



A'24 MN

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Is it a Fire Wall?

Probably not



Chapter 7 General Scope

701.1 Scope.

The provisions of this chapter shall govern the materials, systems and assemblies used for *structural fire resistance* and fire-resistance-rated construction separation of adjacent spaces to safeguard against the spread of fire and smoke within a *building* and the spread of fire to or from *buildings*.

“Fire Wall” types

Section 706	FIRE WALLS
Section 707	FIRE BARRIERS
Section 708	FIRE PARTITIONS
Section 709	SMOKE BARRIERS
Section 710	SMOKE PARTITIONS
Section 705	EXTERIOR WALLS

Fire Wall: What exactly is it?

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

Fire Wall: How do you build one?

706.1 General

Fire walls shall be constructed in accordance with sections 706.2 through 706.11

The extent and location of fire walls shall provide a complete separation

Firewalls that provide separation of occupancies that are required to be separated by fire barriers need to meet the requirements of both.

706.2: 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.



Structural independence.

AFTER



Photo provided by D. Schoeppner



Photo provided by D. Schoeppner

706.3: Materials

Fire walls shall be of any approved **noncombustible** materials

Exception: Type V construction

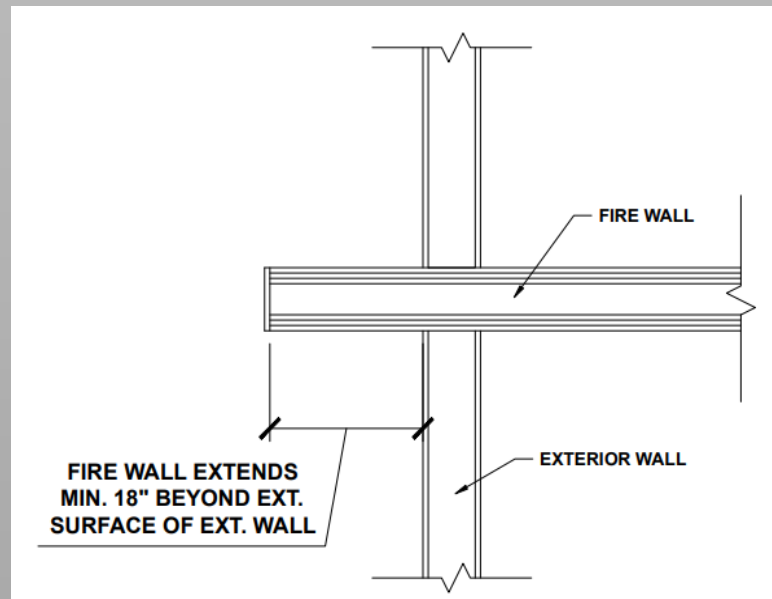
706.4: Fire Resistance Rating

Occupancy Group	Rating in Hours
A, B, E, H-4, I, R-1, R-2, U	3 ^a
F-1, H-3 ^b , H-5, M, S-1	3
H-1, H-2	4 ^b
F-2, S-2, R-3, R-4	2

- a. In Type II or V construction, walls shall be permitted to have a 2-hour fire-resistance rating.
- b. For Group H-1, H-2 or H-3 buildings, also see Sections 415.7 and 415.8.

706.5: Horizontal Continuity

Fire walls shall be continuous from exterior wall to exterior wall and shall extend 18" beyond the exterior surface of the exterior wall



706.5: Horizontal Continuity

Exceptions to the 18" extension:

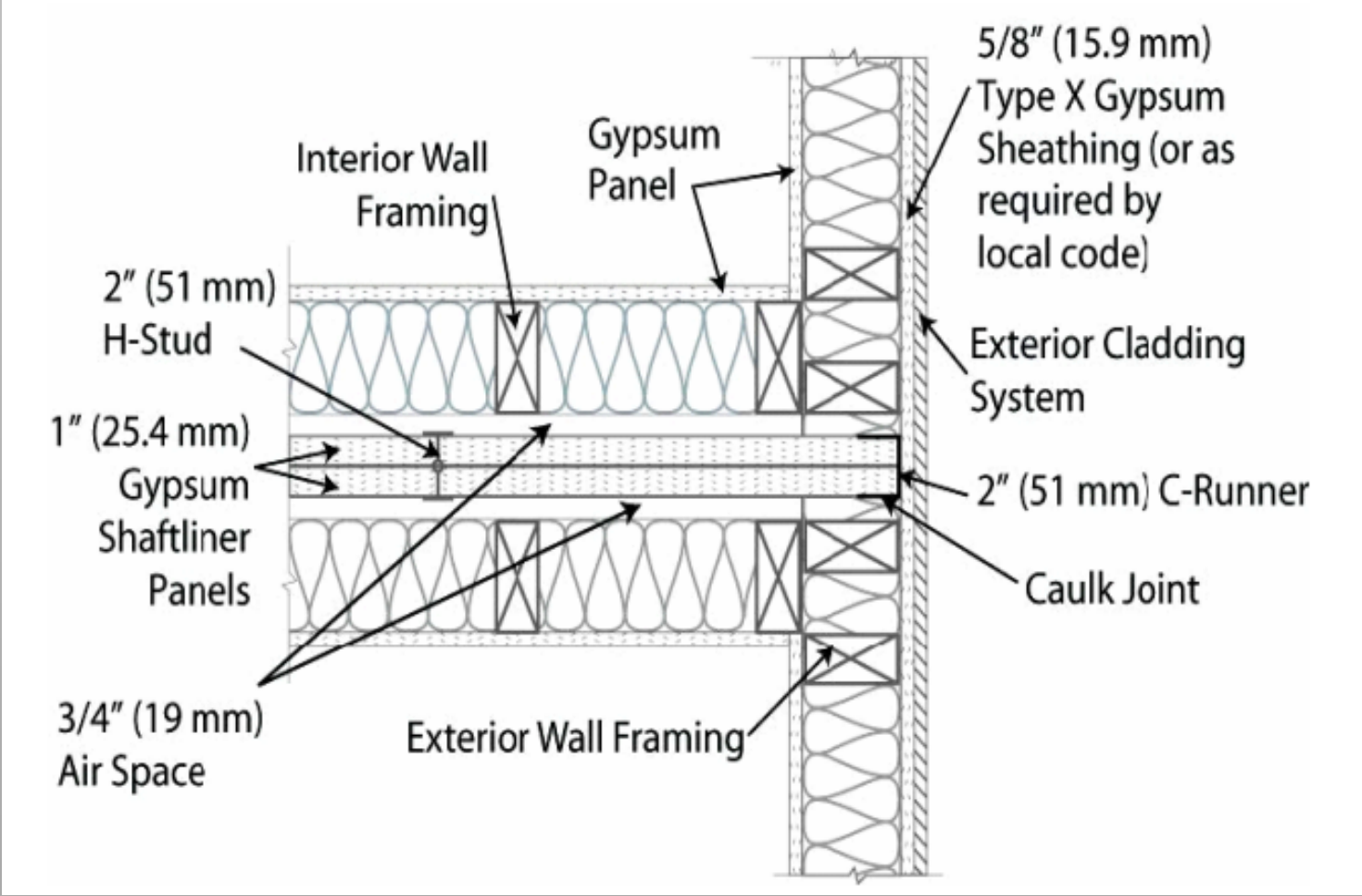
May terminate at the interior surface of **combustible** exterior sheathing or siding if the exterior wall is at least 1 hour rated for a horizontal distance of not less than 4 feet on both sides of the fire wall. Openings within that 4 feet shall be protected by a rating of not less than $\frac{3}{4}$ hour.

