accessibility is based solely on unit configuration or provision of specific features such as an elevator. If the unit is provided with this configuration, it is mandatory that it meet the Type B level of accessibility. 1107.7 is really intended to serve as the scoping mechanism for the FFHA requirements, telling the user when it is necessary to have Type B levels of accessibility. If the unit is intended to meet Type A requirements and is also configured to require Type B accessibility, both must be provided. The intent of this change is to tell the user what to do when the elevator is provided in a Type B scoped building (Section 1107.5 and 1107.6) and where these levels of accessibility are intended. Therefore, it is not necessary to include Type A application within this new subsection.

The current code language in 1107.7 is currently NOT clear as to the ramifications of placing a private residence elevator within the interior of a dwelling unit. This change as modified will add that needed clarity.

Final Action: AS AM AMPC____ D

E166-07/08
1109.2, 1109.2.2

Proposed Change as Submitted:

Proponent: Maureen Traxler, City of Seattle, WA, Department of Planning and Development

Revise as follows:

1109.2 Toilet and bathing facilities. Each toilet ~~rooms~~ room and bathing ~~facilities~~ room shall be accessible. Where a floor level is not required to be connected by an accessible route, the only toilet rooms or bathing ~~facilities~~ rooms provided within the facility shall not be located on the inaccessible floor. At least one of each type of fixture, element, control or dispenser in each accessible toilet room and bathing ~~facility~~ room shall be accessible.

Exceptions:

1. In toilet rooms or bathing facilities accessed only through a private office, not for common or public use and intended for use by a single occupant, any of the following alternatives are allowed:
   1.1. Doors are permitted to swing into the clear floor space, provided the door swing can be reversed to meet the requirements in ICC A117.1;
   1.2. The height requirements for the water closet in ICC A117.1 are not applicable;
   1.3. Grab bars are not required to be installed in a toilet room, provided that reinforcement has been installed in the walls and located so as to permit the installation of such grab bars; and
   1.4. The requirement for height, knee and toe clearance shall not apply to a lavatory.
2. This section is not applicable to toilet and bathing ~~facilities~~ rooms that serve dwelling units or sleeping units that are not required to be accessible by Section 1107.
3. Where multiple single-user toilet rooms or bathing ~~facilities~~ rooms are clustered at a single location, at least 50 percent but not less than one room for each use at each cluster shall be accessible.
4. Where no more than one urinal is provided in a toilet room or bathing ~~facility~~ room the urinal is not required to be accessible.
5. Toilet rooms that are part of critical care or intensive care patient sleeping rooms are not required to be accessible.

1109.2.2 Water closet compartment. Where water closet compartments are provided in a toilet room or bathing ~~facility~~ room, at least one wheelchair-accessible compartment shall be provided. Where the combined total water closet compartments and urinals provided in a toilet room or bathing ~~facility~~ room is six or more, at least one ambulatory-accessible water closet compartment shall be provided in addition to the wheelchair-accessible compartment. Wheelchair-accessible and ambulatory-accessible compartments shall comply with ICC A117.1.

Reason: The term "facility" is defined in Section 1102 to include "all or any portion of buildings, structures, site improvements, elements and pedestrian or vehicular routes located on a site". This proposal replaces this ambiguous, very broad term with a specific term, "room".

Using the term “bathing room” clarifies that these provisions apply to a specific location rather than the entire site or some undefined portion of the site. For instance, Section 1109.2 requires at least one of each type of fixture in each accessible bathing facility to be accessible. Since “facility” may be all or any portion of a building or a site, Section 1109.2 could be read to say that one accessible shower on a site is adequate. “Room” is much more specific and precise, and expresses the intent of these code provisions. Section 603 of ADAAG, which is very similar to Section 1109.2, also uses the term “bathing room”.

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

Committee Action: **Approved as Submitted**

Committee Reason: The proposal is editorial, however the addition of ‘each’ does clarify that all toilet rooms are required to be accessible.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Maureen Traxler, Department of Planning and Development, City of Seattle, WA, requests Approval as Modified by this public comment.

Modify proposal as follows:

1109.2 Toilet and bathing facilities. Each toilet room and bathing room shall be accessible. Where a floor level is not required to be connected by an accessible route, the only toilet rooms or bathing rooms provided within the facility shall not be located on the inaccessible floor. At least one of each type of fixture, element, control or dispenser in each accessible toilet room and bathing room shall be accessible.

