

SECTION 705 - EXTERIOR WALLS & INTERIOR LOAD BEARING WALLS

EXTERIOR WALL - A wall, bearing or nonbearing, that is used as an enclosing wall for a building, other than a fire wall, and that has a slope of 60 degrees or greater with the horizontal plane.

WALL, LOAD-BEARING. Any wall meeting either of the following classifications:

1. Any metal or wood stud wall that supports more than 100 pounds per linear foot (1459 N/m) of vertical load in addition to its own weight.
2. Any masonry or concrete wall that supports more than 200 pounds per linear foot (2919 N/m) of vertical load in addition to its own weight.
 - ✓ Construction Type (Table 601 / A-Protected or B-Unprotected)
 - ✓ Fire Separation Distance (Table 602 / Buildings and Property Lines)
 - ✓ Support fire-resistance-rated construction

WALL, NONLOAD-BEARING. Any wall that is not a load-bearing wall.

SECTION 706 - FIRE WALLS

FIRE WALL - A fire-resistance-rated wall having protected openings, which restricts the spread of fire and extends continuously from the foundation to or through the roof, with sufficient structural stability under fire conditions to allow collapse of construction on either side without collapse of the wall.

- ✓ Separating Buildings
- ✓ Party Walls

Structural Stability - Fire walls shall be designed and constructed to allow collapse of the structure on either side without collapse of the wall under fire conditions. Fire walls designed and constructed in accordance with NFPA 221 shall be deemed to comply with this section.

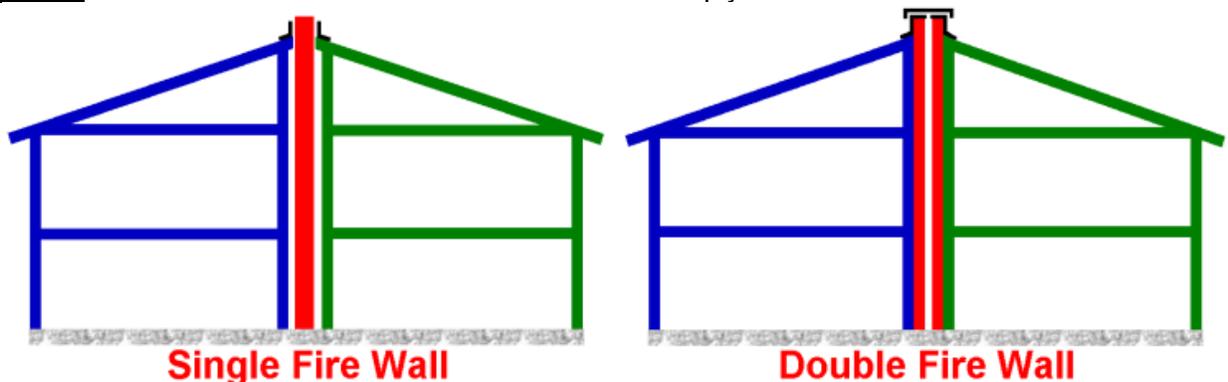
Horizontal Continuity - Fire walls shall be continuous from exterior wall to exterior wall and shall extend not less than 18 inches beyond the exterior surface of exterior walls.

Vertical Continuity - Fire walls shall extend from the foundation to a termination point not less than 30 inches above both adjacent roofs.

Openings - Each opening through a fire wall shall be protected in accordance with Section 716.5 and shall not exceed 156 square feet. The aggregate width of openings at any floor level shall not exceed 25 percent of the length of the wall.

Penetrations - Penetrations of fire walls shall comply with Section 714.

Joints - Joints made in or between fire walls shall comply with Section 715.



SECTION 707 - FIRE BARRIERS

FIRE BARRIER - A fire-resistance-rated wall assembly of materials designed to restrict the spread of fire in which continuity is maintained.

- ✓ Shaft Enclosures
- ✓ Interior Exit Stairway & Ramp Construction
- ✓ Enclosures for Exit Access Stairways
- ✓ Exit Passageway
- ✓ Horizontal Exit
- ✓ Atriums
- ✓ Incidental Uses
- ✓ Control Areas
- ✓ Separated Occupancies
- ✓ Fire Areas

Continuity - Fire barriers shall extend from the top of the foundation or floor/ceiling assembly below to the underside of the floor or roof sheathing, slab or deck above and shall be securely attached thereto. Such fire barriers shall be continuous through concealed space, such as the space above a suspended ceiling.