706.5: Horizontal Continuity

Exceptions to the 18” extension:

May terminate at the interior surface of **noncombustible** exterior sheathing or siding provided such sheathing extends a horizontal distance of not less than 4 feet on both sides of the fire wall.

706.5: Horizontal Continuity



706.5: Horizontal Continuity

Exceptions to the 18” extension:

May terminate at the interior surface of **noncombustible** exterior sheathing where the building on each side of the fire wall is provided with an NFPA 13 or 13R sprinkler system

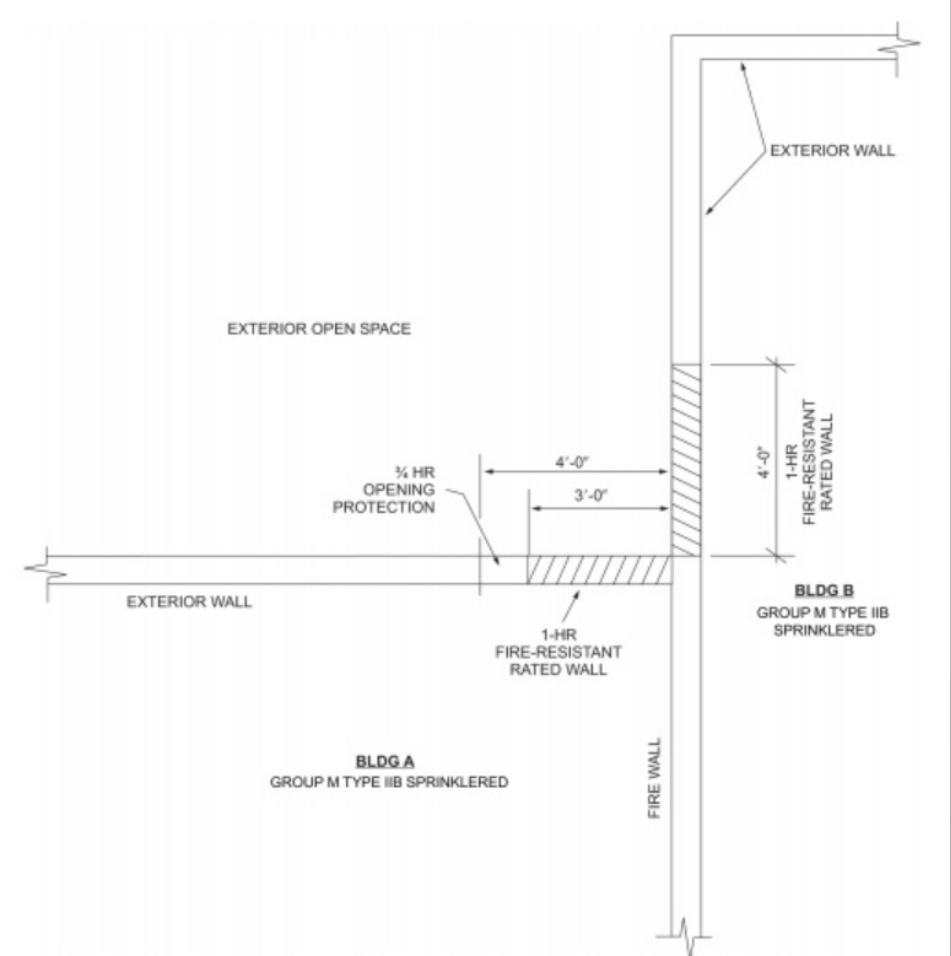
706.5.1: Exterior Walls

Where a fire wall meets an exterior wall that is NOT a straight line, the exterior walls must comply with one of the following two requirements.

