

USG  
Interior  
Panel &  
Finishing  
Solutions

## FIRESTOPPING CONSTRUCTION JOINTS AND PENETRATION SYSTEMS

FIRE CONTROL STOPPING FOR  
MODERN BUILDING DESIGNS

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# HIGH-PERFORMING FIRESTOP SYSTEMS

Fire-rated wall, floor and ceiling assemblies provide the much-needed barriers to create compartmentalization during a fire. However, these assemblies alone cannot provide total protection. As such, effective firestopping measures that limit flame and smoke spread through penetrations in a fire barrier offer the additional needed protection to keep the structure safe and its occupants safer. For over 100 years, USG has been a leader in developing new products and systems that deliver greater performance, enabling you to create the safe spaces where people live, work and play.

## USER'S GUIDE

### THIS GUIDE EXPLAINS:

- Where joint and penetration systems are used
- The firestop products offered by USG
- How to select and specify the appropriate firestop system

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## UNDERSTAND YOUR SYSTEM

# OVERVIEW

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### JOINT SYSTEMS

The intersection where two fire-resistant assemblies meet (for example, a wall to a floor/ceiling assembly) creates a joint through which fire and smoke can spread. To prevent this, fire-resistant construction joint assemblies are installed at these intersections. USG Sheetrock® Brand firestop products can be used at these intersections in many different applications.

While joint tape, joint treatment products, and mortar-type materials may be used in tight, large and static joints where expansion and contraction is not expected, USG Sheetrock® Brand fire- and smoke-resistant caulk-type materials are required for dynamic joints to allow for expansion and contraction.

USG Joint Systems have been evaluated in accordance with ASTM E1966 (UL 2079).

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### THROUGH PENETRATIONS

Penetrations occur in building construction, and it is sometimes necessary to pass these penetrants through fire-resistive assemblies. Typically, openings are cut or drilled through the floor or wall, and then the penetrants are installed.

However, this leaves an opening, or annular space, through which fire and smoke can spread. USG Sheetrock® Brand firestop products can be installed within the openings and around the penetrants to prevent the passage of flames and hot gases through a fire-resistive assembly.

USG Through Penetration Systems have been evaluated in accordance with ASTM E814 (UL 1479) and ULC-S115.

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### MORTAR-TYPE MATERIALS

These materials are applied wet over the forming materials (where applicable). They then set or harden to form a tough, durable seal. Typically used in static joint systems and around metallic pipe penetrants where strength and economy are required.

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### SEALANT MATERIALS

These materials are applied from a caulking gun and either dry or cure to form a flexible seal to maintain acoustical control, provide a smoke barrier at the joint, and contribute to the overall fire performance of the assembly. These products are typically used in dynamic joints systems and around metallic penetrants where movement is anticipated and flexibility is a requirement.



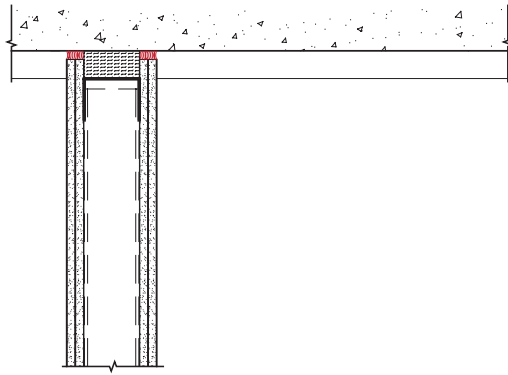
## UNDERSTAND YOUR SYSTEM

# APPLICATIONS

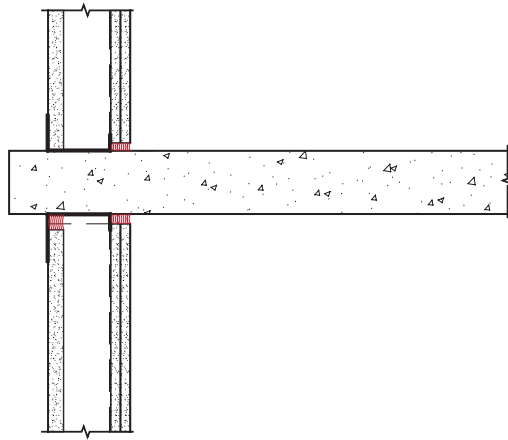
USG Firestop Systems consist of special sealants that are caulked, trowelled or poured at joints where assemblies intersect or around a penetrant (for example, pipe or conduit). The sealant maintains the fire-resistive and acoustical rating at the joint of intersecting assemblies and prevents the passage of flame and smoke around penetrants.

### SYSTEM APPLICATION

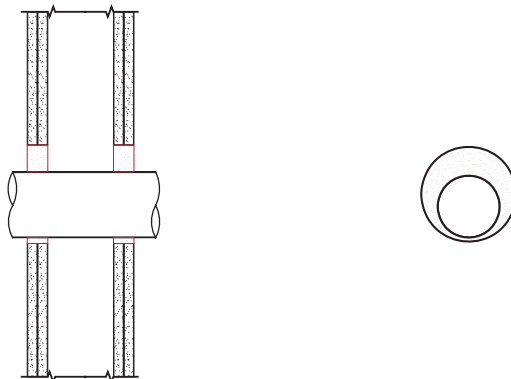
Conventional Wall: Dynamic Head of Wall Joint System



Shaft Wall: Dynamic Head of Wall System



Conventional Wall: Through Penetration System





## UNDERSTAND YOUR SYSTEM

# COMPONENTS

USG Firestop Systems have been comprehensively tested for fire resistance and acoustical ratings. The ratings only apply when all of the specified system components are used together. Substitutions of any of the components are not recommended and are not supported by USG. Refer to the appropriate product safety data sheet for complete health and safety information.

### MORTAR-TYPE MATERIALS

#### **USG Sheetrock® Brand Firecode® Compound - UL Type FC**

- Provides a strong, durable firestop with exceptional economy
- A dry powder product that is mixed with water at the job site and applied in wet form, and allowed to set or harden
- Mix only what is needed for the application at hand
- Fresh compound bonds to cured compound, simplifying repairs due to construction damage or changes to penetrating items
- Mixes quickly and easily with water at job site
- Once mixed, sets in 2-3 hours and bonds to concrete, metals, wood and cable jacketing without the use of primers
- Dries to a red color easily seen and identified by fire marshals
- Refer to submittal sheet J1521 for more information

### SEALANT-TYPE MATERIALS

#### **USG Sheetrock® Brand Acoustical Sealant - UL Type AS**

- Reduces sound transmission in partition systems to maintain specified STC values
- Seals spaces at perimeters of partitions or around cutouts
- Easily applied on vertical and horizontal surfaces
- Off-white color, remains flexible when dry
- Maximizes sound attenuation with complete perimeter seal of both faces
- Acrylic water-based caulking material
- Refer to submittal sheet J678 for more information

#### **USG Sheetrock® Brand Firecode® Smoke-Sound Sealant - UL Type AS**

- Protects against the spread of flame and smoke
- Meets ASTM C834 and fire caulk classified by Underwriters Laboratories LLC (UL)
- Reduces sound transmission in partition systems to maintain specified STC values
- Seals spaces at perimeters of partitions or around cutouts
- Easily applied on vertical and horizontal surfaces
- Red color, remains flexible when dry
- Maximizes sound attenuation with complete perimeter seal of both faces
- Acrylic water-based caulking material
- Refer to submittal sheet J2042 for more information



## UNDERSTAND YOUR SYSTEM

# PERFORMANCE TESTING

When you specify USG Firestop Systems, you are selecting one of the most important elements in the building. For that reason, you should choose the system that ensures superior safety and performance.

### PERFORMANCE TESTS

USG Firestop Systems result from a program of extensive testing and continuous improvements, backed by over 100 years of experience in the building materials industry.

### TESTING METHODS

All USG products and systems undergo exhaustive testing to ensure that they meet applicable standards. USG products are Classified as to fire resistance and surface flammability. As part of this protocol, UL, an independent organization that has tested products for public safety for over a century, periodically audits production of these materials to ensure compliance with necessary properties.

USG products are also manufactured and tested in accordance with ASTM standards. ASTM International is one of the largest voluntary standards development organizations in the world, and is a trusted source for technical standards for materials, products, systems and services.

USG Firestop Systems are tested in accordance with the following standards:

- **ASTM E84 (UL 723):** *Surface Burning Characteristics*
- **ASTM E814 (UL 1479) and ULC-S115:** *Standard Test Method for Fire Tests of Through-Penetration Fire Stops*
- **ASTM E1966 (UL 2079):** *Standard Test Method for Fire-Resistive Joint Systems*
- **ASTM E90:** *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements*

### TESTING RESULTS

| Fire Resistance Test Standard |                 | USG Sheetrock® Brand Firecode® Compound - UL Type FC <sup>a</sup> | USG Sheetrock® Brand Firecode® Smoke-Sound Sealant - UL Type AS | USG Sheetrock® Brand Acoustical Sealant - UL Type AS |
|-------------------------------|-----------------|---|---|--|
| ASTM E84                      | Flame Spread    | 0   | 0   | 0  |
|                               | Smoke Developed | 0   | 0   | 0  |
| ASTM E814                     |                 | •   | •   | •  |
| ASTM E1966                    |                 | •   | •   | •  |
| ASTM E90                      |                 | —   | •   | •  |

#### Note

(a) Approved by NYC (MEA 341-92-M) and LA City (RR#25212). Recognized by ICBO (ER-5050). Rated nontoxic in accordance with the sixth draft of the University of Pittsburgh test method and the LC50, calculated using the Weil method.