Exceptions:

1. In toilet rooms or bathing ~~facilities~~ rooms accessed only through a private office, not for common or public use and intended for use by a single occupant, any of the following alternatives are allowed:
   1.1. Doors are permitted to swing into the clear floor space, provided the door swing can be reversed to meet the requirements in ICC A117.1;
   1.2. The height requirements for the water closet in ICC A117.1 are not applicable;
   1.3. Grab bars are not required to be installed in a toilet room, provided that reinforcement has been installed in the walls and located so as to permit the installation of such grab bars; and
   1.4. The requirement for height, knee and toe clearance shall not apply to a lavatory.
2. This section is not applicable to toilet and bathing rooms that serve dwelling units or sleeping units that are not required to be accessible by Section 1107.
3. Where multiple single-user toilet rooms or bathing rooms are clustered at a single location, at least 50 percent but not less than one room for each use at each cluster shall be accessible.
4. Where no more than one urinal is provided in a toilet room or bathing room the urinal is not required to be accessible.
5. Toilet rooms that are part of critical care or intensive care patient sleeping rooms are not required to be accessible.

(Portions of proposal not shown remain unchanged)

Commenter’s Reason: This change was part of the original submittal for this code change proposal, but was inadvertently omitted when the code change monograph was published. It is needed to eliminate the ambiguity of the term “facility”, and for consistency with the other changes to Section 1109.2.

E167-07/08
1109.2.1

THIS CODE CHANGE WILL BE HEARD ON THE IPC PORTION OF THE HEARING ORDER.

Proposed Change as Submitted:

Proponent: Paul Rimel, City of Staunton, representing Virginia Plumbing & Mechanical Inspectors Association

Revise as follows:

1109.2.1 (Supp) Family or assisted-use toilet and bathing rooms. In assembly and mercantile occupancies, an accessible family or assisted-use toilet room shall be provided where an aggregate of six or more male and female water closets is required. In buildings of mixed occupancy, only those water closets required for the assembly or mercantile occupancy shall be used to determine the family or assisted-use toilet room requirement. In recreational facilities where separate-sex bathing rooms are provided, an accessible family or assisted-use

bathing room shall be provided. ~~Fixtures~~ Water closets, lavatories, showers and bathtubs located within family or assisted-use toilet and bathing rooms shall be included in determining the number of fixtures provided in an occupancy.

Exception: Where each separate-sex bathing room has only one shower or bathtub fixture, a family or assisted use bathing room is not required.

Reason: The change is submitted as a recommended solution to an oversight in the current code text. Urinals located in family or assisted-use (Family/A-U) toilet rooms should not be counted toward the minimum number of required plumbing fixtures. IBC Section 1109.2.1.7 requires doors to Family/A-U toilet rooms to be securable from within the room and the exception to IBC Section 1109.2.1.2 permits installation of an optional urinal. Due to the internally locked door, a single restroom occupant causes both the water closet & urinal to become simultaneously unavailable to other building occupants. Therefore only the required water closet and lavatory should be permitted to count toward the minimum number of required fixtures. The change will not increase the cost of construction because a urinal is not required in an F/A-U toilet room. Therefore urinals in F/A-U toilet or rooms which are currently permitted to be counted toward the minimum number of required fixtures may be installed in multi-occupant restrooms which makes the fixtures independently available for use. The change correlates with the proposed changes to IPC 403.1.1 and IPC 419.2.

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

Committee Action: **Disapproved**

Committee Reason: The term 'fixtures' adequately addresses options. This could be interpreted to conflict with the exception to Section 1109.2.1.1 that allows a urinal within the room. This is also moving into a laundry list which should be avoided in code text when possible.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Paul Rimel, City of Staunton, VA, representing Virginia Plumbing & Mechanical Inspectors Association, requests Approval as Submitted.

Robert F. Loeper, Jr., President, representing Region VII Chapter of ICC

Commenter's Reason: The intent of E167 is to prohibit urinals, located in family or assisted-use toilet rooms, from counting toward the minimum plumbing fixtures required by Table 403.1. The proponent's public comment regarding committee action for disapproval is as follows:

Committee Reason 1: "The term 'fixtures' adequately addresses options."
The term fixtures does not adequately address options because a urinal is an optional fixture that cannot always be counted toward the minimum fixtures required by the IBC & IPC. One example is when the number of urinals installed exceeds 67% of required water closets in A& E or 50% in all other occupancies. The number of urinals exceeding those percentages cannot count toward the minimums (IPC 419.2) . E167 was proposed to address another instance where urinals should not be counted toward the minimum fixtures. A F/A-U toilet room is required to have an internally lockable door (IBC 1109.2.1.7), therefore when a single occupant enters the restroom & locks the door, both the water closet & urinal become unavailable to other building occupants. If the urinal weren't counted toward the minimum plumbing fixtures there'd be no problem. However, if the urinal is counted toward the minimums, as current code text dictates, one person causes two required fixtures to become unavailable at the same time. Thus the word fixtures must be replaced with water closets, lavatories, showers & bathtubs, in order to clarify which fixtures in family or assisted-use toilet rooms are permitted to count toward the minimums.