706.5.1: Exterior Walls

The *exterior walls* on both sides of the *fire wall* shall have a 1-hour *fire-resistance rating* with $\frac{3}{4}$ -hour protection where opening protection is required by Section 705.8 (exterior opening protection table). The *fire-resistance rating* of the *exterior wall* shall extend not less than 4 feet on each side of the intersection of the *fire wall* to *exterior wall*.

706.5.1: Exterior Walls

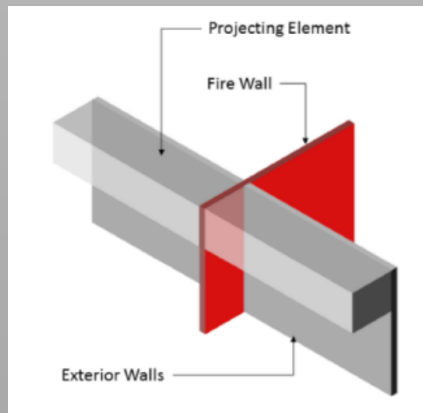


706.5.1: Exterior Walls

Buildings or spaces on both sides of the intersecting *fire wall* shall assume to have an imaginary *lot line* at the *fire wall* and extending beyond the exterior of the *fire wall*. The location of the assumed line in relation to the *exterior walls* and the *fire wall* shall be such that the *exterior wall* and opening protection meet the requirements set forth in Sections 705.5 and 705.8. (exterior wall and openings)

706.5.2: Horizontal Projections

*Fire walls shall extend to the outer edge of horizontal projecting elements such as balconies, roof overhangs, canopies, marquees and similar projections that are within 4 feet of the *fire wall*.*



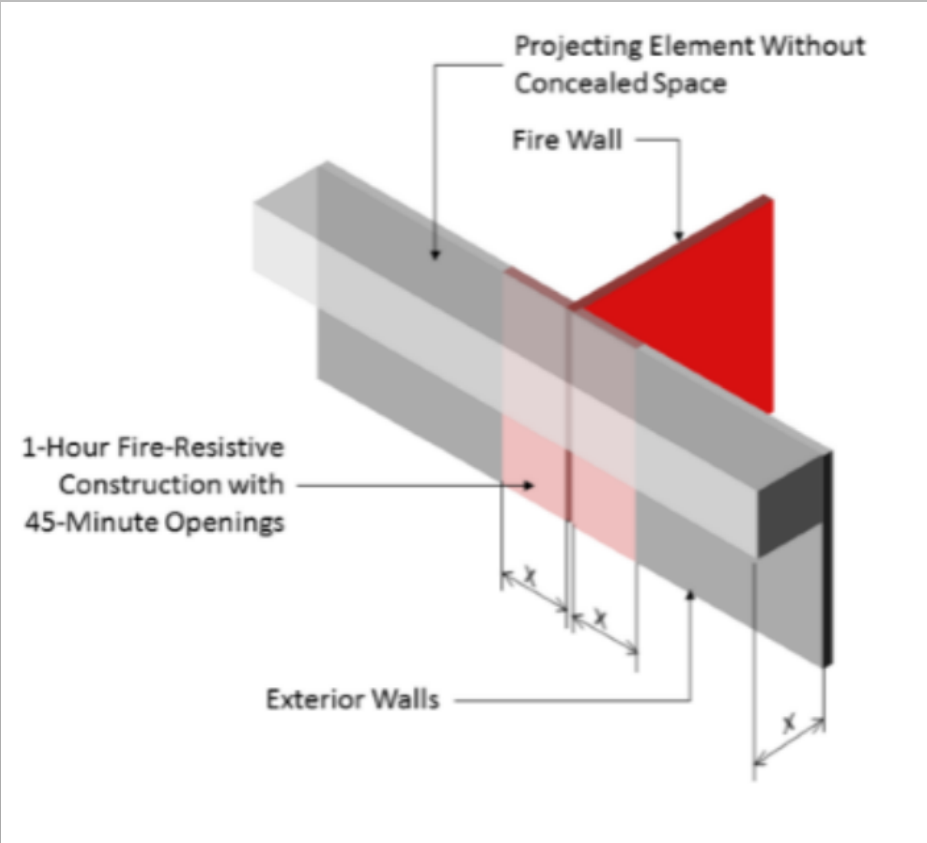
706.5.2: Exception 1

Projecting elements without concealed spaces

If the *exterior wall* behind and below the projecting element is at least 1-hour fire-resistance-rated for a distance not less than the depth of the projecting element on both sides of the *fire wall*. Openings within such *exterior walls* shall have a *fire protection rating* of not less than $\frac{3}{4}$ hour.

706.5.2: Exception 1

Projecting elements without concealed spaces



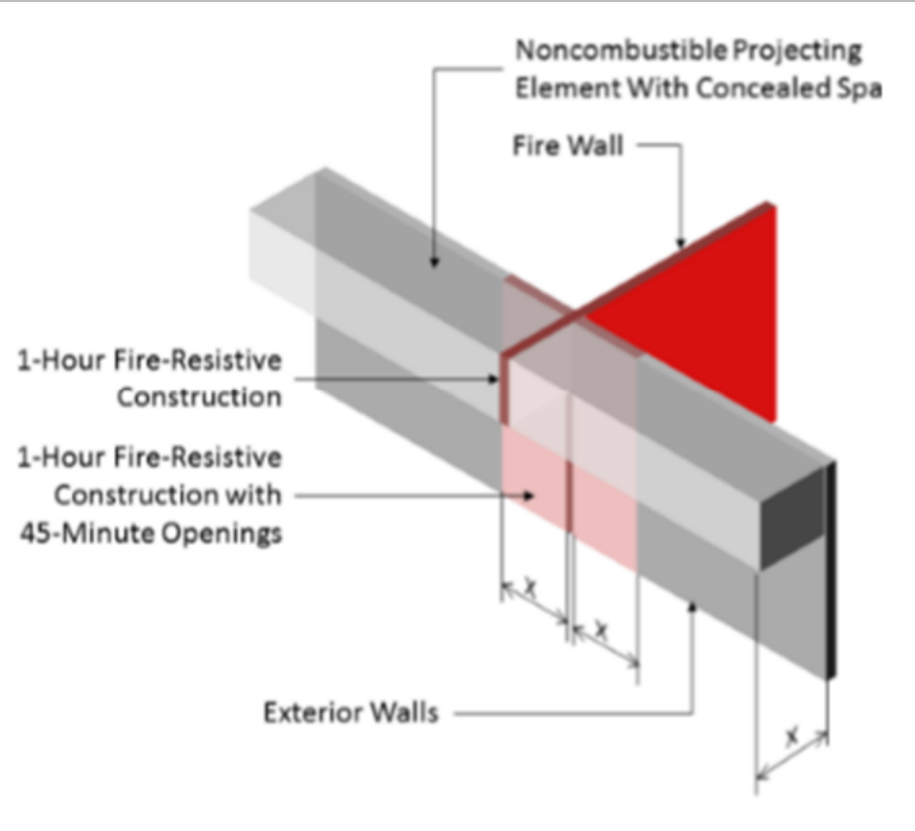
706.5.2: Exception 2

Noncombustible elements with concealed space

A 1-hr rated wall extends through the concealed space. The projecting element separated from the building by at least 1-hour rated construction for a distance not less than the depth of the projecting element on both sides of the *fire wall*. Openings within such *exterior walls* shall have a *fire protection rating* of not less than $3/4$ hour.

706.5.2: Exception 2

Noncombustible elements with concealed space



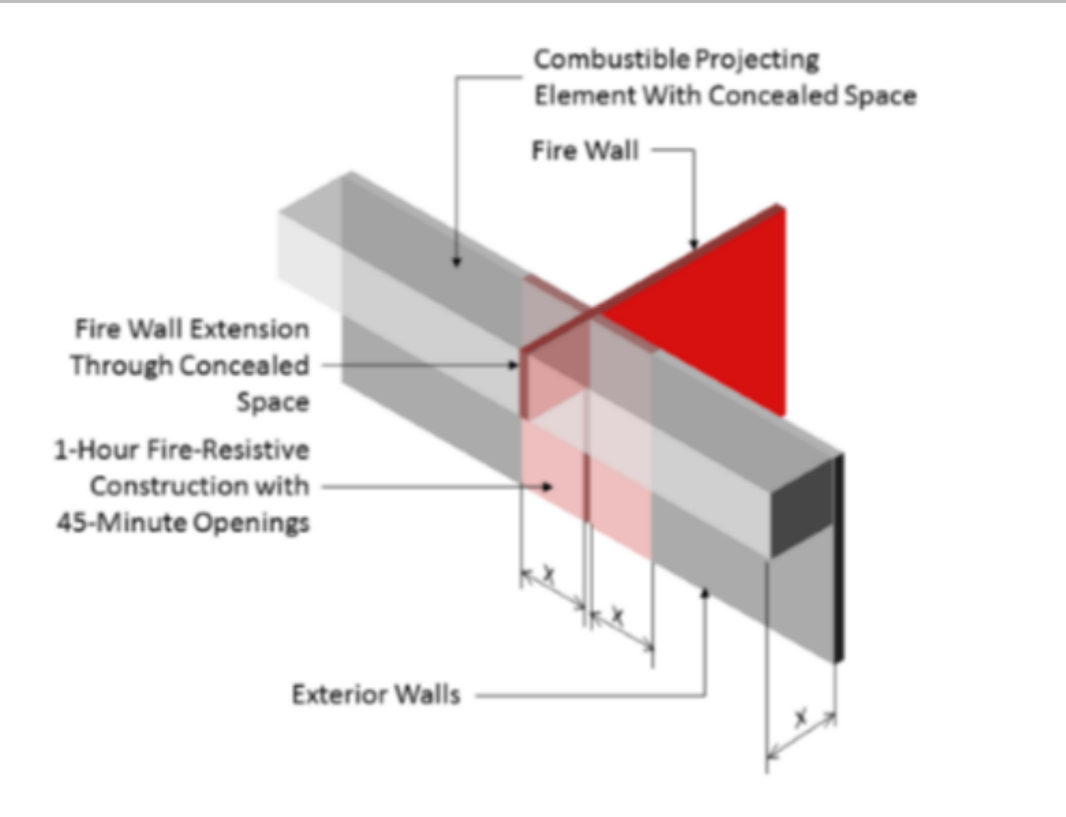
706.5.2: Exception 3

Combustible Projecting elements with concealed space

The Fire wall shall extend through the concealed space. The wall behind and below projecting element is at least 1-hour rated construction for a distance not less than the depth of the projecting element on both sides of the *fire wall*. Openings within such *exterior walls* shall have a *fire protection rating* of not less than $\frac{3}{4}$ hour.