## UNDERSTAND YOUR SYSTEM

# PERFORMANCE TESTING

### FIRE CONTAINMENT CURTAIN WALLS

#### Code Requirements

U.S. model building codes require that the gap at the slab edge/curtain wall interface be treated to maintain the same fire integrity as the floor/ceiling. The life-safety fire containment systems have been tested (UL Systems CW-S-1001, CW-S-2001 and CW-S-2002) and accepted or recognized (ICBO ER-2331, California State Fire Marshal, OSHPD) as preventing the passage of flame at the interface for the classification period. See Performance Selector in this guide for more information on fire resistance.

| Framing Type      | Exterior Finish              | Owens Corning Thermafiber® FireSpan® 90 Mineral Wool Insulation Thickness | Owens Corning Thermafiber® Mineral Fiber Safing Insulation Thickness | USG Sheetrock® Brand Firecode® Compound Thickness | Maximum Linear Opening Width | Integrity Rating Hr. | Insulation Rating Hr. | UL System Number |
|-------------------|------------------------------|---|--|---|------------------------------|----------------------|-----------------------|------------------|
| Steel Studs       | Conventional Exterior Finish | 3"  | 4"   | 1"  | 2-1/2"                       | 2                    | 45 min.               | CW-S-1001        |
| Aluminum Mullions | Spandrel Glass               | 2"  | 4"   | 1"  | 8"                           | 2                    | 45 min.               | CW-S-2001        |
| Aluminum Mullions | Spandrel Aluminum            | 2"  | 4"   | 1"  | 8"                           | 2                    | 45 min.               | CW-S-2002        |

### APPROXIMATE COVERAGE RATES

#### USG Sheetrock® Brand Firecode® Compound

| Dry Powder Compound (lb.) | Approx. Water Additions (pt.) | Approx. Volume of Applied Firestop (cu. in.) <sup>b</sup> |
|---------------------------|-------------------------------|---|
| 1                         | 0.5                           | 33.6  |
| 5                         | 2.5                           | 172.5   |
| 7.5                       | 3.8                           | 257.6   |
| 10                        | 5.0                           | 344.9   |
| 15                        | 7.5                           | 517.4   |

#### USG Sheetrock® Brand Acoustical Sealant, USG Sheetrock® Brand Firecode® Smoke-Sound Sealant

| Gallon    |           |           | 29 oz. Cartridge |           |           |
|-----------|-----------|-----------|------------------|-----------|-----------|
| 1/4" bead | 3/8" bead | 1/2" bead | 1/4" bead        | 3/8" bead | 1/2" bead |
| 392 ft.   | 174 ft.   | 98 ft.    | 89 ft.           | 40 ft.    | 22 ft.    |

#### Note

(b) Based on approximately 7.5 pints of water per 15 lb. bag for wall penetrations. For floor penetrations, approximately 8.3 pints of water per 15 lb. bag is recommended and yields approximately 537 cu. in. of applied firestop.



## SELECT YOUR SYSTEM

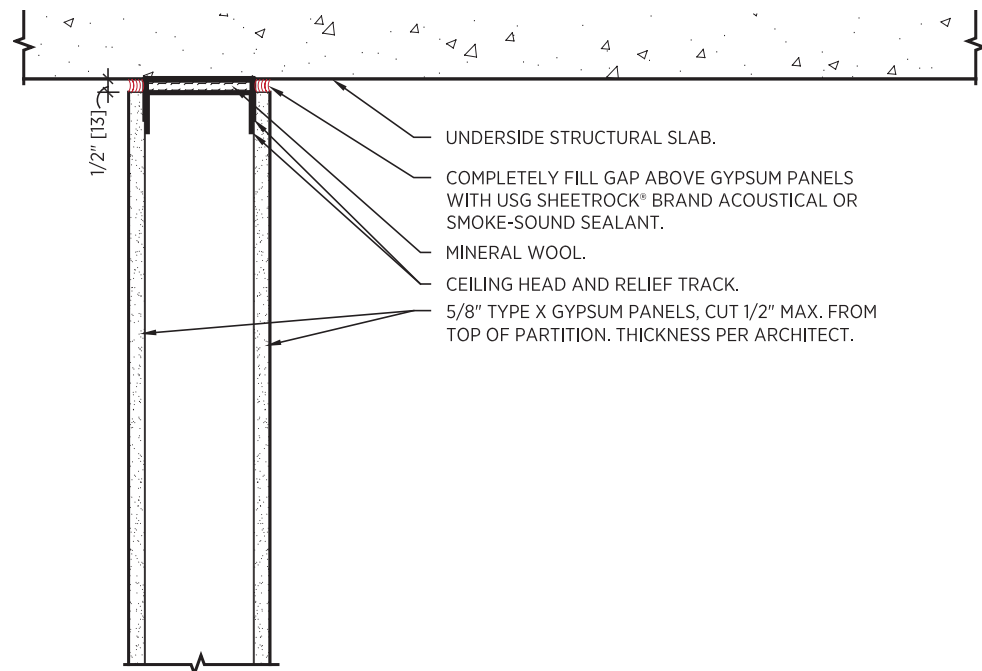
# CONSTRUCTION JOINT SYSTEMS

## SYSTEM DETAILS

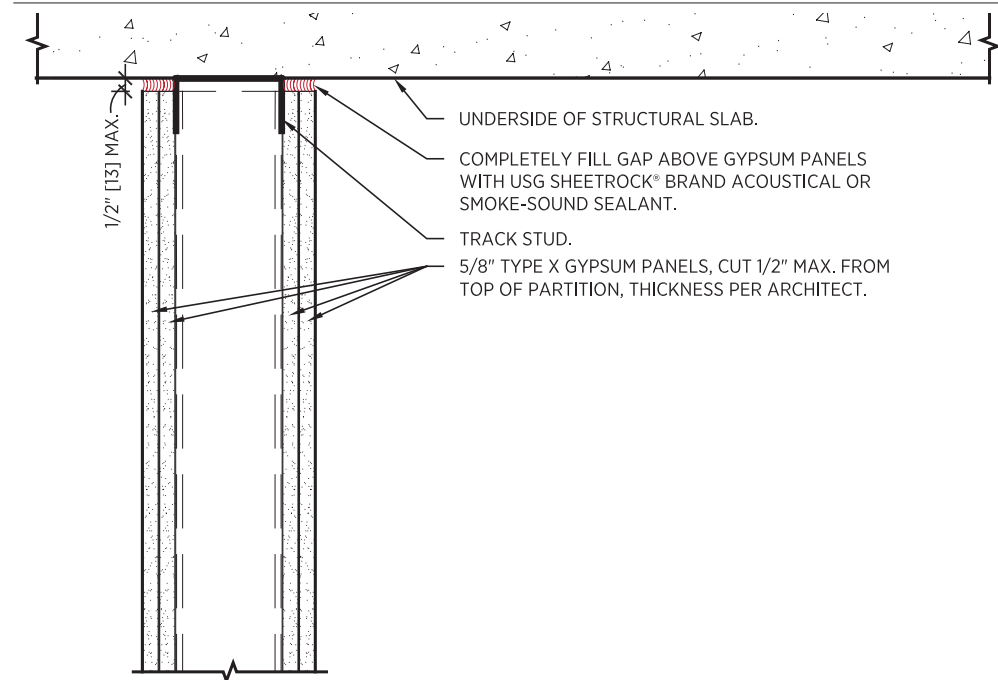
Reference the UL Online Certifications Directory at [ul.com](http://ul.com) for the most up-to-date information, material designations, thicknesses and fire ratings.