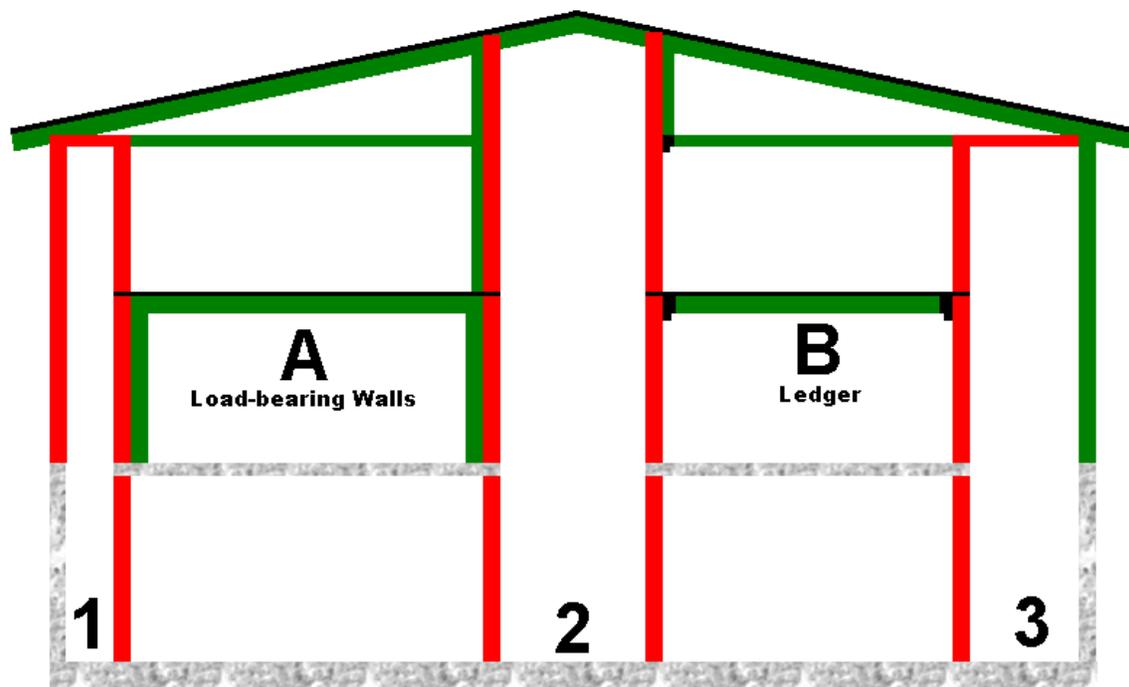
Openings - Openings in a fire barrier shall be protected in accordance with Section 716. Openings shall be limited to a maximum aggregate width of 25 percent of the length of the wall, and the maximum area of any single opening shall not exceed 156 square feet.

Openings in enclosures for exit access stairways and ramps, interior exit stairways and ramps and exit passageways shall also comply with Sections 1019, 1023.4 and 1024.5, respectively.

Prohibited Penetrations - Penetrations into enclosures for exit access stairways and ramps, interior exit stairways and ramps, and exit passageways shall be allowed only where permitted by Sections 1019, 1023.5 and 1024.6, respectively.

Penetrations - Penetrations of fire barriers shall comply with Section 714.

Joints - Joints made in or between fire barriers, and joints made at the intersection of fire barriers with underside of a fire-resistance-rated floor or roof sheathing, slab or deck above, and the exterior vertical wall intersection shall comply with Section 715.



Fire Barrier Walls

SECTION 713 - SHAFT ENCLOSURES

Fire-resistance Rating - Shaft 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.

Continuity - Shaft enclosures shall be constructed as fire barriers in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both, and shall have continuity in accordance with Section 707.5 for fire barriers or Section 711.2.2 for horizontal assemblies, as applicable.

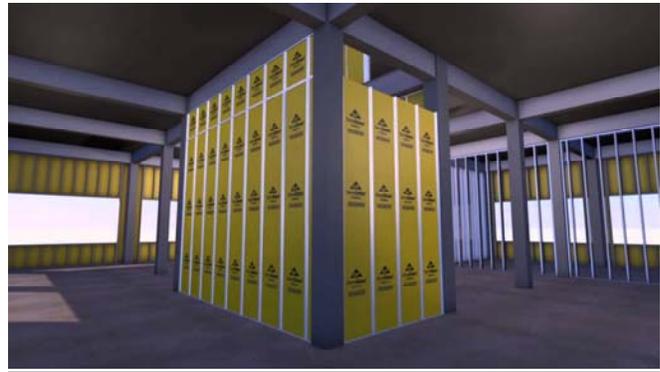
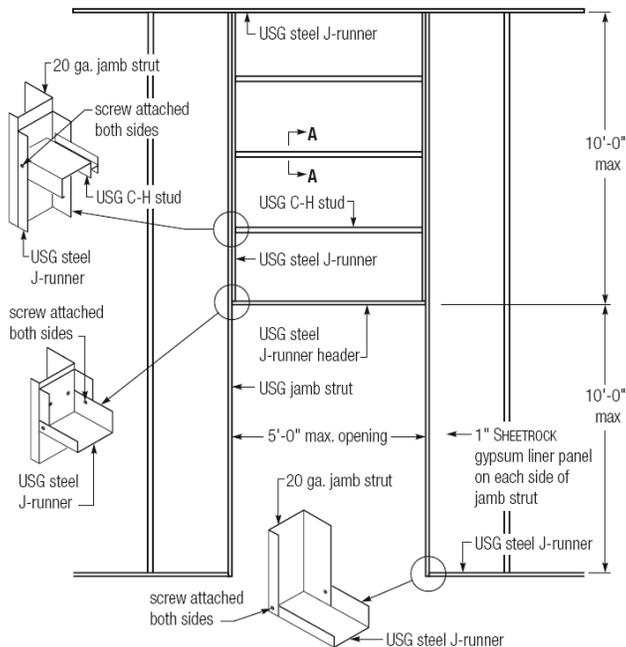
Openings - Openings in a shaft enclosure shall be protected in accordance with Section 716 as required for fire barriers. Doors shall be self- or automatic-closing by smoke detection.