706.5.2: Exception 3

Combustible Projecting elements with concealed space



706.6: Vertical Continuity

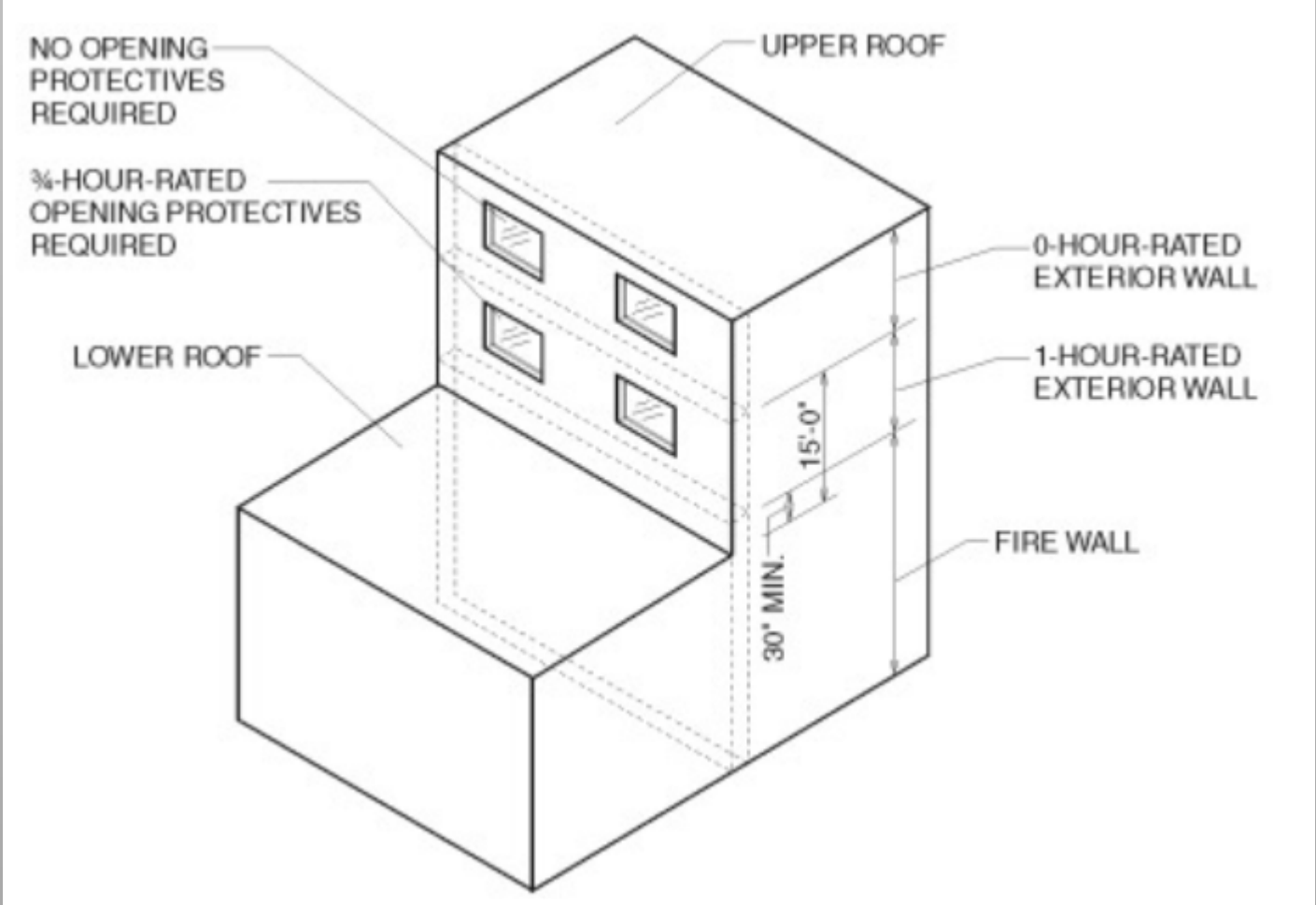
Fire walls shall extend from the foundation to a termination point not less than 30 inches above both adjacent roofs.



706.6: Exception 1

Stepped buildings in accordance with **706.6.1**
A fire wall that separates buildings with different roof levels, such wall shall terminate at a point at least 30 inches above the lower roof level, provided the *wall* for a height of 15 feet above the lower roof is not less than 1-hour fire-resistance-rated construction from both sides with openings protection of not less than $\frac{3}{4}$ hour.

706.6: Exception 1



706.6.1: Exception

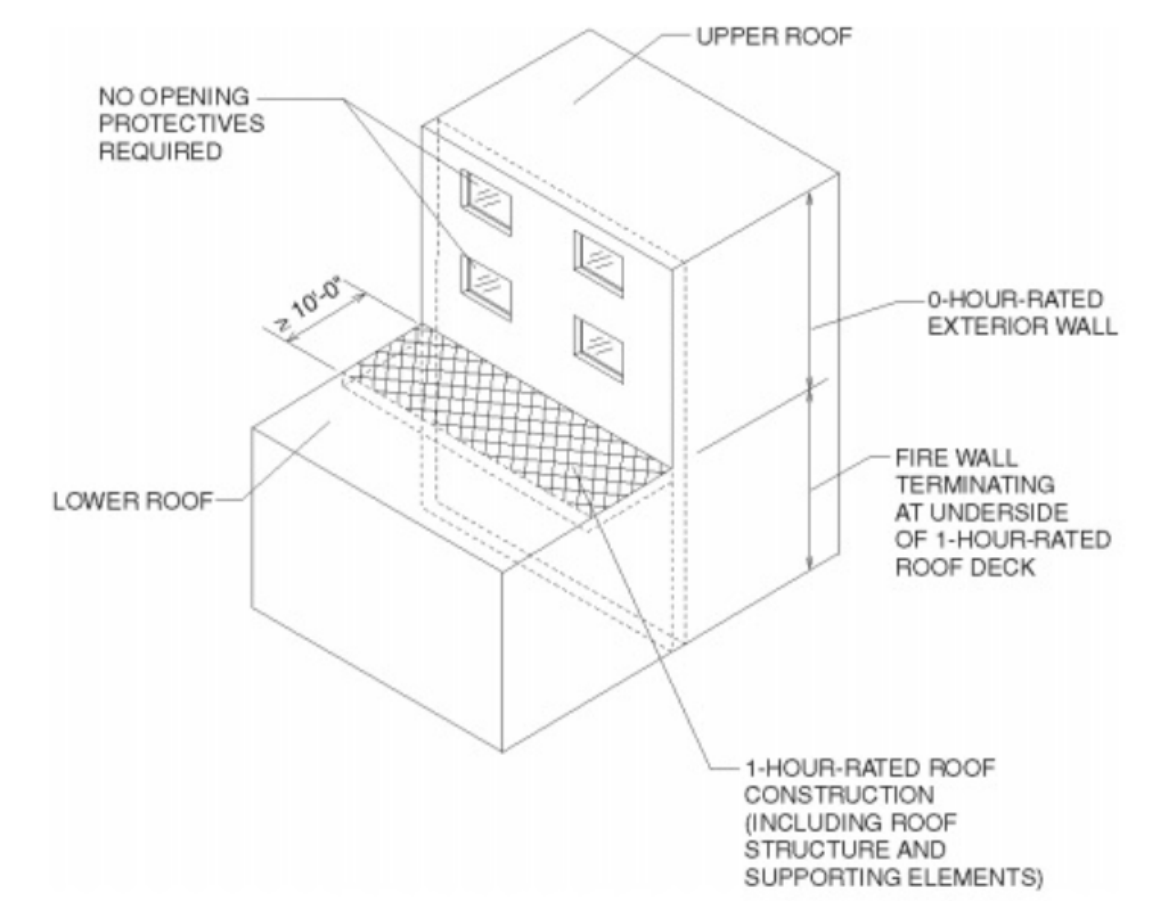
Fire wall may terminate at the underside of the lower roof deck if

The lower roof is 1-hr rated for at least 10' from the fire wall including the full span of all supporting elements

And

There are no openings in the lower roof within 10'