### STATIC JOINT SYSTEMS

#### 1-HR HEAD OF WALL UL HW-S-0009



#### 2-HR HEAD OF WALL UL HW-S-0032 PERPENDICULAR TO DECK FLUTES

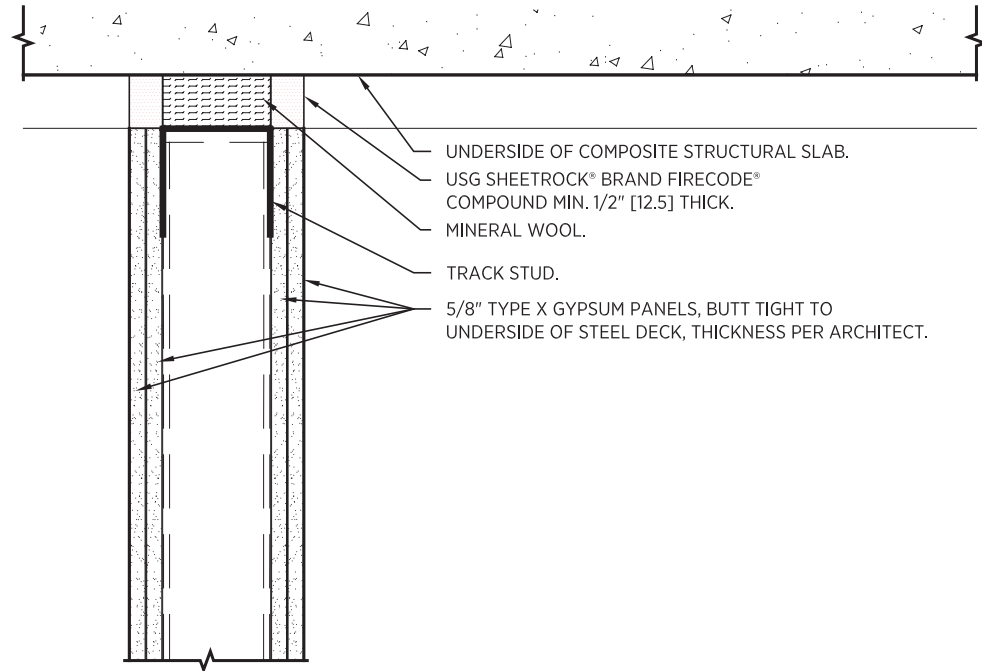


**STATIC JOINT  
SYSTEMS CONT.**

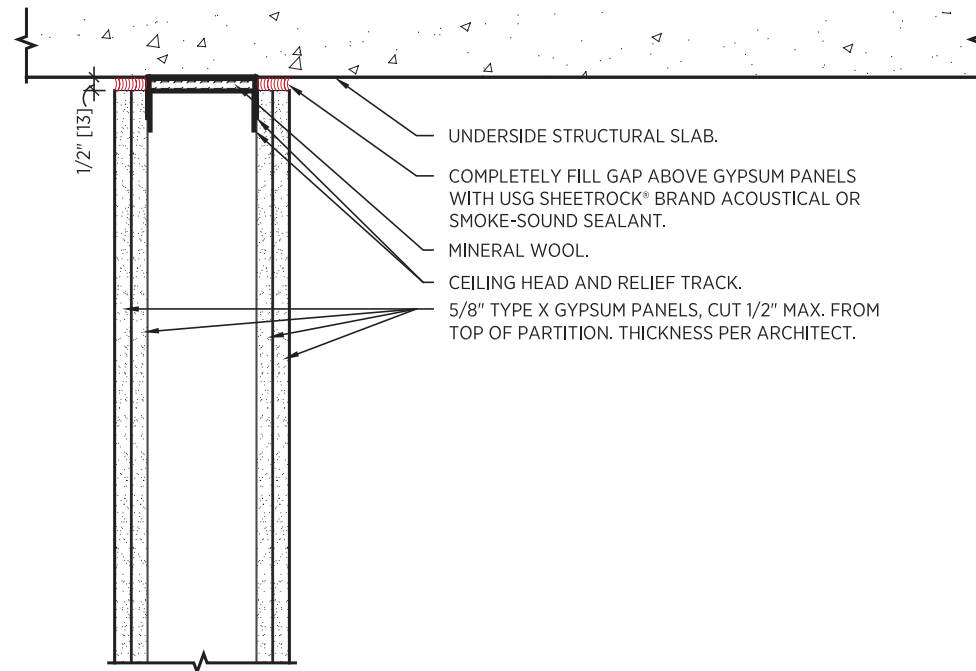
## SELECT YOUR SYSTEM

Reference the UL Online Certifications Directory at [ul.com](http://ul.com) for the most up-to-date information, material designations, thicknesses and fire ratings.

### 2-HR HEAD OF WALL UL HW-S-0001 PERPENDICULAR TO DECK FLUTES



### 2-HR HEAD OF WALL UL HW-S-0010



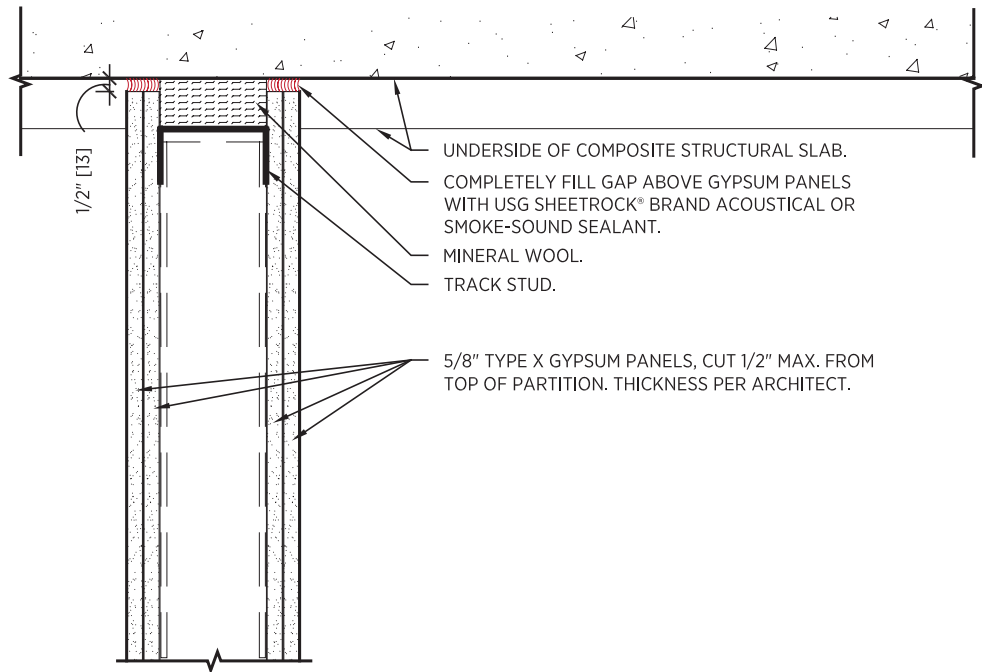


## SELECT YOUR SYSTEM

Reference the UL Online Certifications Directory at [ul.com](http://ul.com) for the most up-to-date information, material designations, thicknesses and fire ratings.