Committee Reason 2: "This could be interpreted to conflict with the exception to Section 1109.2.1.1 that allows a urinal within the room."
The exception referred to is actually located in 1109.2.1.2. E167 does not conflict with the exception & any interpretation to the contrary is incorrect. The exception will not be affected because E167 does not prohibit a urinal from being located in a F/A-U toilet room. It simply does not allow a urinal installed there to count toward the minimum fixtures. Required fixtures must remain available to building occupants when they're not in use. This is why privacy partitions are required for water closets & urinals in non-lockable, multi-occupant toilet rooms. Each fixture remains independently functional while at the same time the user's privacy is assured. It's irrelevant whether the single occupant of a family or assisted-use toilet room chooses to use the water closet or urinal. Either way, when the urinal is counted toward the minimums, two required fixtures will be unavailable to everyone else until the toilet room door is unlocked. It should also be noted that privacy partitions aren't required in F/A-U toilet rooms (IPC 310.4 & 310.5) so users will always lock the door.

Committee Reason 3: "This is also moving into a laundry list which should be avoided in code text when possible."
If IBC Chapter 11 indicates the level of concern regarding laundry lists this appears to be questionable grounds for disapproval. For example, sections 1109.7, 1110.1, 1110.2 & 1110.3 include extensive laundry lists and the lists of exceptions in Chapter 11 are too numerous to mention. All that's being proposed is replacement of one word with four in the body of the text. No new list will be created.

There was also discussion at the Public Hearings regarding accessibility. Some opponents apparently felt E167 would have a negative effect on accessibility and/or usability of F/A-U toilet rooms. The proposal has no direct effect on accessibility or usability & the only possible indirect effect would be if designers choose not to install the optional urinal because it no longer could be counted toward the minimum number of fixtures. This may result in fewer urinals in F/A-U toilet rooms but a F/A-U toilet room must still be provided when an aggregate of six or more male & female water closets are required in A & M use groups (IBC 1109.2.1). Installation of non-required urinals in F/A-U toilet rooms should not be linked to an unfair reduction in overall fixture requirements. The fact is, when urinals in F/A-U toilet rooms are allowed to be counted the overall availability of fixtures is reduced. Also F/A-U toilet rooms are used far more often by single occupants than by multiple occupants. When the urinal is counted, the effect is that two required fixtures are made simultaneously unavailable by a single occupant much more frequently than they are simutaneously in use by multiple occupants.

Finally, P22 & P35 were approved as submitted by committee action at the public hearings. These are companion changes regarding the same issue. If E167 doesn't receive final action approval, and the committee actions on P22 & P35 stand, a direct conflict between the IBC & IPC will exist. In accordance with ICC Council Procedure CP# 28-05 Section 1.3.1, this cannot occur.

The proponent urges a final action of approval as submitted based on the principles of fairness & uniformity throughout the code.

Staff analysis: Inconsistent public hearing committee actions on P22-07/08 and E167-07/08 have created a conflict between IBC Sections 1109.2.1 and 2902.1.1 and IPC Section 403.1.1. The public comments to P22 and E167 allow for two possible outcomes that will eliminate this conflict. P22 and E167 need to have consistent final action to avoid a conflict within the 2009 IBC and between the 2009 IBC and 2009 IPC.

Final Action: AS AM AMPC____ D

E168-07/08, Part I

1109.2.3; Table [P] 2902.1; [IPC Table 403.1]

NOTE: PART II DID NOT RECEIVE A PUBLIC COMMENT AND IS ON THE CONSENT AGENDA. PART II IS REPRODUCED FOR INFORMATIONAL PURPOSES ONLY FOLLOWING ALL OF PART I.

Proposed Change as Submitted:

Proponent: Tricia Mason, Little People of America

PART I – IBC MEANS OF EGRESS

Add new text as follows:

1109.2.3 Lavatories. Where lavatories are provided, at least 5 percent, but not less than one shall be accessible. Where the total lavatories provided in a toilet room or bathing facility is six or more, at least one lavatory with enhanced reach ranges in accordance with ICC A117.1, Section 606.5, shall be provided in addition to the accessible lavatory.

Reason: This is coordination with technical requirements in Section 606.5 of the ICC A117.1. The note to the plumbing table is to make the plumbing inspectors aware or the requirement and is similar to approved code change P24-06/07.