Prohibited Openings - Openings other than those necessary for the purpose of the shaft shall not be permitted in shaft enclosures.

Penetrations - Penetrations in a shaft enclosure shall be protected in accordance with Section 714 as required for fire barriers.

Joints - Joints in a shaft enclosure shall comply with Section 715.

Shafts must be enclosed at top & bottom equal to the required rating & comply with 713.11 & 713.12.



SECTION 708 - FIRE PARTITIONS

FIRE PARTITION - A vertical assembly of materials designed to restrict the spread of fire in which openings are protected.

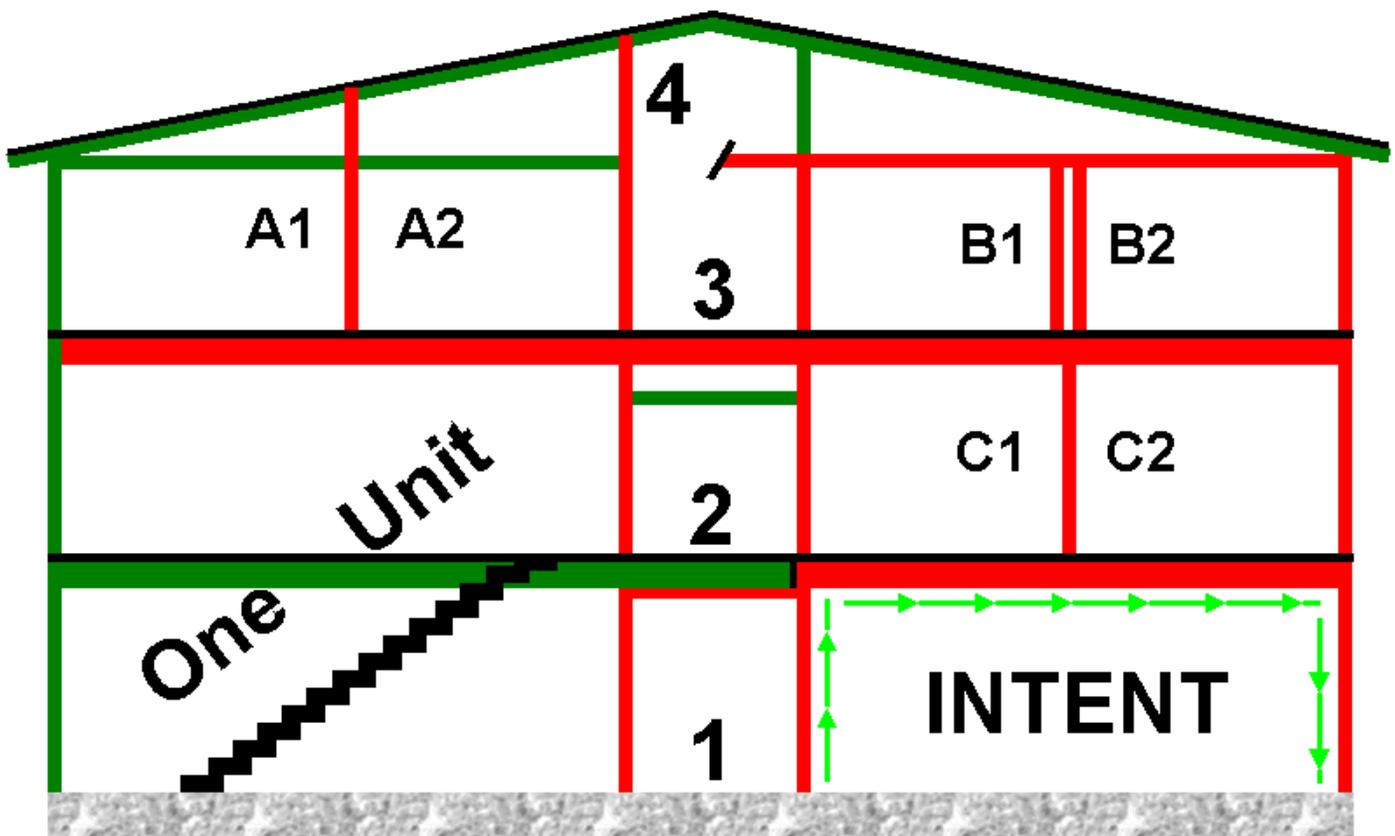
- ✓ Separation walls for Groups I-1, R-1, R-2 and R-3.
- ✓ Walls Separating Tenant Spaces
- ✓ Corridor Walls
- ✓ Elevator Lobby Separation
- ✓ Egress Balconies

Continuity - Fire partitions shall extend from the top of the foundation or floor/ceiling assembly below to the underside of the floor or roof sheathing, slab or deck above or to the fire-resistance-rated floor/ceiling or roof/ceiling assembly above.