### STATIC JOINT SYSTEMS CONT.

#### 2-HR HEAD OF WALL UL HW-S-0035 PERPENDICULAR TO DECK FLUTES

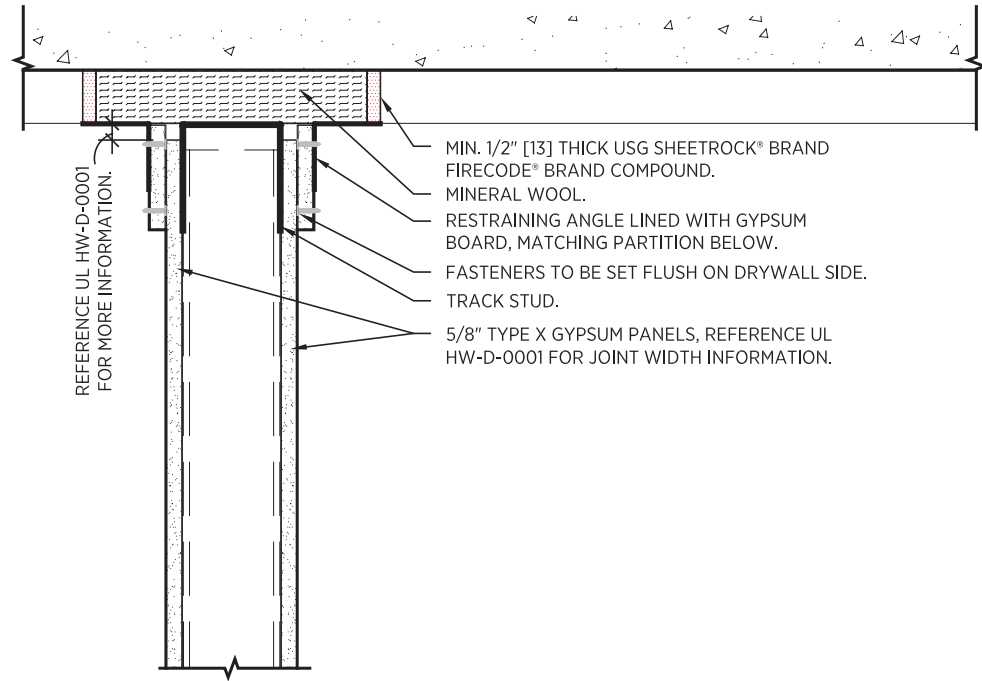


**CONVENTIONAL  
WALL DYNAMIC JOINT  
SYSTEMS**

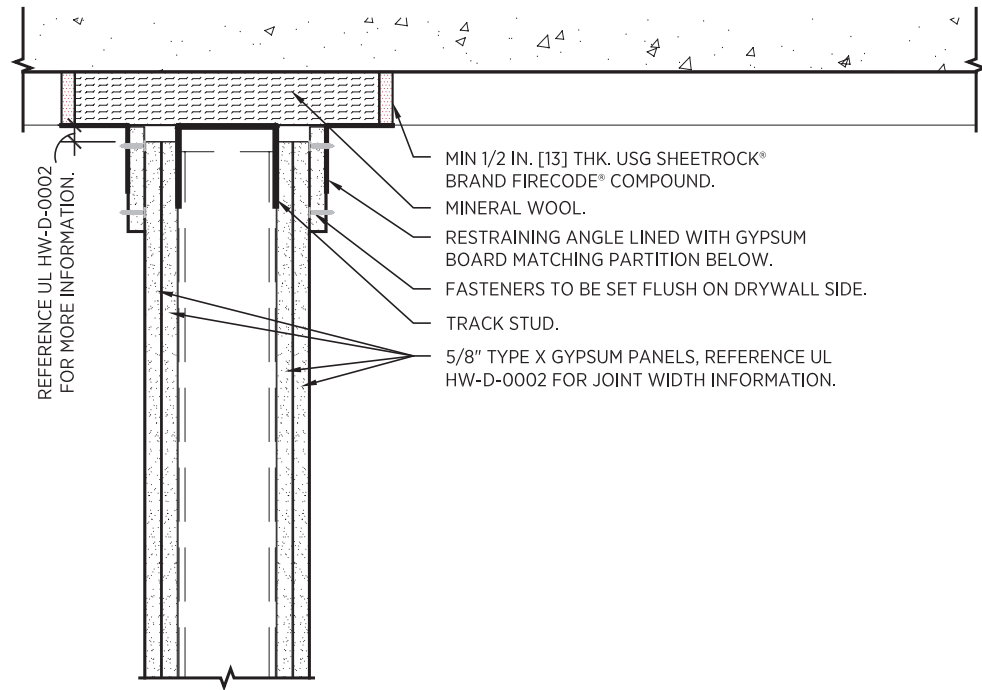
## SELECT YOUR SYSTEM

Reference the UL Online Certifications Directory at [ul.com](http://ul.com) for the most up-to-date information, material designations, thicknesses and fire ratings.

### 1-HR HEAD OF WALL UL HW-D-0001 PERPENDICULAR TO DECK FLUTES



### 2-HR HEAD OF WALL UL HW-D-0002 PERPENDICULAR TO DECK FLUTES

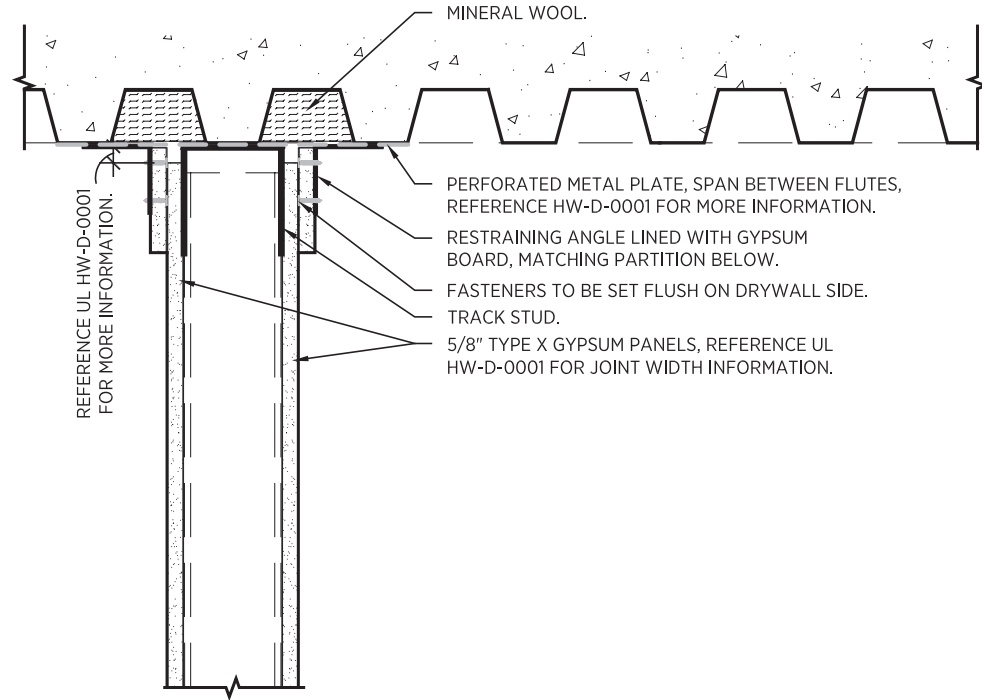


CONVENTIONAL  
WALL DYNAMIC JOINT  
SYSTEMS CONT.

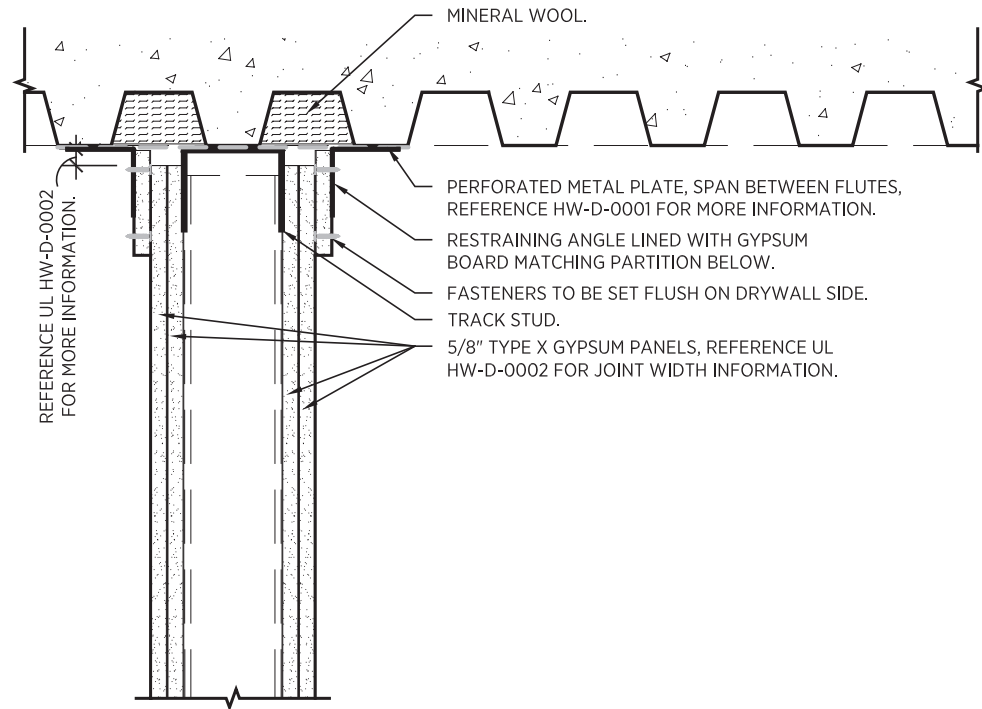
## SELECT YOUR SYSTEM

Reference the UL Online Certifications Directory at [ul.com](http://ul.com) for the most up-to-date information, material designations, thicknesses and fire ratings.

### 1-HR HEAD OF WALL UL HW-D-0001 PARALLEL TO DECK FLUTES



### 2-HR HEAD OF WALL UL HW-D-0002 PARALLEL TO DECK FLUTES



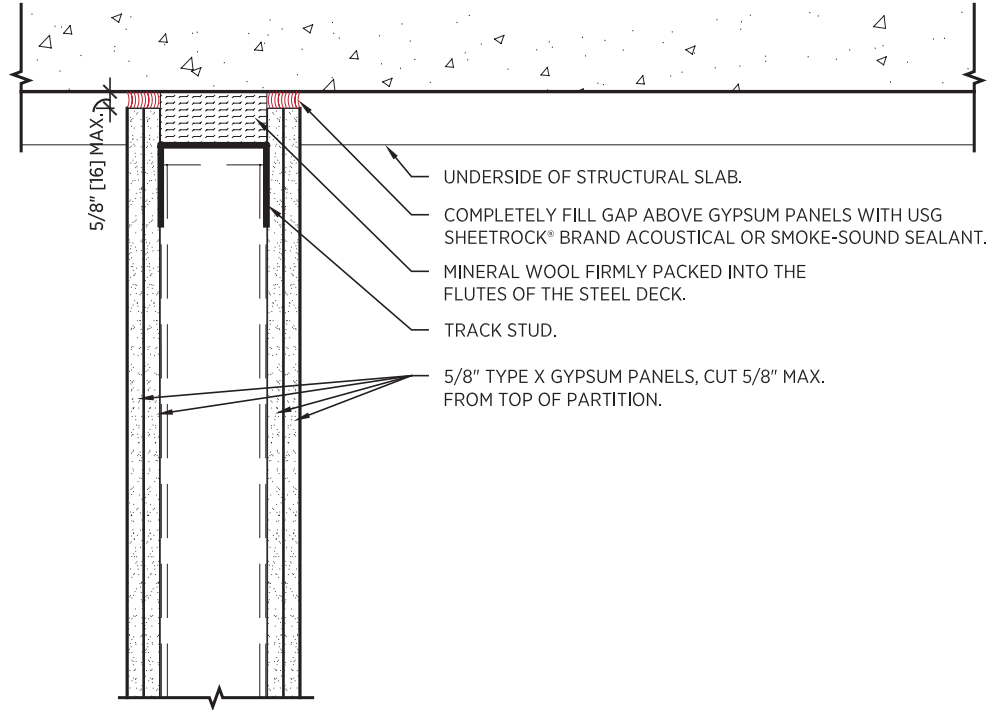


CONVENTIONAL  
WALL DYNAMIC JOINT  
SYSTEMS CONT.