In Section 606.5 of the ICC A117.1, the standard provides technical requirements for enhanced reach range lavatories. Studies completed in 1996 by C. Angela Van Etten, former principal delegate for Little People of America to ICC/ANSI A117.1, shows that individuals with dwarfism have a limited obstructed reach depth as shown in the following table:

Obstructed Reach Range Survey of Adults with Dwarfism (August 1996)						
	Inches (mm)	Inches (mm)	Inches (mm)	Inches (mm)	Inches (mm)	Inches (mm)
Reach Depth	.66 (16.764)	2.06 (50.927)	4.74 (120.650)	6.46 (162.560)	9.32 (234.950)	10.89 (279.400)
Reach Height	48 (1220)	46 (1170)	42 (1065)	40 (1015)	36 (915)	34 (865)

Individuals with dwarfism can only reach faucets and soap dispensers up to a reach depth of 11 inches in lavatories with a height of 34 inches. Because faucets and soap dispensers are mostly installed at reach depths greater than 11 inches, little people are unable to wash their hands in public restrooms. This inherently creates a grave sanitary issue for people with dwarfism and the environments they come into contact with. The purpose of this proposal is to seek a scoping provision for the existing provision.

The original proposal was created with industry consultants who advised Little People of America that and 11 inch maximum reach depth for lavatory faucets and soap dispenser controls is technically feasible and does not involve a modification to lavatory dimensions. With the widespread use of electronically activated faucets and the possibility of relocating the faucet controls to the side of the bowl while leaving the spout towards the back, or even mounting the faucet on a sidewall, the possibilities are endless in order to comply with the provision.

It is the intent of Little People of America to see the provision be applicable where there are banks of six or more lavatories in a toilet room. At least one of the six shall comply with the ICC/ANSI A117.1 provision. The installation of a faucet on the side of the bowl within the countertop is not prohibited by code, would allow greater accessibility for all users and can be piped to provide the necessary knee and toe clearance.

"Example of enhanced reach range faucets"

Cost Impact: The proposal has the possibility of increasing the cost of construction.

Analysis: The decision by the Plumbing Code committee to add the note to Table 403.1 is dependant on the Means of Egress Committees decision to add Section 1109.2.3 to the Building Code.

PART I – IBC MEANS OF EGRESS

Committee Action: **Approved as Modified**

Modify the proposal as follows:

1109.2.3 Lavatories. Where lavatories are provided, at least 5 percent, but not less than one shall be accessible. Where the total lavatories provided in a toilet room or bathing facility is six or more, at least one lavatory with enhanced reach ranges in accordance with ICC A117.1, ~~Section 606.5,~~ shall be provided in addition to the accessible lavatory.

Committee Reason: The modification is to delete the specific reference in ICC A117.1 because a specific reference is not done elsewhere in the IBC. The code does not currently have scoping for limited reach range lavatories. Providing this scoping would address the needs of Little People of America. The proposal will not require an additional fixture in the bathroom, just that one of the lavatories provided within large bathrooms will have limited reach range faucets.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because public comments were submitted.

Public Comment 1:

Christopher Bryant, spg3 Architects, representing himself, requests Approval as Modified by this public comment.

Modify proposal as follows:

1109.2.3 Lavatories. Where lavatories are provided, at least 5 percent, but not less than one shall be accessible. Where the total lavatories provided in a toilet room or bathing facility is six or more, at least one lavatory with enhanced reach ranges in accordance with ICC A117.1, Section 606.5, shall be provided ~~in addition to the accessible lavatory~~. One lavatory shall be permitted to satisfy requirements for both accessibility and enhanced reach range.

Commenter's Reason: It would be reasonable to allow one lavatory to serve both purposes if it meets the requirements for enhanced reach range and the floor clearances and reach ranges required for accessibility.

Public Comment 2:

Lawrence G. Perry, AIA, representing Building Owners and Managers Association (BOMA) International requests Approval as Modified by this public comment.

Steve Thomas, Colorado Code Consulting, LLC, representing Colorado Chapter of ICC, requests Approval as Modified by this public comment.

Modify proposal as follows:

1109.2.3 Lavatories. Where lavatories are provided, at least 5 percent, but not less than one shall be accessible. Where the total lavatories provided in a toilet room or bathing facility is six or more, at least one lavatory with enhanced reach ranges in accordance with ICC A117.1, Section 606.5, shall be provided ~~in addition to the accessible lavatory~~.

Commenter's Reason: (Perry) This public comment seeks to modify the accepted proposal for 'enhanced reach range' lavatories. As approved, the proposal will require that enhanced reach range features be provided at a lavatory other than the accessible lavatory. There is no basis for mandating this restriction; nothing in the 'enhanced reach range' provisions makes a lavatory less accessible for other users. A117.1 enhanced reach range provisions (found at Section 606.5 of the 2003 edition) require only that manually-operated faucet controls and soap dispenser controls be within 11" of the front edge of the lavatory, automatic controls be activated within 11" of the front edge of the lavatory, and that both water flow and soap dispensing be within 11" of the front edge of the lavatory. An otherwise accessible lavatory can meet these criteria without having any negative impact on persons with disabilities. With the ever-increasing use of automatic faucets and soap dispensers, particularly in the larger toilet/bathing facilities (more than 6 lavatories) covered by this change, the 'enhanced reach' fixture may be identical to all the other fixtures. Deleting the mandate that the enhanced reach range be provided at an 'additional' lavatory provides maximum flexibility, and has no negative impact on users of the facility.

Commenter's Reason: (Thomas) In the committee's reason, it states "The proposal will not require an additional fixture in the bathroom, just that one of the lavatories provided within large bathrooms will have limited reach range faucets". The language at the end of the last sentence would contradict the committee's intent. The current language requires the enhanced reach range lavatory **in addition** to the accessible lavatory. So, if one accessible lavatory is required in a toilet room, then another lavatory would be required to be an enhanced reach range lavatory. I believe that one lavatory can serve as both the accessible and enhanced reach range lavatory and not require two different lavatories in a toilet room. The faucet of an enhanced reach range lavatory complies with the reach range requirements for accessible lavatories.

Final Action: AS AM AMPC____ D

NOTE: PART II REPRODUCED FOR INFORMATIONAL PURPOSES ONLY – (SEE ABOVE)

E168-07/08, PART II – IPC

Revise table as follows:

IPC TABLE 403.1 (IBC [P] TABLE 2902.1) (SUPP)
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES[a]
(See Section 2902.2 and 2902.3)

NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTIONS	WATER CLOSET (URINALS SEE SECTION 419.2 OF THE INTERNATIONAL PLUMBING CODE)		LAVATORIES[f]		BATHTUBS/SHOWERS	DRINKING FOUNTAIN[e] (SEE SECTION 410.1 OF THE INTERNATIONAL PLUMBING CODE)	OTHER
				MALE	FEMALE	MALE	FEMALE			

(Portions of table not shown remain unchanged)

a. The fixtures shown are based on one fixture being the minimum required for the number of persons indicated or any fraction of the number of persons indicated. The number of occupants shall be determined by this code.
b. Toilet facilities for employees shall be separate from facilities for inmates or patients.
c. A single-occupant toilet room with one water closet and one lavatory serving not more than two adjacent patient sleeping units shall be permitted where such room is provided with direct access from each patient sleeping unit and with provisions for privacy.

d. The occupant load for seasonal outdoor seating and entertainment areas shall be included when determining the minimum number of facilities required.
e. The minimum number of required drinking fountains shall comply with Table 403.1 and Chapter 11 of the *International Building Code*.
f. Lavatories shall comply with Table 403.1 and Chapter 11 of the *International Building Code*.

PART II – IPC
Committee Action: **Disapproved**

Committee Reason: There is concern that the orientation of faucets in this manner will cause confusion as to how to operate the faucet for hot water since the code already requires that hot is to be on the left.

Assembly Action: **None**

E169-07/08
Chapter 35

Proposed Change as Submitted:

Proponent: Dominic Marinelli, United Spinal Association

Revise standard to Chapter 35 as follows:

ICC
ICC/ANSI A117.1-~~03~~ 08 Accessible and Usable Buildings and Facilities

Reason: The A117.1 standard is currently being updated from the 2003 edition. The 2008 edition should be completed and available prior to the end of the IBC's 2007/2008 code development cycle. Therefore the 2009 edition of the IBC should reference the latest edition of the A117 standard which is available.

The proposed updated standard reflects the latest accessibility requirements based upon the work of the A117 committee members and public comments. The updated standard provides for clarification of requirements, coordinates with federal laws and includes revisions which should improve accessibility.

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

Committee Action: **Disapproved**

Committee Reason: The ICC A117.1 is not completed at this time. The standard must be available per ICC policy. The committee does intend to have the 2008 standard available at the final action hearing.

Assembly Action: **None**

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Dominic Marinelli, United Spinal Association, requests Approval as Submitted.

Commenter's Reason: At the time of submission for public comment, the work plan for the A117.1 committee is to be complete the 2008 edition of A117.1 in time for adoption into the 2009 *International Building Code*.

Final Action: AS AM AMPC____ D