Openings - Openings in a fire partition shall be protected in accordance with Section 716.

Penetrations - Penetrations of fire partitions shall comply with Section 714.

Joints - Joints made in or between fire partitions shall comply with Section 715.



Fire Partition Walls

SECTION 709 - SMOKE BARRIERS

SMOKE BARRIER - A continuous membrane, either vertical or horizontal, such as a wall, floor or ceiling assembly, that is designed and constructed to restrict the movement of smoke.

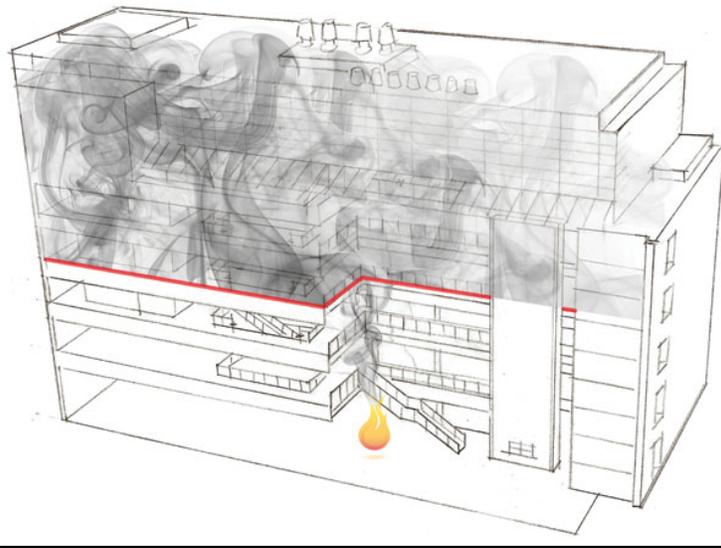
Fire-resistance Rating - A 1-hour fire-resistance rating is required for smoke barriers.

Continuity - Smoke barriers shall form an effective membrane continuous from the top of the foundation or floor/ceiling assembly below to the underside of the floor or roof sheathing, deck or slab above, including continuity through concealed spaces, such as those found above suspended ceilings, and interstitial structural and mechanical spaces.

Openings - Openings in a smoke barrier shall be protected in accordance with Section 716.

Penetrations - Penetrations of smoke barriers shall comply with Section 714.

Joints - Joints made in or between smoke barriers shall comply with Section 715.



SECTION 710 - SMOKE PARTITIONS

Fire-resistance Rating - Unless required elsewhere in the code, smoke partitions are not required to have a fire-resistance rating.

Continuity - Smoke partitions shall extend from the top of the foundation or floor below to the underside of the floor or roof sheathing, deck or slab above or to the underside of the ceiling above where the ceiling membrane is constructed to limit the transfer of smoke.

Openings - Openings in smoke partitions shall comply with the following:

Windows - Windows in smoke partitions shall be sealed to resist the free passage of smoke or be automatic-closing upon detection of smoke.

Doors - Doors in smoke partitions shall comply with Sections 710.5.2.1 through 710.5.2.3.

Louvers - Doors in smoke partitions shall not include louvers.

Self- or Automatic-closing Doors - Where required elsewhere in the code, doors in smoke partitions shall be self- or automatic-closing by smoke detection

SECTION 711 - FLOOR AND ROOF ASSEMBLIES

- ✓ Separating Mixed Occupancies
- ✓ Separating Fire Areas
- ✓ Dwelling Units and Sleeping Units
- ✓ Separating Smoke Compartments
- ✓ Separating Incidental Uses
- ✓ Other Separations

