

CTC Meeting #26
April 8 - 9, 2013
BFP-Vertical Openings

The following 2013 Group B changes have been compiled for the above noted CTC Area of Study. Code changes with an (*) indicate CTC sponsored code changes. These changes are intended to serve as the agenda for the CTC in order to establish CTC positions, if any, for the upcoming 2013 Group B Committee Action Hearings.

F217-13*

F218-13

F219-13

F217 – 13

1103.4, 1103.4.1, 1103.4.2, 1103.4.3, 1103.4.4, 1103.4.8 (New)

Proponent: Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee
(cbaldassarra@RJAGroup.com)

Revise as follows:

SECTION 1103
FIRE SAFETY REQUIREMENTS
FOR EXISTING BUILDINGS

1103.4 Vertical openings. Interior vertical ~~shaft~~ openings, including but not limited to *stairways*, elevator hoistways, service and utility shafts, that connect two or more stories of a building, shall be enclosed or protected as specified in Sections 1103.4.1 through 1103.4.7.

1103.4.1 Group I-2 and I-3 occupancies. In Group I-2 and I-3 occupancies, interior vertical openings connecting two or more stories shall be protected with 1-hour fire-resistance-rated construction.

Exception: In Group I-3 occupancies, exit stairways or ramps and exit access stairways or ramps constructed in accordance with Section 408 in the *International Building Code*.

1103.4.2 Three to five stories. In other than Group I-2 and I-3 occupancies, interior vertical openings connecting three to five stories shall be protected by either 1-hour fire-resistance-rated construction or an *automatic sprinkler system* shall be installed throughout the building in accordance with Section 903.3.1.1 or 903.3.1.2.

Exceptions:

1. Vertical opening protection is not required for Group R-3 occupancies.
2. Vertical opening protection is not required for open parking garages ~~and ramps~~.
3. Vertical opening protection for escalators shall be in accordance with Section 1103.4.5, 1103.4.6 or 1103.4.7.
4. Exit access stairways and ramps shall be in accordance with Section 1103.4.8.

1103.4.3 More than five stories. In other than Group I-2 and I-3 occupancies, interior vertical openings connecting more than five stories shall be protected by 1-hour fire-resistance-rated construction.

Exceptions:

1. Vertical opening protection is not required for Group R-3 occupancies.
2. Vertical opening protection is not required for open parking garages ~~and ramps~~.
3. Vertical opening protection for escalators shall be in accordance with Section 1103.4.5, 1103.4.6 or 1103.4.7.
4. Exit access stairways and ramps shall be in accordance with Section 1103.4.8.

1103.4.4 Atriums and covered malls. In other than Group I-2 and I-3 occupancies, interior vertical openings in a covered mall building or a building with an atrium shall be protected by either 1-hour fire-resistance-rated construction or an *automatic sprinkler system* shall be installed throughout the building in accordance with Section 903.3.1.1 or 903.3.1.2.

Exceptions:

1. Vertical opening protection is not required for Group R-3 occupancies.
2. Vertical opening protection is not required for open parking garages ~~and ramps~~.
3. Exit access stairways and ramps shall be in accordance with Section 1103.4.8.

1103.4.5 Escalators in Group B and M occupancies. Escalators creating vertical openings connecting any number of stories shall be protected by either 1-hour fire-resistance-rated construction or an *automatic sprinkler system* in accordance with Section 903.3.1.1 installed throughout the building, with a draft curtain and closely spaced sprinklers around the escalator opening.

1103.4.6 Escalators connecting four or fewer stories. In other than Group B and M occupancies, escalators creating vertical openings connecting four or fewer stories shall be protected by either 1-hour fire-resistance-rated construction or an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2 shall be installed throughout the building, and a draft curtain with closely spaced sprinklers shall be installed around the escalator opening.

1103.4.7 Escalators connecting more than four stories. In other than Group B and M occupancies, escalators creating vertical openings connecting five or more stories shall be protected by 1-hour fire-resistance-rated construction.

1103.4.8 Occupancies other than Group I-2 and I-3. In other than Group I-2 and I-3 occupancies, floor openings containing exit access stairways or ramps that do not comply with one of the conditions listed in this section shall be protected by 1-hour fire-resistance-rated construction.

1. Exit access stairways and ramps that serve, or atmospherically communicate between, only two stories. Such interconnected stories shall not be open to other stories.
2. In Group R-1, R-2 or R-3 occupancies, exit access stairways and ramps connecting four stories or less serving and contained within an individual dwelling unit or sleeping unit or live/work unit.
3. Exit access stairways and ramps in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, where the area of the vertical opening between stories does not exceed twice the horizontal projected area of the stairway or ramp, and the opening is protected by a draft curtain and closely spaced sprinklers in accordance with NFPA 13. In other than Groups B and M occupancies, this provision is limited to openings that do not connect more than four stories.
4. Exit access stairways and ramps within an atrium complying with the provisions of Section 404 of the International Building Code.
5. Exit access stairways and ramps in open parking garages that serve only the parking garage.
6. Exit access stairways and ramps serving open-air seating complying with the exit access travel distance requirements of Section 1028.7 of the International Building Code.
7. Exit access stairways and ramps serving the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, places of religious worship, auditoriums and sports facilities.