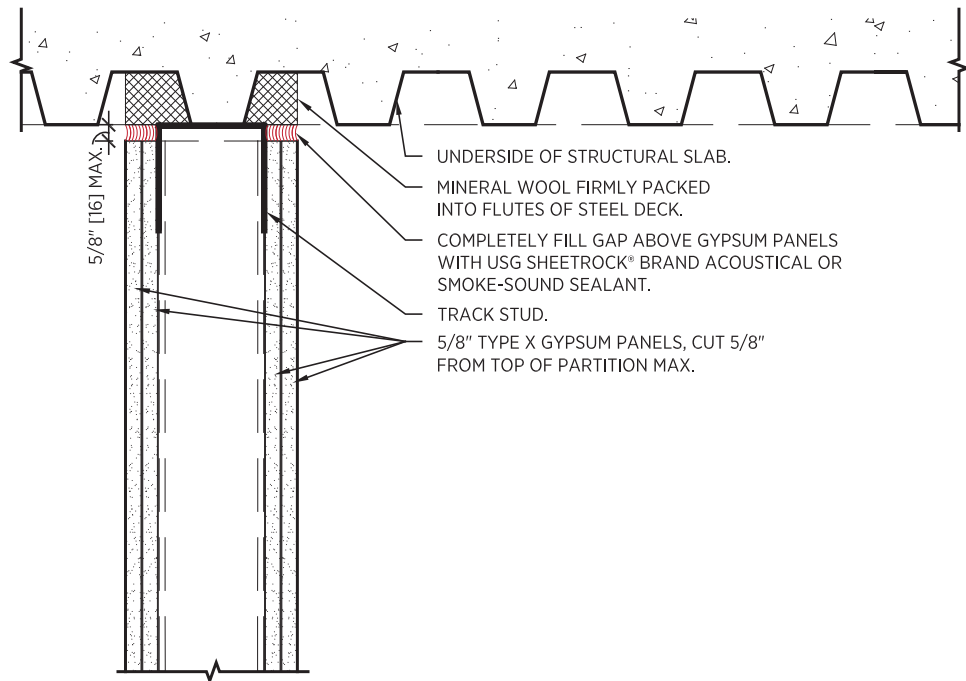
## SELECT YOUR SYSTEM

Reference the UL Online Certifications Directory at [ul.com](http://ul.com) for the most up-to-date information, material designations, thicknesses and fire ratings.

### 2-HR HEAD OF WALL UL HW-D-0262 PERPENDICULAR TO DECK FLUTES



### 2-HR HEAD OF WALL UL HW-D-0262 PARALLEL TO DECK FLUTES

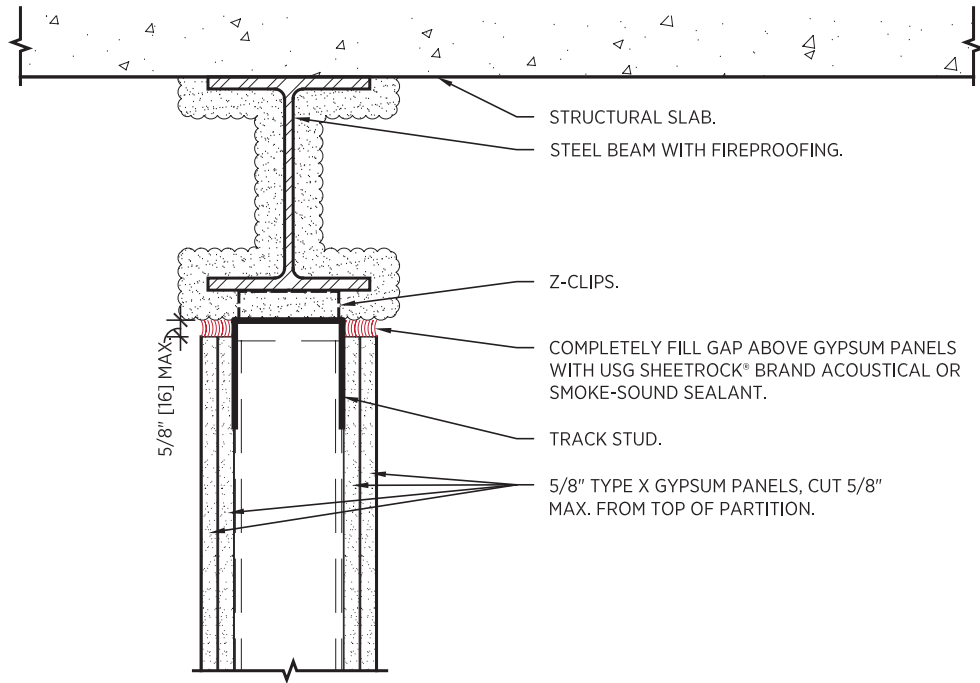


CONVENTIONAL  
WALL DYNAMIC JOINT  
SYSTEMS CONT.

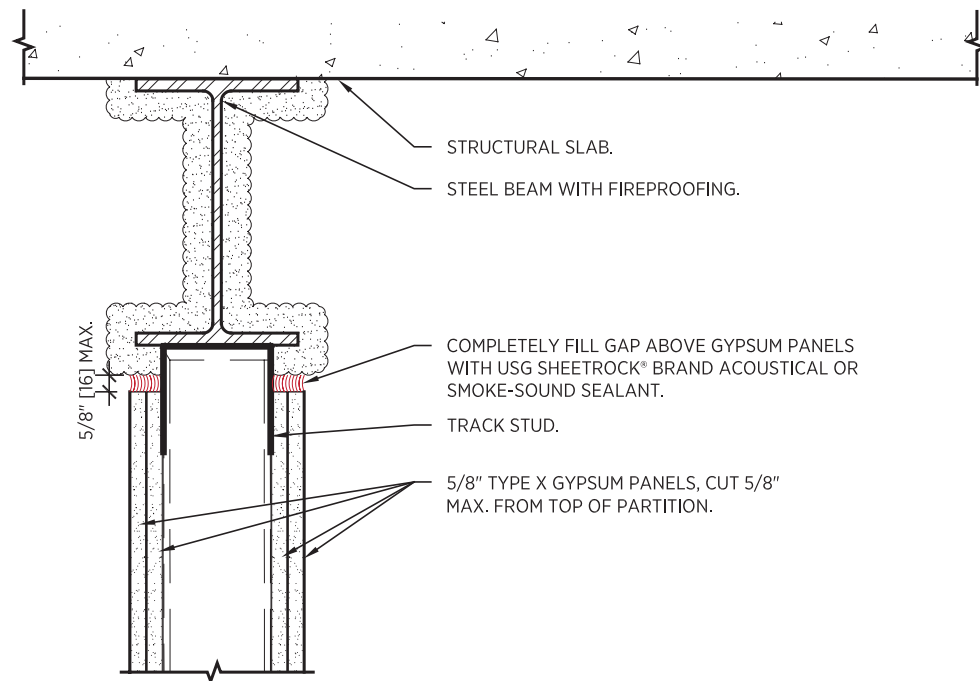
## SELECT YOUR SYSTEM

Reference the UL Online Certifications Directory at [ul.com](http://ul.com) for the most up-to-date information, material designations, thicknesses and fire ratings.

2-HR HEAD OF WALL UL HW-D-0626



2-HR HEAD OF WALL UL HW-D-0627

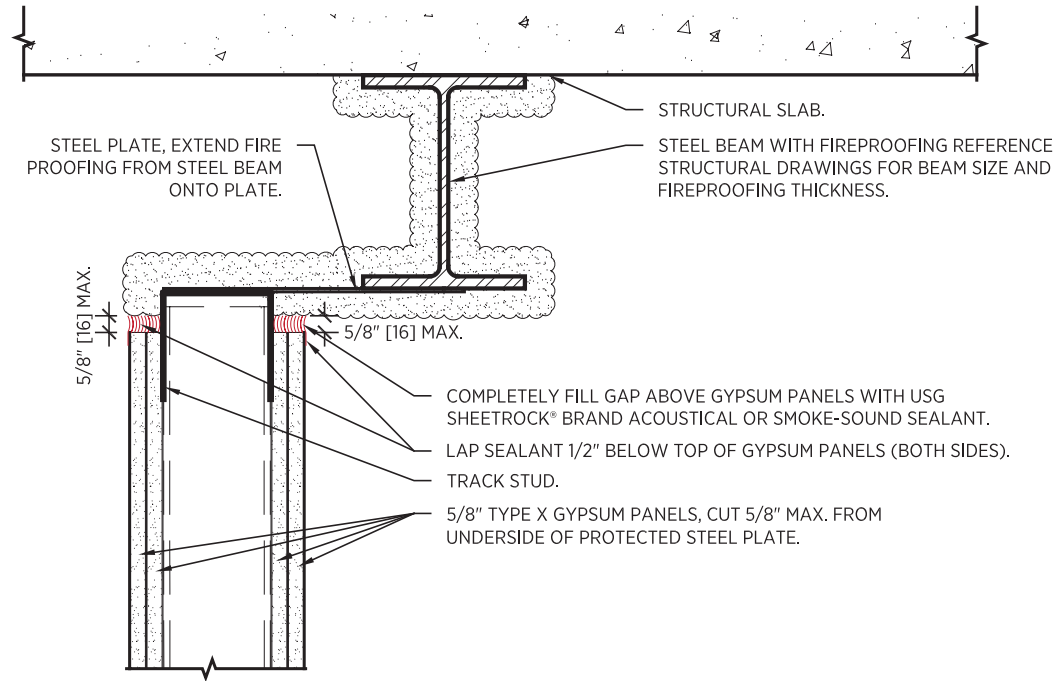


CONVENTIONAL  
WALL DYNAMIC JOINT  
SYSTEMS CONT.