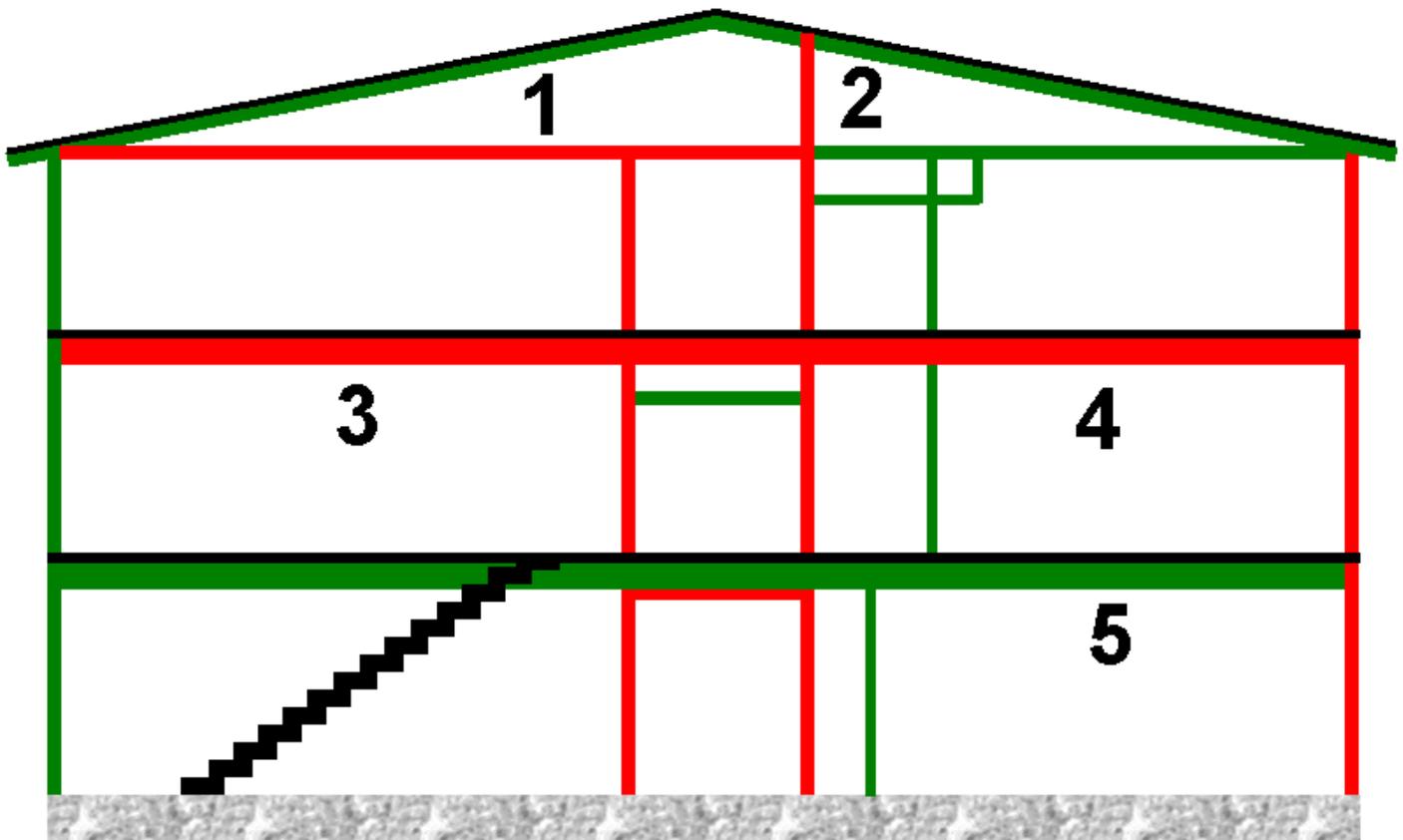
Continuity - Assemblies shall be continuous without vertical openings, except as permitted by this section and Section 712.

Penetrations - Penetrations, concealed and unconcealed, shall be permitted where protected in accordance with Section 714.

Openings - Openings in a floor and roof assemblies shall be protected in accordance with Section 712.

NOTE: Non fire-Resistance-Rated Floor and Roof Assemblies

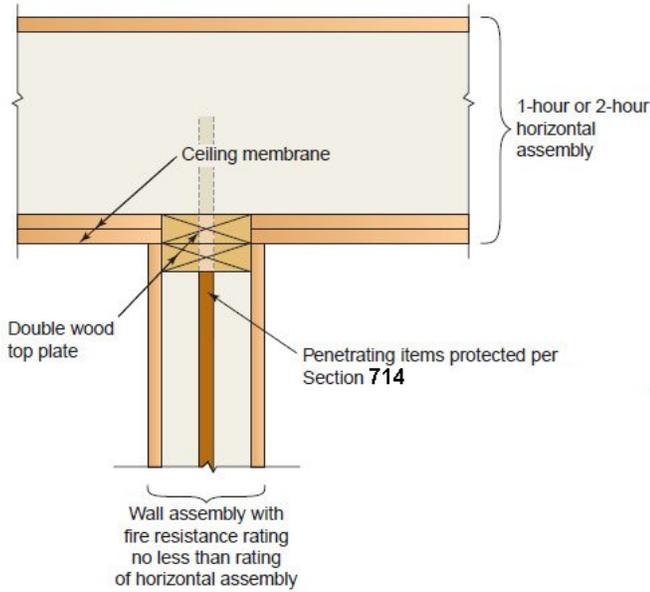
Continuity - Assemblies shall be continuous without vertical openings, except as permitted by Section 712.



