BCAC 4-1 Atriums

IBC: 404.1, 404.9, 404.9.1, 404.9.2, 404.9.3, 404.10, 712.1.7, TABLE 1017.2, 1017.3, 1017.3.1, 1017.3.2, 1017.3.2.1, 1017.3.2.2, 1017.3.2.3, 1028.1.

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2018 International Building Code

Revise as follows:

404.1 General. In other than Group H occupancies, and where permitted by Section 712.1.7, the provisions of Sections 404.1 through 404.10 shall apply to buildings containing atriums. Atriums are not permitted in buildings or structures containing vertical openings defined as “Atriums.” classified as Group H.

404.9 Exit access travel distance. Exit access travel distance for areas open to an atrium shall comply with the requirements of this section. Section 1017.

Delete without substitution:

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

Delete without substitution:

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

Delete without substitution:

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

404.10 Interior exit stairways. Not greater than 50 percent Discharge of interior exit stairways are permitted to egress through an atrium on the level of exit discharge shall be in accordance with Section 1028.1028.

712.1.7 Atriums. In other than Group H occupancies, atriums complying with Section 404 shall be permitted. Atriums in buildings shall comply with Section 404.

**TABLE 1017.2**

EXIT ACCESS TRAVEL DISTANCEa
<table>
<thead>
<tr>
<th>OCCUPANCY</th>
<th>WITHOUT SPRINKLERSYSTEM (feet)</th>
<th>WITH SPRINKLER SYSTEM (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A, E, F-1, M, R, S-1</td>
<td>200e</td>
<td>250b</td>
</tr>
<tr>
<td>I-1</td>
<td>Not Permitted</td>
<td>250b</td>
</tr>
<tr>
<td>B</td>
<td>200</td>
<td>300c</td>
</tr>
<tr>
<td>F-2, S-2, U</td>
<td>300</td>
<td>400c</td>
</tr>
<tr>
<td>H-1</td>
<td>Not Permitted</td>
<td>75d</td>
</tr>
<tr>
<td>H-2</td>
<td>Not Permitted</td>
<td>100d</td>
</tr>
<tr>
<td>H-3</td>
<td>Not Permitted</td>
<td>150d</td>
</tr>
<tr>
<td>H-4</td>
<td>Not Permitted</td>
<td>175d</td>
</tr>
<tr>
<td>H-5</td>
<td>Not Permitted</td>
<td>200c</td>
</tr>
<tr>
<td>I-2, I-3</td>
<td>Not Permitted</td>
<td>200c</td>
</tr>
<tr>
<td>I-4</td>
<td>150</td>
<td>200c</td>
</tr>
</tbody>
</table>

For SI: 1 foot = 304.8 mm.

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

1. Section 402.8: For the distance limitation in malls.
2. Section 404.9: For the distance limitation through an atrium space.
3. Section 407.4: For the distance limitation in Group I-2.
4. Sections 408.6.1 and 408.8.1: For the distance limitations in Group I-3.
5. Section 411.3: For the distance limitation in special amusement buildings.
6. Section 412.6: For the distance limitations in aircraft manufacturing facilities.
7. Section 1006.2.2.2: For the distance limitation in refrigeration machinery rooms.
8. Section 1006.2.2.3: For the distance limitation in refrigerated rooms and spaces.
9. Section 1006.3.3: For buildings with one exit.
10. Section 1017.2.2: For increased distance limitation in Groups F-1 and S-1.
11. Section 1029.7: For increased limitation in assembly seating.
12. Section 3103.4: For temporary structures.
13. Section 3104.9: For pedestrian walkways.

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

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

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

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

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

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

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

**Add new text as follows:**

**1017.3.2 Atriums.** Exit access travel distance for areas open to an atrium shall comply with the requirements of this section.

**1017.3.2.1 Egress not through the atrium.** Where required access to the exits is not through the atrium, exit access travel distance shall comply with Section 1017.2.

**1017.3.2.2 Exit access travel distance at the level of exit discharge.** Where the path of egress travel is through an atrium space, exit access travel distance at the level of exit discharge shall be determined in accordance with Section 1017.2.

**1017.3.2.3 Exit access travel distance at other than the level exit discharge.** Where the path of egress travel is not at the level of exit discharge from the atrium, that portion of the total permitted exit access travel distance that occurs within the atrium shall be not greater than 200 feet (60 960 mm).