## SELECT YOUR SYSTEM

Reference the UL Online Certifications Directory at [ul.com](http://ul.com) for the most up-to-date information, material designations, thicknesses and fire ratings.

### 2-HR HEAD OF WALL UL HW-D-0628



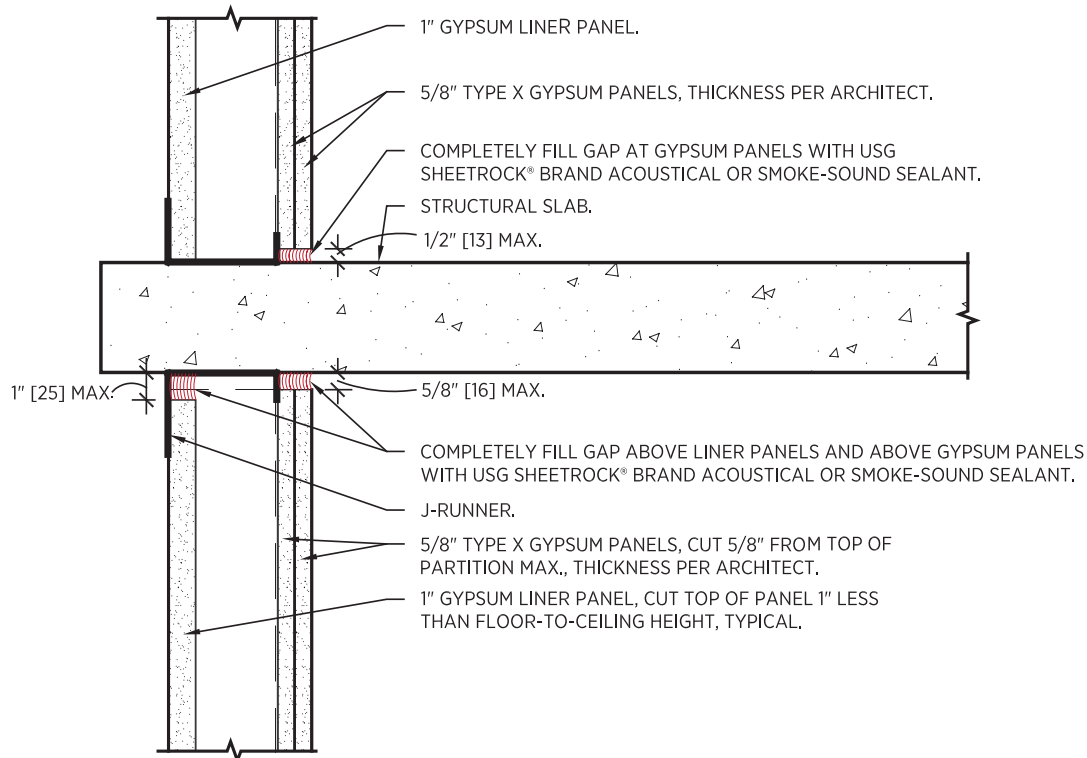


## SHAFTWALL DYNAMIC JOINT SYSTEMS

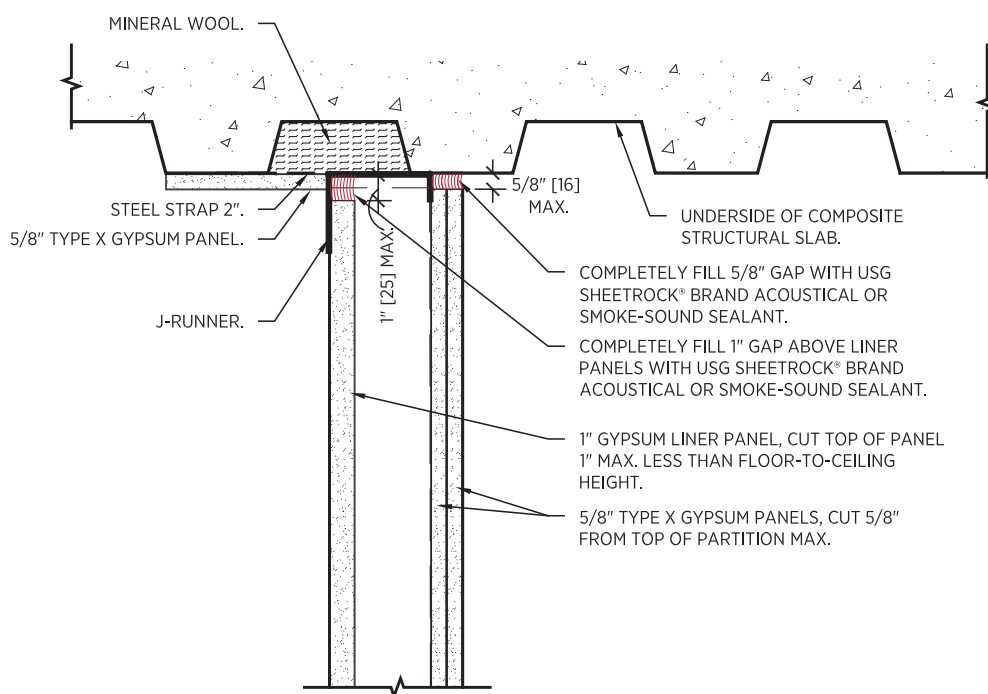
### SELECT YOUR SYSTEM

Reference the UL Online Certifications Directory at [ul.com](http://ul.com) for the most up-to-date information, material designations, thicknesses and fire ratings.

#### 2-HR HEAD OF WALL UL HW-D-0603



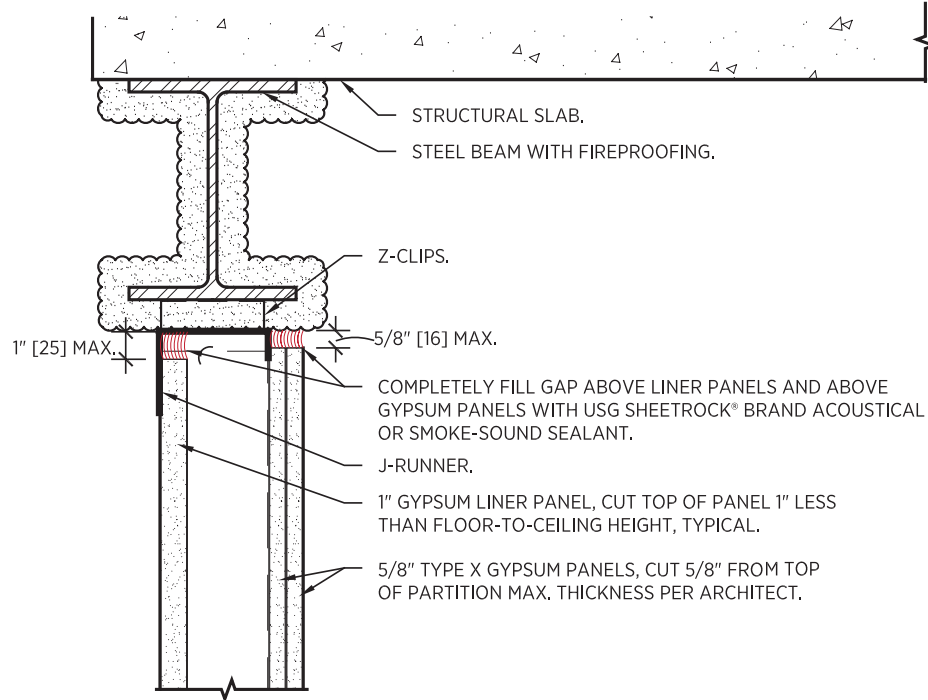
#### 2-HR HEAD OF WALL UL HW-D-0613



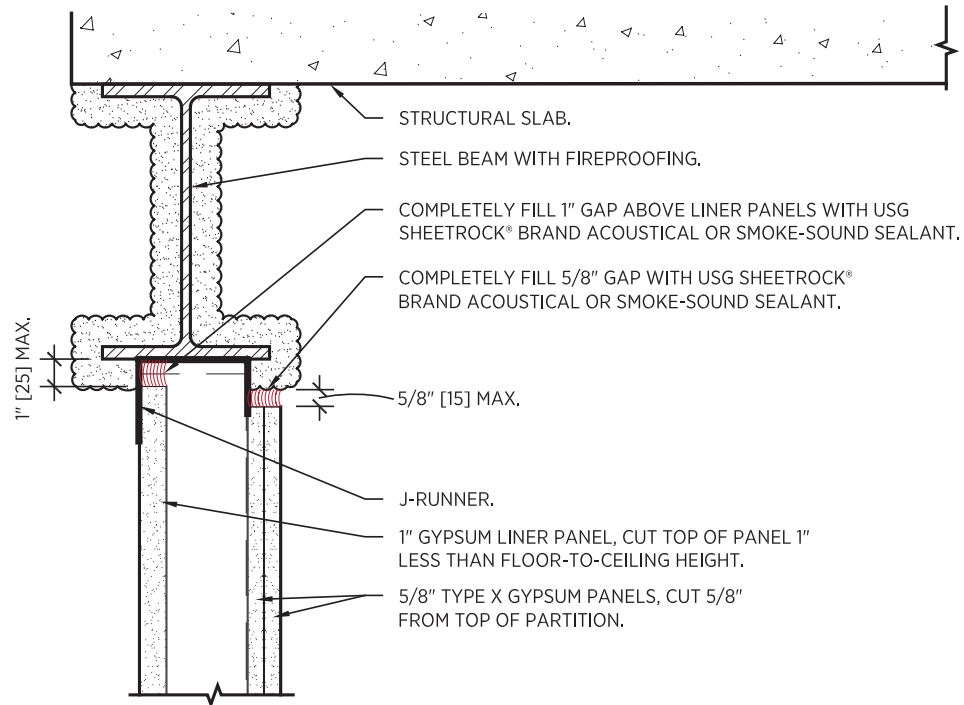
## SELECT YOUR SYSTEM

Reference the UL Online Certifications Directory at [ul.com](http://ul.com) for the most up-to-date information, material designations, thicknesses and fire ratings.