706.6.1: Exception

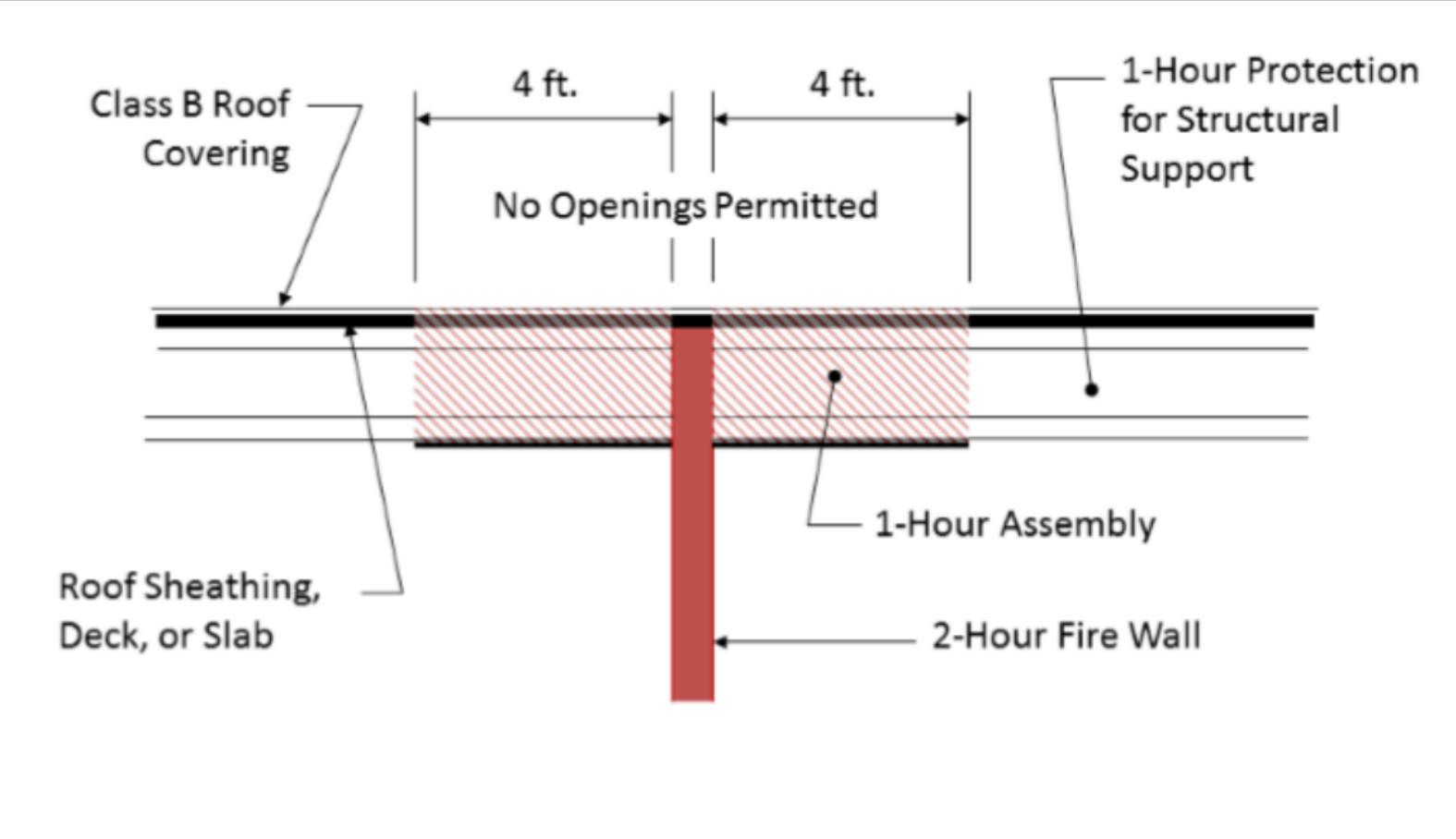


706.6: Exception 2

2-hr rated may terminate at underside of the lower roof deck if

- The lower roof is 1-hr rated for at least 10' from the fire wall including supporting members
- There are no openings in the lower roof within 10'
- Both roofs are at least class B

706.6: Exception 2



706.6: Exception 3

Walls shall be permitted to terminate at the underside of noncombustible roof sheathing, deck or slabs where both buildings are provided with not less than a Class B roof covering. Openings in the roof shall not be located within 4 feet of the *fire wall*.

706.6: Exception 4

In types III, IV + V construction may terminate at underside of combustible deck if

- There are no openings in the roof within 4'
- The roofs are at least class B
- The deck is *FRT wood* for 4 feet on both sides of the wall or has $\frac{5}{8}$ " Type X gyp bd directly beneath the underside of the deck, supported by not less than 2x ledgers attached to the sides of the roof framing members for not less than 4 feet on both sides of the *fire wall*

706.6: Exception 5

Special provision structures

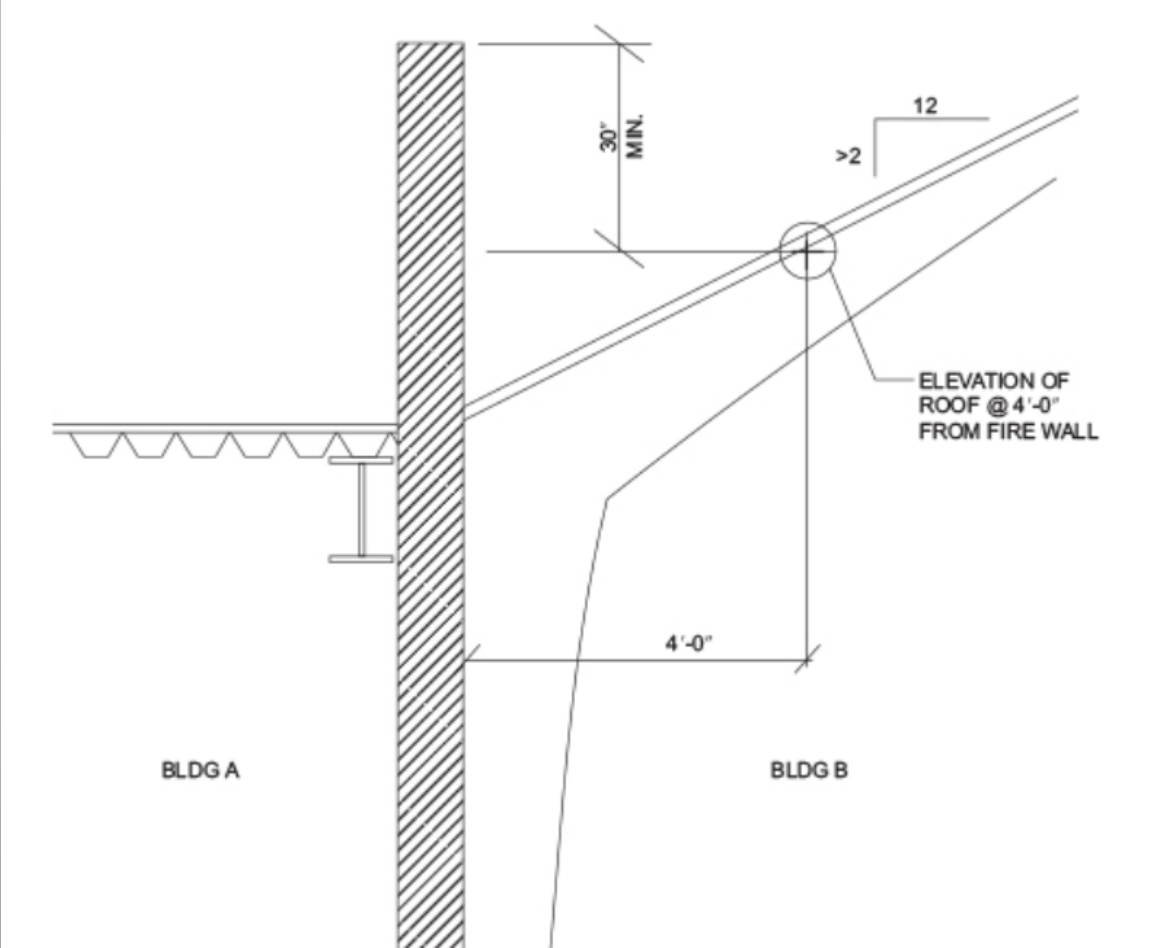
The fire wall is starts at the 3-hr horizontal separation.

706.6: Exception 6

Sloped roofs per **706.6.2**

Where a *fire wall* serves as an interior wall for a building, and the roof on one or both sides of the *fire wall* slopes toward the *fire wall* at a slope greater than 2 in 12, the *fire wall* shall extend to a height equal to the height of the roof 4 feet from the *fire wall* plus 30 inches. The extension of the *fire wall* shall be not less than 30 inches.

706.6: Exception 6



706.7: Combustible framing

Adjacent combustible members entering into a conc or solid masonry *fire wall* from opposite sides shall not have less than a 4-inch distance between embedded ends. Where members frame into hollow walls or walls of hollow units, hollow spaces shall be solidly filled for the full thickness of the wall and for a distance not less than 4 inches above, below and between the structural members, with noncombustible fire blocking materials

706.8: Openings

Each opening through a *fire wall* shall be protected in accordance with Section 716 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.

706.8: Openings

Exceptions:

1. Openings are not permitted in party walls constructed in accordance with Section 706.1.1.
2. Openings shall not be limited to 156 square feet where both *buildings* are equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1.

TYPE OF ASSEMBLY	REQUIRED WALL ASSEMBLY RATING (hours)	MINIMUM FIRE DOOR AND FIRE SHUTTER ASSEMBLY RATING (hours)	DOOR VISION PANEL SIZE ^a	FIRE-RATED GLAZING MARKING DOOR VISION PANEL ^{b, c}	MINIMUM SIDELIGHT/TRANSOM ASSEMBLY RATING (hours)		FIRE-RATED GLAZING MARKING SIDE-LIGHT/TRANSOM PANEL	
					Fire protection	Fire resistance	Fire protection	Fire resistance
Fire walls	4	3	Fire-resistance-rated glazing tested to ASTM E119 in accordance with Section 716.1.2.3 shall be permitted, in the maximum size tested.	D-H-W-240	Not Permitted	4	Not Permitted	W-240
	3	3 ^d	Fire-resistance-rated glazing tested to ASTM E119 in accordance with Section 716.1.2.3 shall be permitted, in the maximum size tested.	D-H-W-180	Not Permitted	3	Not Permitted	W-180
	2	1½	100 sq. in.	≤100 sq. in. = D-H-90 >100 sq. in.=D-H-W-90	Not Permitted	2	Not Permitted	W-120
	1½	1½	100 sq. in.	≤100 sq. in. = D-H-90 >100 sq. in.= D-H-W-90	Not Permitted	1½	Not Permitted	W-90

FIRE TEST STANDARD	MARKING	DEFINITION OF MARKING
<u>ASTM E119</u> or <u>UL 263</u>	W	Meets wall assembly criteria.
<u>ASTM E119</u> or <u>UL 263</u>	FC	Meets floor/ceiling criteria ^a
<u>NFPA 257</u> or <u>UL 9</u>	OH	Meets fire window assembly criteria including the hose stream test.
<u>NFPA 252</u> or <u>UL 10B</u> or <u>UL 10C</u>	D	Meets fire door assembly criteria.
	H	Meets fire door assembly hose stream test.
	T	Meets 450°F temperature rise criteria for 30 minutes
—	XXX	The time in minutes of the fire resistance or fire protection rating of the glazing assembly.

706.9: Penetrations

Shall comply with section 714.

Through penetrations shall be protected using systems installed as tested in the *approved* fire-resistance-rated assembly.

706.11: Ducts and air transfer

Ducts and air transfer openings shall **NOT** penetrate *fire walls*.

Exception: Penetrations by ducts and air transfer openings of *fire walls* that are **not** on a *lot line* shall be allowed provided that the penetrations comply with Section 717. The size and aggregate width of all openings shall not exceed the limitations of Section 706.8

706.10: Joints

Shall comply with section 715.



706.10: Joints

Shall comply with section 715.

JOINT. The opening in or between adjacent assemblies that is created due to *building* tolerances, or is designed to allow independent movement of the *building* in any plane caused by thermal, seismic, wind or any other loading.

Special Fire Wall: 706.1.1 Party Walls

Walls located on a LOT LINE between adjacent buildings which is used for joint service between the two buildings.

Party walls shall be constructed without openings and shall create separate buildings.

Party Wall: Exceptions

Anchor building and a mall per 402.4.2.2.1

Party walls are not required on *lot lines* dividing a building for ownership purposes where the aggregate height and area of the *buildings* do not exceed the maximum height and area requirements. The Building official shall be provided with copies of dedicated access easements and contractual agreements that permit the *owners* of the buildings located on either side of the *lot line* access to the other side for purposes of maintaining fire and *life safety systems* for review and approval.

Fire Wall: Where is it required?

Its NOT.

Unless

Fire Wall: Required

Party Walls – 706.1.1

Any wall located on a *lot line* between adjacent buildings, which is used or adapted for joint service between the two buildings, **shall** be constructed as a *fire wall* in accordance with Section 706. Party walls shall be constructed without openings and shall create separate buildings.

Fire Wall: Required

Covered and Open Mall Buildings – 402.4.2.2

An anchor building **shall** be separated from the covered or open mall building by **fire walls**...

Aircraft Hangers – 412.3.6.2

Maximum single fire areas established in accordance with hangar classification and construction type in Table 412.3.6 **shall** be separated by 2-hour **fire walls**...

Fire Wall: Where is it USED?

Building Height and Area Limitations - 503.1

...For the purposes of determining area limitations, height limitations and type of construction, each portion of a building separated by one or more *fire walls* complying with Section 706 shall be considered to be a separate building.

Is there anything I did not cover??

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Shameless plug

Annual Institute for Building Officials

Jan 13-30, 2025

Heritage Center of Brooklyn Center

<https://ccaps.umn.edu/annual-institute-building-officials>

ICC Region III Annual Educational Institute

Feb 10-Feb 14, 2025

Minneapolis Marriot Northwest

<https://www.iccsafe.org/professional-development/education/upper-great-plains-region-iii-educational-institute/>