Reason: The intent of this code change is to resolve conflicts between the means of egress requirements in chapter 10 of both the IBC and IFC, and chapter 11 of the IFC regarding open exit access stairway and ramp construction. There are a number of building code provisions for new construction in current IBC/IFC chapter 10 Means of Egress that permit exit access stair floor openings without a fire rated enclosure. Many of these permitted floor openings are required to be fire rated by IFC chapter 11 Construction Requirements for Existing Buildings. This sets up a direct conflict not just between the IBC and IFC but between two chapters in the IFC. A building constructed under the 2012 IBC/IFC and in full compliance with chapter 10 of both codes is in violation of IFC sections 1103.4 through 1104.3.7 as soon as the certificate of occupancy issued. Clearly it was not the intent of IFC chapter 11 to contradict chapter 10 of the IFC or IBC. This code change takes the conditions that permit exit access stair and ramp floor openings and places them in IFC chapter 11 so that the requirements of IFC chapter 11 are consistent with IFC chapter 10 and IBC chapter 10.

Specific section changes:

Section 1103.4.1 was modified to specifically address groups I-2 and I-3 and 1103.4.2 through 1103.4.4 was modified to include I-1 and I-4 occupancies. This was done because the specific conditions that allow unenclosed exit access stairs in IBC and IFC chapter 10 differ based on that distinction. In addition the group I-3 exception was added to 1103.4.1 to be consistent with the current exception #10 to IFC/IBC section 1009.3 and the current single exception to IFC/IBC section 1022.2.

Sections 1103.4.2 through 1103.4.4 each had an exception added to refer to new section 1103.4.3 for conditions that allow unenclosed exit access stairs.

Section 1103.4.3 was added to provide all of the current conditions that allow an un-enclosed exit access stair or ramp. All of these conditions are existing from IFC/IBC chapter 10 section 1009.3. Note that in the 2015 IBC and IFC these conditions will be in new IFC/IBC section 1018. It is very important to note that this section and these conditions only apply to exit access stairs and ramps. This new section does not apply to exit stairs. Exit stairs are not exempted from enclosure.

The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/CTC/Pages/default.aspx>. Since its inception in April/2005, the CTC has held twenty five meetings - all open to the public.

Cost Impact: None

F218 – 13

1103.4.1

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care
(john.williams@doh.wa.gov)

Revise as follows:

IFC 1103.4.1 Group I occupancies. In Group I occupancies, interior vertical openings connecting two or more stories shall be protected with 1-hour fire-resistance-rated construction.

Exceptions:

1. In Group I-2 Condition 2 equipped throughout with an automatic sprinkler system, vertical opening connecting two or more stories need not be protected with 1-hour fire-resistance-rated construction where both of the following conditions are met:
 - 1.1. The atrium volume is accounted for in the design of a smoke control system in accordance with Section 909.
 - 1.2 The floor levels within the vertical opening shall contain only low or ordinary fire hazard uses.
2. In Group I-2 Condition 2, where an automatic sprinkler system is installed in accordance with Section 404.6 of the *International Building Code*, glass walls shall be considered to be equivalent to 1-hour fire-resistance-rated construction for purposes of this section. Where glass doors are provided in the glass wall, they shall be either self-closing or automatic-closing.
3. In Group I-2 Condition 2, 1-hour fire-resistance-rated construction is not required where a glass-block wall assembly complying with Section 2110 of the *International Building Code* and having a ¾-hour fire protection rating is provided.

Reason: The intent of this code change is to make the IFC consistent with federal standards that are in place for the maintenance of Group I-2 Condition 2 (hospitals) and to clarify the allowable use and construction of atria in hospitals. This adds language to clarify the fire hazard class allowed in the existing atrium (no higher than ordinary), as opposed to only low hazard class in new. A smoke control system is also acknowledged as a factor when it comes to separation of the atrium, and clarifies that the smoke control system's engineering analysis must account for any spaces open to it.

Glass walls points back to the language in IBC Section 404.6 in an attempt to set that as a minimum, retroactive standard. It is far simpler to address a potential deficiency with addition of a smoke control system or properly installed sprinklers at the glass, rather than reconstructing the walls themselves.

This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 5 open meetings and over 150 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>

Cost impact: This proposal would make the IFC consistent with federal standards that are in place for the maintenance of hospitals, and therefore would not represent an increase in cost.

F219 – 13

1103.4.1

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing self (BFICOCS) (rjd@davidsoncodeconcepts.com)

Revise as follows:

1103.4.1 Group I-3 occupancies. In Group I-3 occupancies, interior vertical openings connecting two or more stories shall be protected with 1-hour fire-resistance-rated construction.

Exceptions:

1. In Group I-3 equipped throughout with an automatic sprinkler system, vertical opening connecting two or more stories need not be protected with 1-hour fire-resistance-rated construction where both of the following conditions are met:
 - 1.1. The atrium and connecting stories are accounted for in the design of a smoke control system in accordance with Section 909.
 - 1.2. The floor levels within the vertical opening shall contain only low or ordinary fire hazard uses.
2. In Group I-3 where an automatic sprnkler system is installed throughout the building and in accordance with Section 404.6 of the *International Building Code*, glass walls shall be considered to be equivalent to 1-hour fire-resistance-rated construction for purposes of this section. Where glass doors are provided in the glass wall, they shall be either self-closing or automatic-closing.
3. In Group I-3, 1-hour fire-resistance-rated construction is not required where a glass- block wall assembly complying with Section 2110 of the *International Building Code* and having a $\frac{3}{4}$ -hour fire protection rating is provided.

Reason: The intent of this code change is to clarify the allowable use and construction of atria in jail. This adds language to clarify the fire hazard class allowed in the existing atrium (no higher than ordinary), as opposed to only low hazard class in new. A smoke control system is also acknowledged as a factor when it comes to separation of the atrium, and clarifies that the smoke control systems engineering analysis must account for any spaces open to it.

Glass walls points back to the language in the IBC in an attempt to set that as a minimum, retroactive standard. It is far simpler to address a potential deficiency with addition of a smoke control system or properly installed sprinklers at glass, rather than reconstructing the walls themselves.

This is intended to coordinate with the Group I-2 provisions.

Cost impact:

