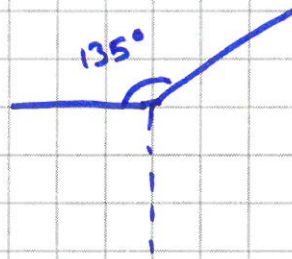


Example 1

exterior wall angle $< 90^\circ$

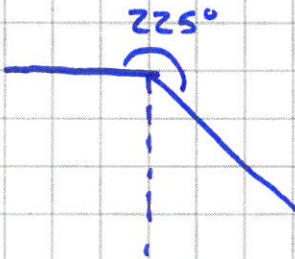
REQUIRED



Example 2

exterior wall angle $< 90^\circ$

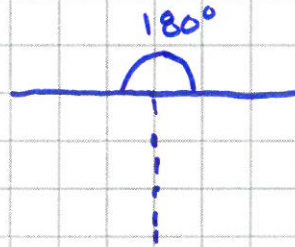
Required



Example 3

exterior wall angle $> 90^\circ$

NOT REQUIRED



Example 4

exterior wall angle $> 90^\circ$

NOT REQUIRED

Legend

— EXTERIOR WALL

- - - FIRE WALL

Source: 2009 IBC

Section 706.5.1 Commentary

is also factored into determining the required fire-resistance rating.

The minimum fire-resistance ratings required in Table 706.4 generally correlate with the fire-resistance ratings required by Table 508.3.3; however, Table 706.4 contains provisions that acknowledge the need for more conservative ratings for fire walls due to their unique role in creating separate buildings.

Due to the unique nature of the hazards presented by occupancies of Groups H-1, H-2 and H-3, Table 706.4 includes Note b, which references Sections 415.4 and 415.5 for specific requirements relative to the construction of such buildings (see commentary, Sections 415.4 and 415.5).

Occupancy	Combustibles in occupancy (psf)	Fire severity (hours)
Assembly	5 to 10	$\frac{1}{2}$ to 1
Business	5 to 10	$\frac{1}{2}$ to 1
Educational	5 to 10	$\frac{1}{2}$ to 1
Factory—Industrial		
Low hazard	0 to 10	0 to 1
Moderate hazard	10 to 25	1 to 3
Hazardous	Variable	Variable
Institutional	5 to 10	$\frac{1}{2}$ to 1
Mercantile	10 to 20	1 to 2
Residential	5 to 10	$\frac{1}{2}$ to 1
Storage		
Low hazard	0 to 10	0 to 1
Moderate hazard	10 to 30	1 to 1

For SI: 1 pound per square foot = 4.882 kg/m².

Figure 706.4(2)
OCCUPANCIES—FUEL LOAD—FIRE SEVERITY

706.5 Horizontal continuity. *Fire walls shall be continuous from exterior wall to exterior wall and shall extend at least 18 inches (457 mm) beyond the exterior surface of exterior walls.*

Exceptions:

1. *Fire walls shall be permitted to terminate at the interior surface of combustible exterior sheathing or siding provided the exterior wall has a fire-resistance rating of at least 1 hour for a horizontal distance of at least 4 feet (1220 mm) on both sides of the fire wall. Openings within such exterior walls shall be protected by opening protectives having a fire protection rating of not less than $\frac{3}{4}$ hour.*
2. *Fire walls shall be permitted to terminate at the interior surface of noncombustible exterior sheathing, exterior siding or other noncombustible exterior finishes provided the sheathing, siding, or other exterior noncombustible finish extends a horizontal distance*

of at least 4 feet (1220 mm) on both sides of the fire wall.

3. *Fire walls shall be permitted to terminate at the interior surface of noncombustible exterior sheathing where the building on each side of the fire wall is protected by an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.*

❖ Historically, the codes have addressed the hazards of fire exposure at the fire wall from only a vertical perspective; namely, at the roof (see Section 705.6). Section 705.5 addresses a similar fire hazard concern from the horizontal perspective; namely, at the intersection of the fire wall and the exterior wall. The horizontal exposure is similarly addressed in Section 1020.1.4 relative to stair enclosure exposure.

The 18-inch (457 mm) extension is intended to abate the potential for fire to travel from one building to the other around the fire wall. The 18-inch (457 mm) extension is required to extend the full height of the fire wall. The three exceptions acknowledge the effect certain types of exterior wall construction will have on fire breaching the exterior wall and exposing the adjacent building; namely, fire-resistance-rated construction (see Exception 1), noncombustible finish materials (see Exception 2) and noncombustible sheathing materials coupled with sprinkler protection (see Exception 3) provide the necessary barrier to limit fire spread across the exterior surface. The difference between Exceptions 2 and 3 is that Exception 2 would not permit a combustible exterior finish to be placed over the noncombustible exterior wall construction, while Exception 3 would allow a combustible exterior finish, provided the building is sprinklered with either an NFPA 13 or 13R system.