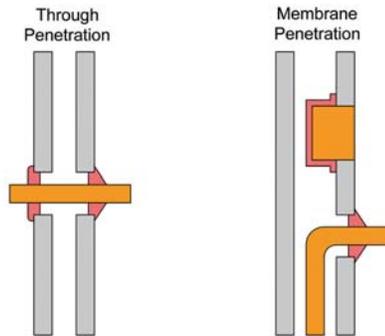
Floor / Ceiling & Roof Assemblies

SECTION 714 - PENETRATIONS

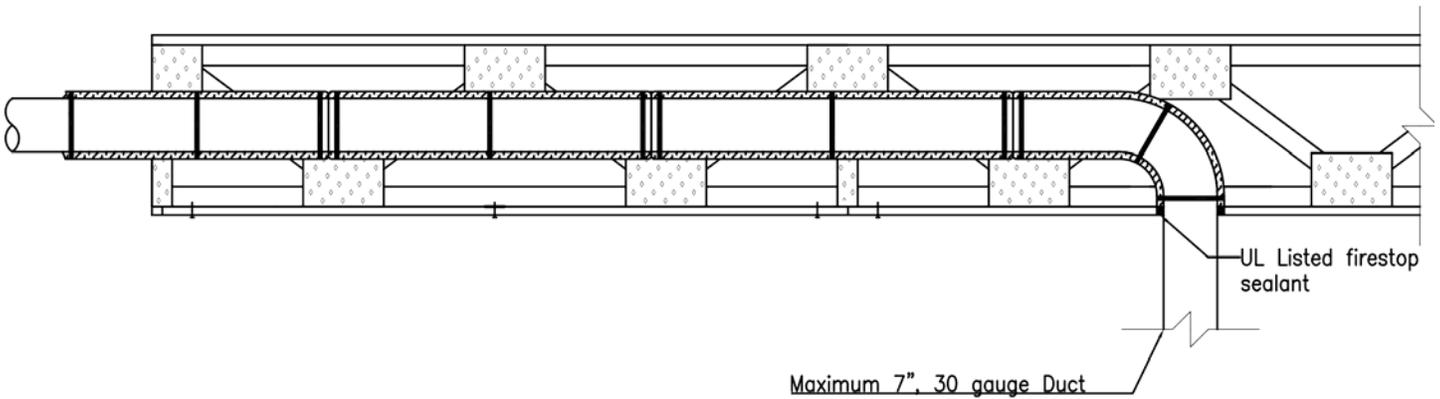
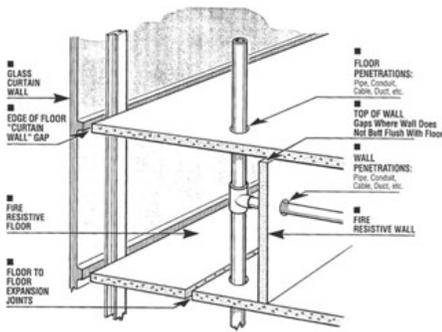
Fire-Resistance-Rated Walls - Penetrations into or through fire walls, fire barriers, smoke barrier walls and fire partitions shall comply with Sections 714.3.1 through 714.3.3. Penetrations in smoke barrier walls shall also comply with Section 714.4.4.



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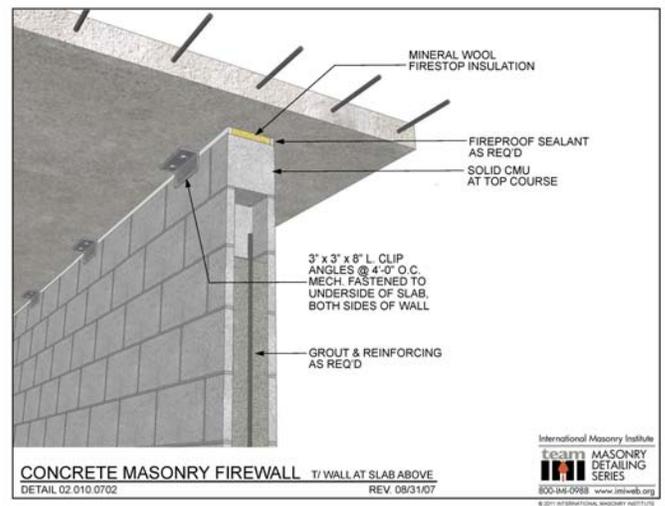
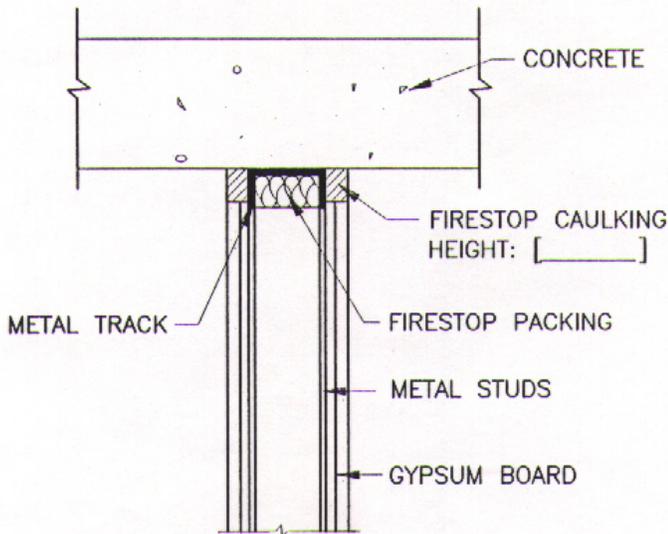
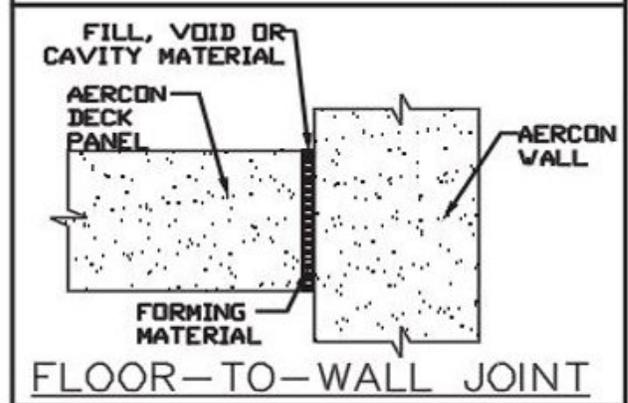
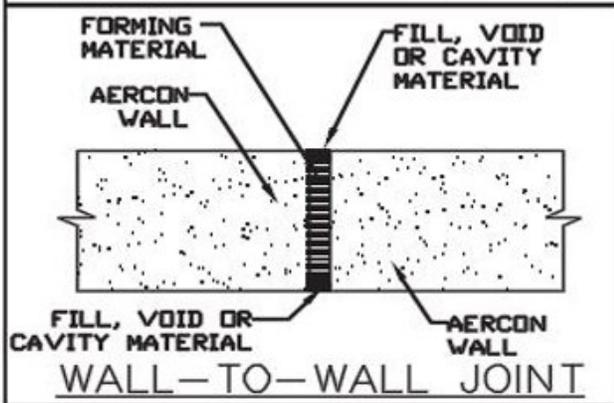
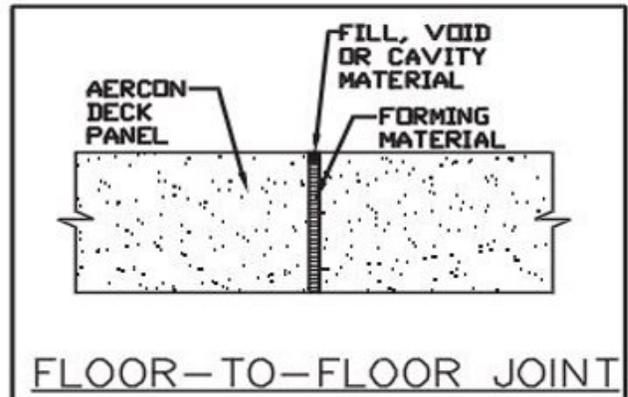
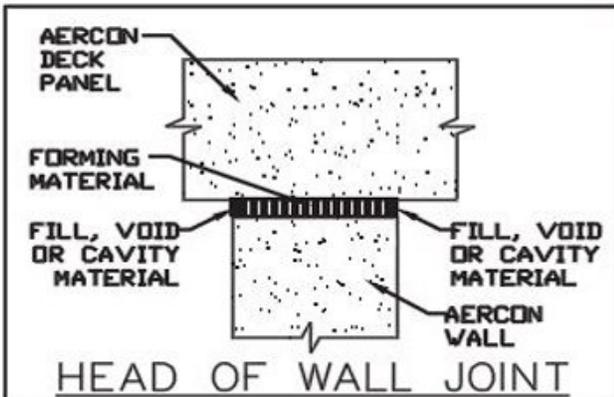


Horizontal assembly continuity at fire-rated wall

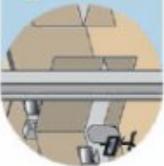


SECTION 715 - FIRE-RESISTANT JOINT SYSTEMS

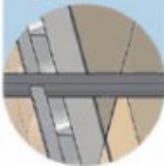
Joints - Joints installed in or between fire-resistance-rated walls, floor or floor/ceiling assemblies and roofs or roof/ceiling assemblies shall be protected by an approved fire-resistant joint system designed to resist the passage of fire for a time period not less than the required fire-resistance rating of the wall, floor or roof in or between which the system is installed.



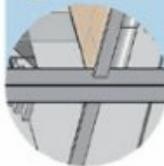
A Fire-resistant intumescent coatings – structural steel



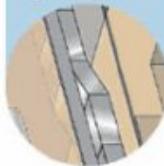
B Fire-resistant sprayed coatings – structural steel



C Fire-resistant boards – structural steel



D Fire-rated/smoke control extract ductwork



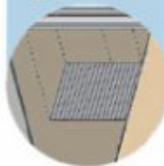
E Fire-stopping penetration seals



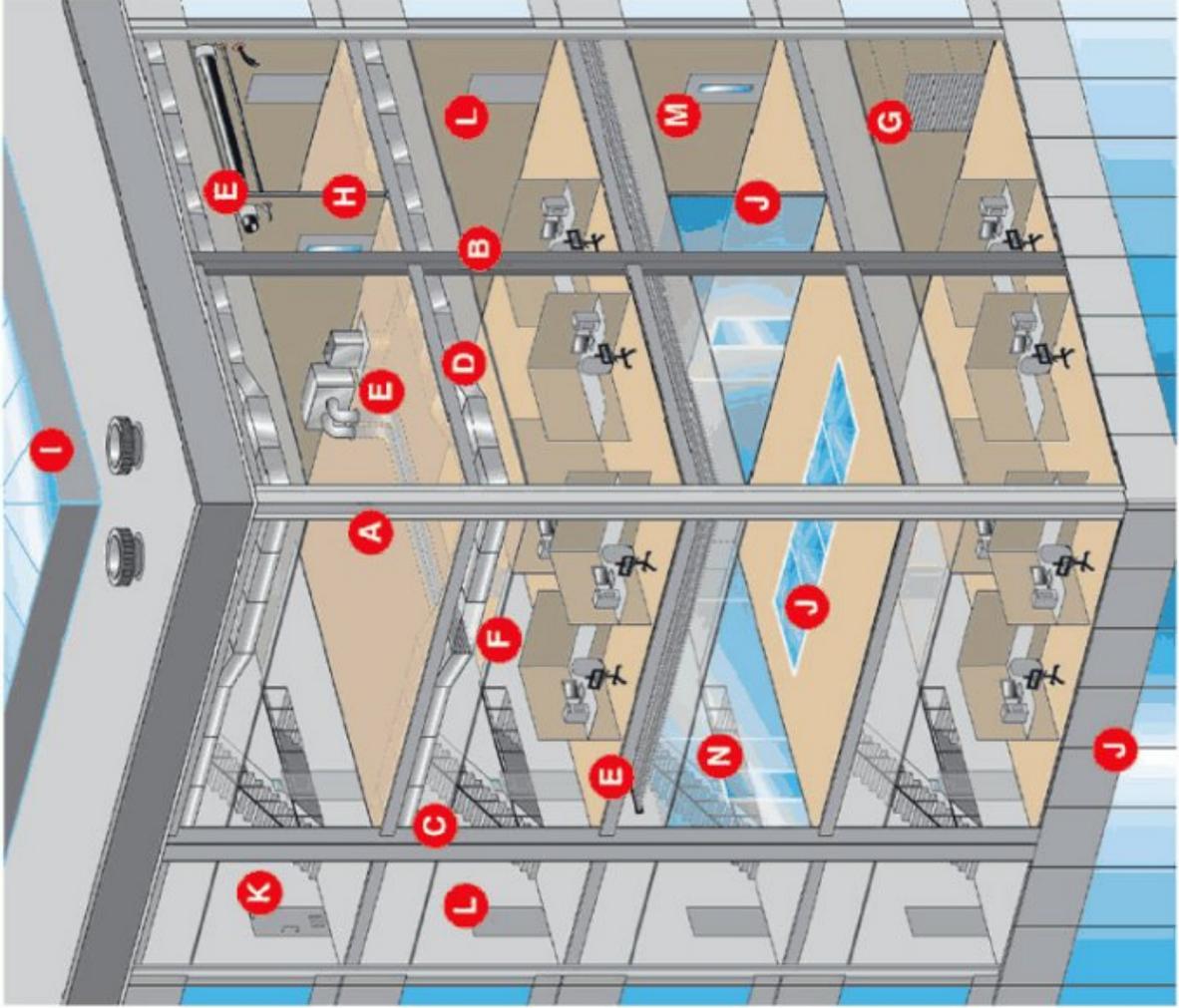
F Fire-rated dampers/ smoke control



G Fire-rated industrial doors/ shutters



IMPORTANT ASPECTS OF PASSIVE FIRE PROTECTION



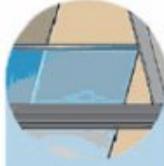
H Fire-rated partitions



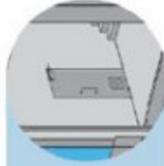
I Fire-resistant roof glazing



J Fire resistant glass walls/ floors/facades



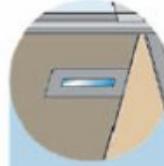
K Fire-resistant building hardware



L Fire-resistant and smoke control doors



M Fire-resistant glazed doors



N Fire-resistant glass doors