HEAD OF WALL UL HW-D-0609 (1-HR AND 2-HR)



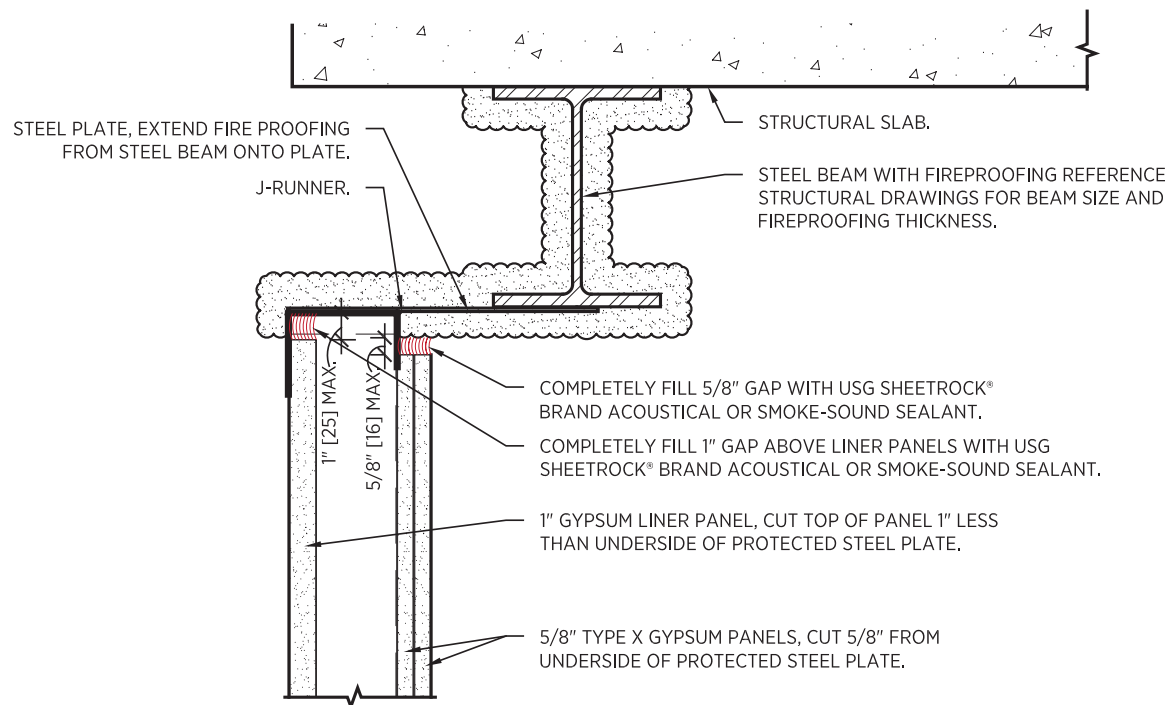
HEAD OF WALL UL HW-D-0610 (1-HR AND 2-HR)



## SELECT YOUR SYSTEM

Reference the UL Online Certifications Directory at [ul.com](http://ul.com) for the most up-to-date information, material designations, thicknesses and fire ratings.

### HEAD OF WALL UL HW-D-0611 (1-HR AND 2-HR)



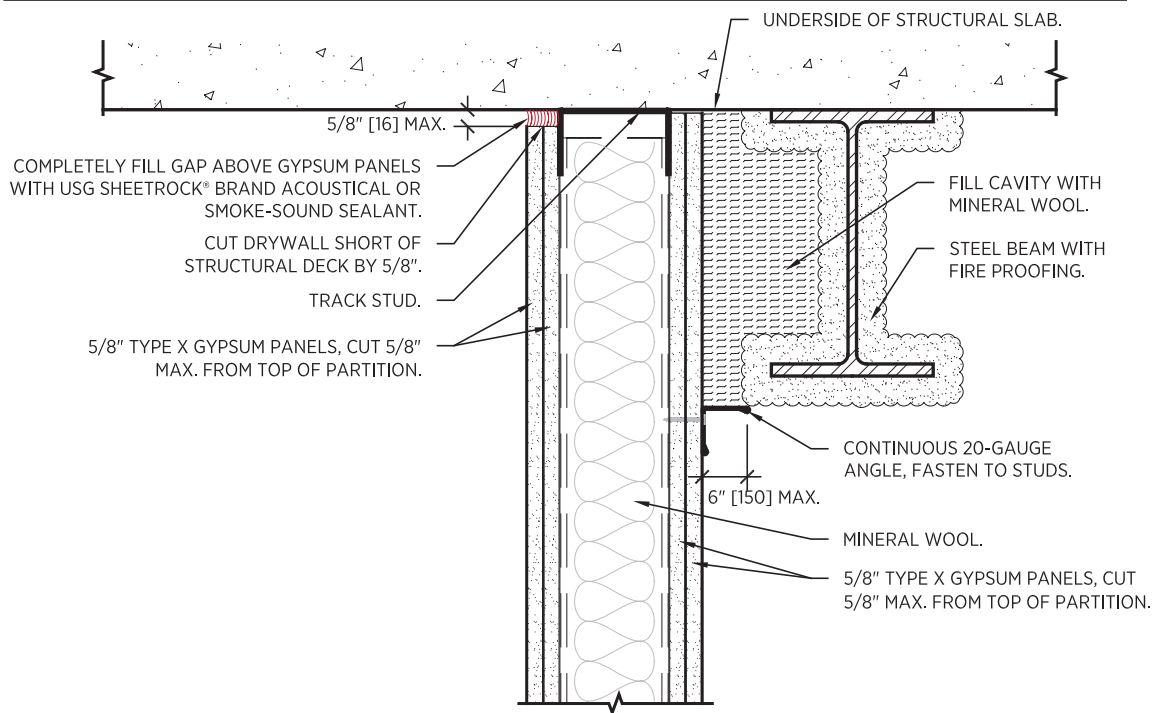


## ADDITIONAL JOINT SYSTEMS

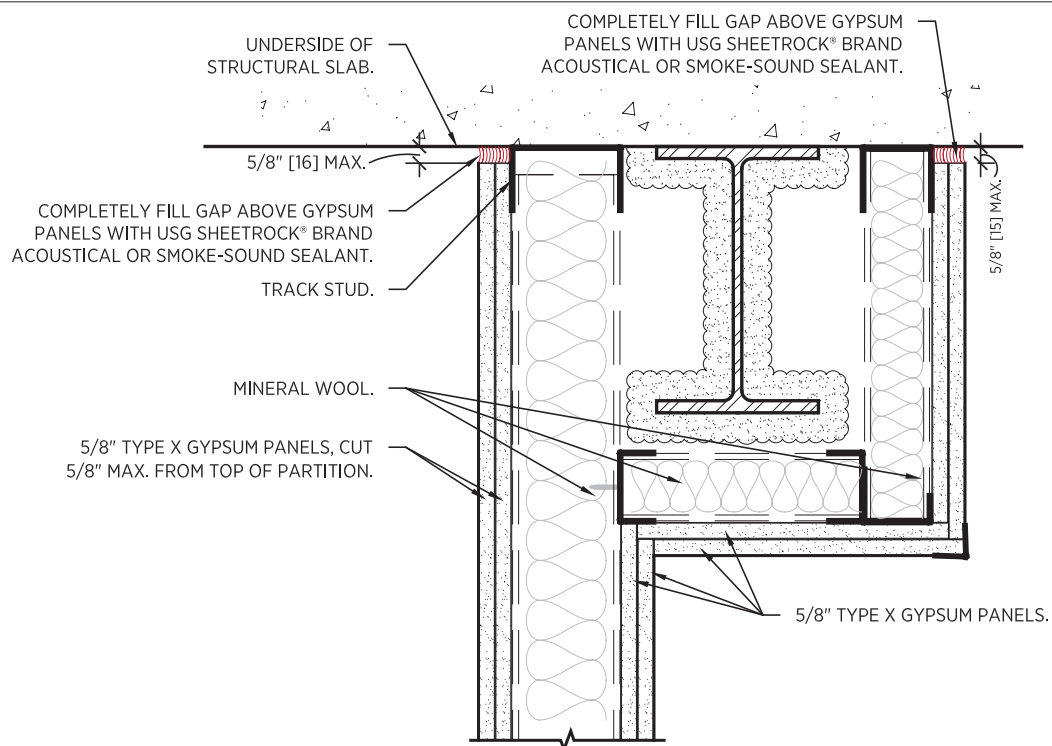
### SELECT YOUR SYSTEM

Reference the UL Online Certifications Directory at [ul.com](http://ul.com) for the most up-to-date information, material designations, thicknesses and fire ratings.