706.5.1 Exterior walls. *Where the fire wall intersects exterior walls, the fire-resistance rating and opening protection of the exterior walls shall comply with one of the following:*

1. *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. The fire-resistance rating of the exterior wall shall extend a minimum of 4 feet (1220 mm) on each side of the intersection of the fire wall to exterior wall. Exterior wall intersections at fire walls that form an angle equal to or greater than 180 degrees (3.14 rad) do not need exterior wall protection.*
2. *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. Such protection is not required for exterior walls terminating at fire walls that*

is also factored into determining the required fire-resistance rating.

The minimum fire-resistance ratings required in Table 706.4 generally correlate with the fire-resistance ratings required by Table 508.3.3; however, Table 706.4 contains provisions that acknowledge the need for more conservative ratings for fire walls due to their unique role in creating separate buildings.

Due to the unique nature of the hazards presented by occupancies of Groups H-1, H-2 and H-3, Table 706.4 includes Note b, which references Sections 415.4 and 415.5 for specific requirements relative to the construction of such buildings (see commentary, Sections 415.4 and 415.5).

Occupancy	Combustibles in occupancy (psf)	Fire severity (hours)
Assembly	5 to 10	$1\frac{1}{2}$ to 1
Business	5 to 10	$1\frac{1}{2}$ to 1
Educational	5 to 10	$1\frac{1}{2}$ to 1
Factory—Industrial		
Low hazard	0 to 10	0 to 1
Moderate hazard	10 to 25	1 to 3
Hazardous	Variable	Variable
Institutional	5 to 10	$1\frac{1}{2}$ to 1
Mercantile	10 to 20	1 to 2
Residential	5 to 10	$1\frac{1}{2}$ to 1
Storage		
Low hazard	0 to 10	0 to 1
Moderate hazard	10 to 30	1 to 1

For SI: 1 pound per square foot = 4.882 kg/m².

Figure 706.4(2)
OCCUPANCIES—FUEL LOAD—FIRE SEVERITY

706.5 Horizontal continuity. Fire walls shall be continuous from exterior wall to exterior wall and shall extend at least 18 inches (457 mm) beyond the exterior surface of exterior walls.

Exceptions:

1. *Fire walls* shall be permitted to terminate at the interior surface of combustible exterior sheathing or siding provided the *exterior wall* has a *fire-resistance rating* of at least 1 hour for a horizontal distance of at least 4 feet (1220 mm) on both sides of the *fire wall*. Openings within such *exterior walls* shall be protected by opening protectives having a *fire protection rating* of not less than $\frac{3}{4}$ hour.
2. *Fire walls* shall be permitted to terminate at the interior surface of noncombustible exterior sheathing, exterior siding or other noncombustible exterior finishes provided the sheathing, siding, or other exterior noncombustible finish extends a horizontal distance

of at least 4 feet (1220 mm) on both sides of the *fire wall*.

3. *Fire walls* shall be permitted to terminate at the interior surface of noncombustible exterior sheathing where the building on each side of the *fire wall* is protected by an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2.

- ❖ Historically, the codes have addressed the hazards of fire exposure at the fire wall from only a vertical perspective; namely, at the roof (see Section 705.6). Section 705.5 addresses a similar fire hazard concern from the horizontal perspective; namely, at the intersection of the fire wall and the exterior wall. The horizontal exposure is similarly addressed in Section 1020.1.4 relative to stair enclosure exposure.

The 18-inch (457 mm) extension is intended to abate the potential for fire to travel from one building to the other around the fire wall. The 18-inch (457 mm) extension is required to extend the full height of the fire wall. The three exceptions acknowledge the effect certain types of exterior wall construction will have on fire breaching the exterior wall and exposing the adjacent building; namely, fire-resistance-rated construction (see Exception 1), noncombustible finish materials (see Exception 2) and noncombustible sheathing materials coupled with sprinkler protection (see Exception 3) provide the necessary barrier to limit fire spread across the exterior surface. The difference between Exceptions 2 and 3 is that Exception 2 would not permit a combustible exterior finish to be placed over the noncombustible exterior wall construction, while Exception 3 would allow a combustible exterior finish, provided the building is sprinklered with either an NFPA 13 or 13R system.

706.5.1 Exterior walls. Where the fire wall intersects exterior walls, the fire-resistance rating and opening protection of the exterior walls shall comply with one of the following:

1. 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. The *fire-resistance rating* of the *exterior wall* shall extend a minimum of 4 feet (1220 mm) on each side of the intersection of the *fire wall* to *exterior wall*. *Exterior wall* intersections at *fire walls* that form an angle equal to or greater than 180 degrees (3.14 rad) do not need *exterior wall* protection.
2. 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. Such protection is not required for *exterior walls* terminating at *fire walls* that

form an angle equal to or greater than 180 degrees (3.14 rad).

- ❖ This section deals only with fire walls that terminate at an exterior wall that does not continue in the same horizontal plane, but the exterior walls on each side of the fire wall form an angle of less than 180 degrees (3.14 rad). For example, the required fire wall may end at an

inside corner of an L-shaped building. Should this occur, not only does Section 706.5 apply, but this section has extra requirements to mitigate the exterior wall fire exposure from one building to another. This section states two methods of complying [see Figures 706.5.1(1), 706.5.1(2) and 706.5.1(3)].