**Revise as follows:**
1028.1 General. Exits shall discharge directly to the exterior of the building. The exit discharge shall be at grade or shall provide a direct path of egress travel to grade. The exit discharge shall not reenter a building. The combined use of Exceptions 1 and 2 shall not exceed 50 percent of the number and minimum width or required capacity of the required exits.

Exceptions:

1. Not more than 50 percent of the number and minimum width or required capacity of interior exit stairways and ramps is permitted to egress through areas, including atriums, on the level of discharge provided that all of the following conditions are met:

1.1. Discharge of interior exit stairways and ramps shall be provided with a free and unobstructed path of travel to an exterior exit door and such exit is readily visible and identifiable from the point of termination of the enclosure.

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

1.3. The egress path from the interior exit stairway and ramp on the level of exit discharge is protected throughout by an approved automatic sprinkler system. Portions of the level of exit discharge with access to the egress path shall be either equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, or separated from the egress path in accordance with the requirements for the enclosure of interior exit stairways or ramps.

1.4. Where a required interior exit stairway or ramp and an exit access stairway or ramp serve the same floor level and terminate at the same level of exit discharge, the termination of the exit access stairway or ramp and the exit discharge door of the interior exit stairway or ramp shall be separated by a distance of not less than 30 feet (9144 mm) or not less than one-fourth the length of the maximum overall diagonal dimension of the building, whichever is less. The distance shall be measured in a straight line between the exit discharge door from the interior exit stairway or ramp and the last tread of the exit access stairway or termination of slope of the exit access ramp.

2. Not more than 50 percent of the number and minimum width or required capacity of the interior exit stairways and ramps is permitted to egress through a vestibule provided that all of the following conditions are met:

2.1. The entire area of the vestibule is separated from areas below by construction conforming to the fire-resistance rating of the interior exit stairway or ramp enclosure.
Cost Impact: The code change proposal will not increase or decrease the cost of construction.

The code change proposal will not increase or decrease the cost of construction. This is an editorial reorganization to place requirements in a more appropriate location.

Reason:
The purpose of this proposal is to relocate portions of the Section 404 atrium requirements to other appropriate portions of the IBC. As defined in Chapter 2, an atrium is a particular type of a vertical opening in a building or structure, but not the only method permitted by Chapter 7 for dealing with a vertical opening. A proposal last cycle (G51-15) attempted to relocate the entire Section 404 provisions into Section 712. While the proposal was disapproved by a vote of 8-6, there was support expressed for considering a relocation of these provisions if clarifications to the existing text were provided and at least a minimum set of provisions be retained in Chapter 4 as a starting point for addressing requirements specific to certain building features. This proposal retains Section 404 but makes some targeted relocations. In all cases, pointers are left in Section 404 so the link is not totally lost and code users still have Section 404 as a guide to all of the considerations for atriums. Requirements relative to exit access travel distance and interior exit stair discharge are also moved to Section 1017 and Section 1028 respectively. While these provisions perhaps appear specific to atriums, they are not entirely self-contained and clearly need to be evaluated as part of the general travel distance and exit discharge requirements for the building. For exit access travel distance, the atrium-specific provisions are added under the exiting Section 1017.3 on measurement of exit access travel distance. For exit discharge, a reference to atriums is added under Exception #1 of Section 1028.1. Finally, the charging language is clarified. A circular reference between Section 404 and Section 712.1 is removed. The existing language, especially in Section 404, also makes it vague as to whether an atrium is allowed in a Group H building or structure, versus another method of treating a vertical opening. The implication (especially in Section 712.1) is that such an atrium is not permitted. The charging

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

2.3. The area is separated from the remainder of the level of exit discharge by a fire partition constructed in accordance with Section 708.

Exception: The maximum transmitted temperature rise is not required.

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

3. Horizontal exits complying with Section 1026 shall not be required to discharge directly to the exterior of the building.
language in both sections is revised accordingly. In addition, an exception is added permitting a vertical opening meeting the definition of an atrium to be constructed in accordance with any of the other methods for treating a vertical opening (e.g. a shaft enclosure per Section 712.1.1 or a generic two-story opening per Section 712.1.9).

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2017 the BCAC has held 3 open meetings. In addition, there were numerous Working Group meetings and conference calls for the current code development cycle, which included members of the committee as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: https://www.icc SAFE.org/codes-tech-support/codes/code-development-process/building-code-action-committee-bcac.