

## Section 707 *Fire Barriers*

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A common function of a fire barrier is to totally isolate one portion of a floor level from another through the use of fire-resistance-rated walls and opening protectives. Fire-resistance-rated horizontal assemblies are also often used in conjunction with fire barriers in multistory buildings in order to isolate areas vertically. This section identifies the different uses for fire barriers, as well as the method in which fire barriers are to be constructed.

**707.3 Fire-resistance rating.** A fire barrier shall be used to provide the necessary separation for the following building elements or conditions:

1. Shaft enclosure. The minimum required degree of fire-resistance for fire barriers used to create a shaft enclosure is based primarily on the number of stories connected by the enclosure. A minimum 2-hour fire-resistance rating is mandated where four or more stories are connected, with only a 1-hour rating required where connecting only two or three stories. In all cases, the rating of the fire barriers creating a shaft enclosure must equal or exceed that of the floor assembly that is penetrated by the enclosure.
2. Interior exit stairway construction. The separation between an interior exit stairway (stair enclosure) and the remainder of the building shall be accomplished with fire barriers having either a 1- or 2-hour fire-resistance rating, as required by Section 1022.2. Similar enclosures are required for interior exit ramps.
3. Exit access stairway enclosures. Where exit access stairways are required to be enclosed by Section 1009.3, the enclosure shall include the use of fire barriers.
4. Exit passageway. An exit passageway must be isolated from the remainder of the building by minimum 1-hour fire-resistance-rated fire-barrier walls. Where horizontal enclosure is also required, minimum 1-hour fire-resistance-rated horizontal assemblies must also be used to totally isolate the exit passageway. Where an exit passageway is a continuation of an interior exit stairway, it must, at a minimum, maintain the fire-resistance rating of the stairway enclosure.
5. Horizontal exit. A minimum 2-hour fire-resistance-rated fire barrier may be used to create a horizontal exit when in compliance with all of the other provisions of Section 1025. The fire barrier creates protected compartments where occupants of the building can travel to escape the fire incident.
6. Atrium. Unless a complying glazing system or  $\frac{3}{4}$ -hour glass block construction is used, minimum 1-hour fire barriers are required when isolating an atrium from surrounding spaces.
7. Incidental uses. Table 509 indicates the required separation or protection required for special hazard areas such as waste and linen collection rooms, laboratories, and furnace rooms. Where a 1- or 2-hour fire-resistance-rated wall is required, it shall be a fire barrier.
8. Control areas. Table 414.2.4 identifies the minimum required fire-resistance rating for fire barriers used to create control areas in buildings housing hazardous materials. A minimum rating of 1 hour is mandated for separating control areas located on the first three floor levels above grade plane, whereas minimum 2-hour fire barriers are required for control area separations on all floor levels above the third level.

9. Separated occupancies. The separation of dissimilar occupancies in the same building is accomplished by fire barriers. Table 508.4 is used to determine the required fire-resistance rating of the required fire barriers, ranging from 1 hour through 4 hours.
10. Fire areas. Where a building is divided into fire areas by fire barriers in order to not exceed the limitations of Section 903.2 for requiring an automatic sprinkler system, the minimum required fire-resistance ratings of the fire barriers are set forth in Table 707.3.10. Ranging from a minimum of 1 hour to a maximum of 4 hours, the fire-resistive requirements are based solely on the occupancy classification of the fire areas. The provisions are applicable to both single-occupancy and mixed-occupancy conditions. See the discussion on Section 901.7 for further information.

Note also that fire barriers are required as separation elements in other miscellaneous locations identified by the code, such as stage accessory areas (Section 410.5) and flammable finish spray rooms (Section 416.2). Throughout the code, references are made to fire barriers as the method of providing the appropriate fire-resistance-rated separation intended. In addition, many of the other *International Codes* also address the use of fire barriers to create protected areas.

**Continuity.** Fire barriers must begin at the floor and extend uninterrupted to the floor or roof deck above. Where there is a concealed space above a ceiling, the fire barrier must continue through the above-ceiling space. See Figure 707-1. Fireblocking, required only in combustible construction, must be installed at every floor level if the fire barrier contains hollow vertical spaces. The intent of a fire barrier is to provide a continuous separation so as to completely isolate one area from another. As with many other fire-resistance-rated elements, the supporting construction must be of an equivalent rating to the fire barrier supported. A reduction relates to 1-hour incidental use separations in nonrated construction.

**707.5**

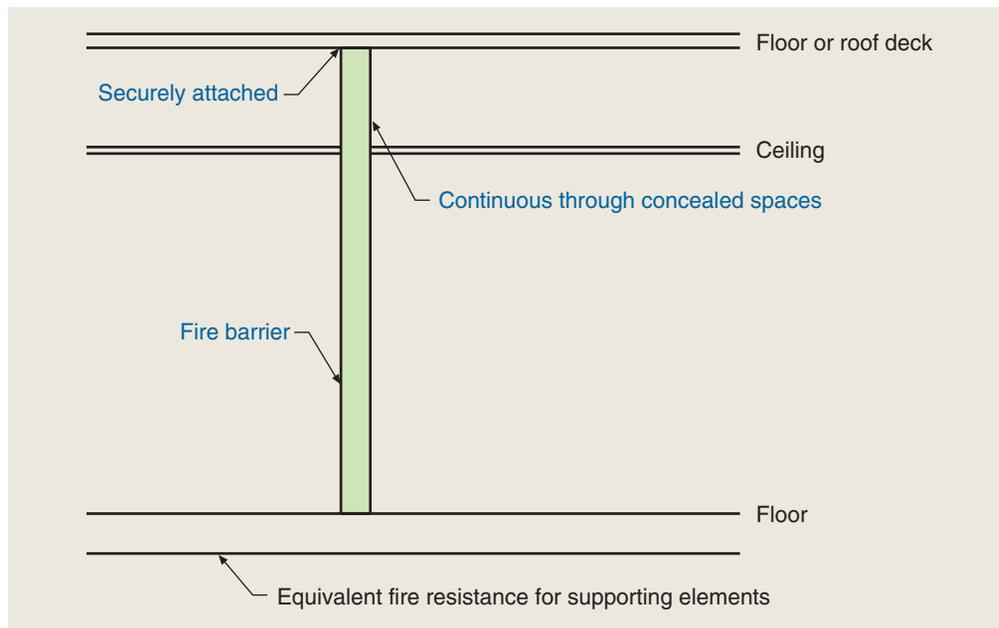


Figure 707-1  
**Fire barrier continuity.**

**Openings.** The provisions of Section 716 regulate the protection of openings in fire barriers. The fire-protection ratings mandated for fire-barrier openings in Tables 716.5 and 716.6 vary depending on the fire-resistance rating of the fire barrier as well as its purpose. The required rating may be as little as  $\frac{3}{4}$  hour to as much as 3 hours.

**707.6**

**707.9 Voids at intersections.** It is not uncommon for a void to be created at the joint between a fire barrier and the floor or roof deck above. Where the joint occurs at a fire-resistance-rated floor or roof deck, Section 715.1 mandates that the joint be protected by an approved fire-resistant joint system. Section 715.1 is also applicable where the joint occurs between a fire barrier and a nonfire-rated floor. Section 707.9 is only intended to address those situations where the roof assembly is not fire-resistance rated. The void need only be protected with an approved material that is securely installed and capable of retarding the passage of fire and hot gases.