#### 2-HR HEAD OF WALL ADJACENT TO BEAM



#### 2-HR HEAD OF WALL AT BEAM

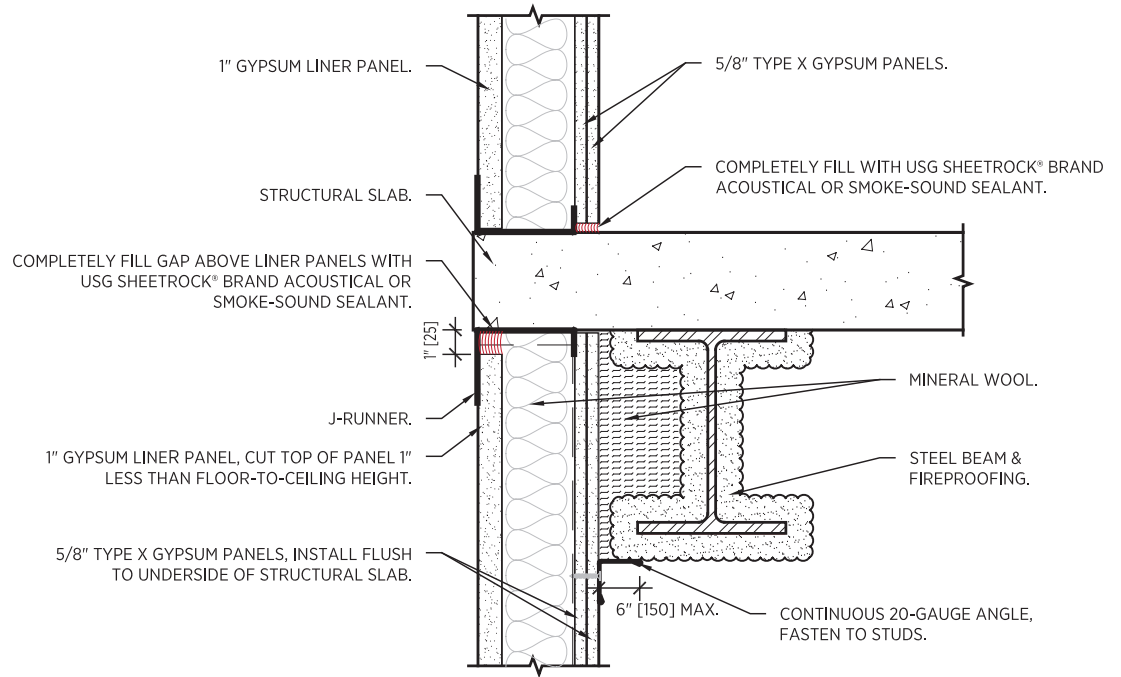


## SELECT YOUR SYSTEM

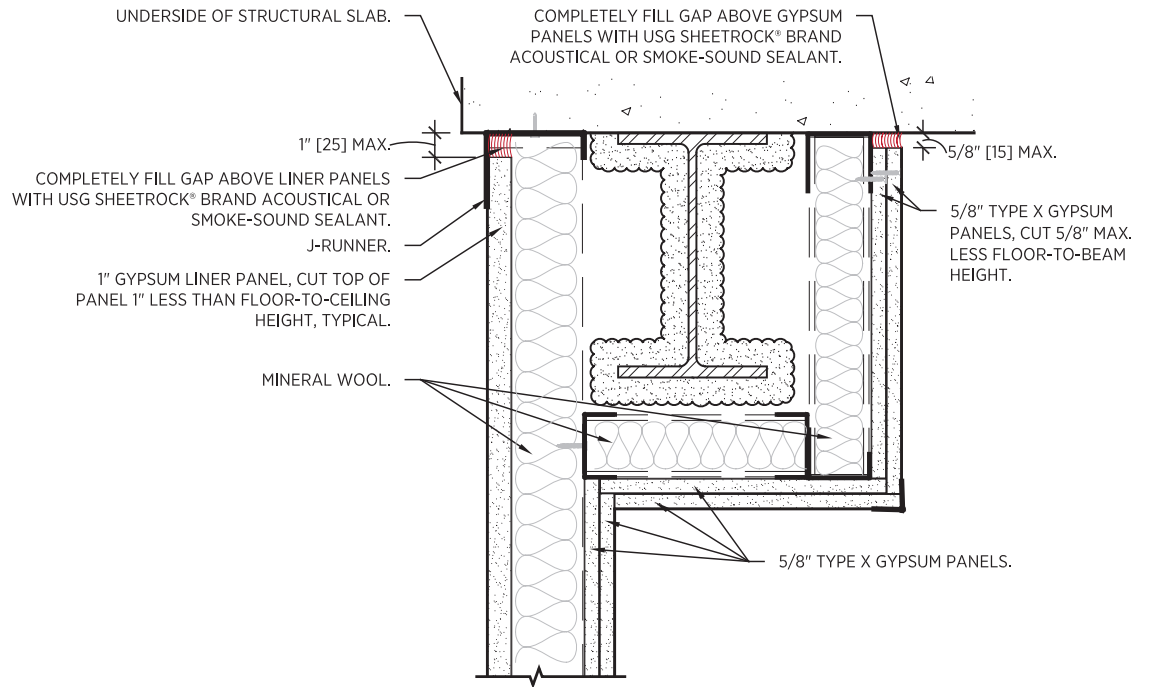
Reference the UL Online Certifications Directory at [ul.com](http://ul.com) for the most up-to-date information, material designations, thicknesses and fire ratings.

### ADDITIONAL JOINT SYSTEMS CONT.

#### 2-HR SHAFTWALL AT BEAM



#### 2-HR SHAFTWALL ADJACENT TO BEAM



## SELECT YOUR SYSTEM

# PENETRATION FIRESTOP SYSTEMS

## PERFORMANCE SELECTOR

### STEEL/IRON METALLIC

| Penetrating Item and Diameter     | Floor, Roof or Wall Type | Firestopping Material Min. Depth | Forming Material   | Annular Space |          | Rating |     | UL System Number |
|-----------------------------------|--------------------------|----------------------------------|--------------------|---------------|----------|--------|-----|------------------|
|                                   |                          |                                  |                    | Minimum       | Maximum  | F      | T   |                  |
| Steel or iron pipe up to 6"       | CW, CF                   | 1" Type AS                       | 3-1/2", min. 4 pcf | 3/8"          | 3/4"     | 3      | 0   | C-AJ-1020        |
| Steel or iron pipe up to 6"       | CW, CF                   | 2" Type AS                       | 2-1/2", min. 4 pcf | 3/8"          | 1"       | 3      | 0   | C-AJ-1020        |
| Steel or iron pipe up to 24"      | CW, CF                   | 1" Type FC                       | 3", min. 4 pcf     | 1/4"          | 1-15/16" | 3      | 0   | C-AJ-1081        |
| Steel or iron pipe up to 10"      | CW, CF                   | 1" Type FC                       | 3", min. 4 pcf     | 1/4"          | 4"       | 3      | 0   | C-AJ-1081        |
| Steel or iron pipe up to 4"       | GW                       | 1" Type FC                       | 2-1/2", min. 4 pcf | 1/4"          | 2-1/4"   | 2      | 0   | W-L-1027         |
| Steel or iron pipe up to 6"       | GW                       | 1" Type FC                       | 2-1/2", min. 4 pcf | 1"            | 1-5/8"   | 2      | 0   | W-L-1027         |
| Steel or iron pipe up to 4"       | GW                       | 1/2" Type FC                     | 2-1/2", min. 4 pcf | 1/4"          | 1-5/8"   | 1      | 0   | W-L-1039         |
| Steel or iron pipe up to 3-1/2"   | GW                       | 1" Type FC                       | —                  | 1/4"          | 1-5/8"   | 2      | 0   | W-L-1063         |
| Steel or iron pipe up to 4"       | GW                       | 1" Type AS                       | 2-1/2", min. 4 pcf | 1/4"          | 1-1/4"   | 2      | 0   | W-L-1064         |
| Steel or iron pipe up to 1"       | GW                       | 1" Type FC                       | 2-1/2", min. 4 pcf | 3/8"          | 1-5/8"   | 2      | 1-2 | W-L-1065         |
| Steel or iron pipe up to 4"       | GW                       | 1" Type FC                       | —                  | 1/4"          | 1-1/4"   | 1      | 0-1 | W-L-1087         |
| Insulated steel pipe up to 4"     | GW                       | 1/4" Type FC                     | —                  | 1/4"          | 1/2"     | 2      | 1   | W-L-5043         |
| Insulated steel pipe up to 3-1/2" | GW                       | 1" Type FC                       | —                  | 1/2"          | 5/8"     | 2      | 3/4 | W-L-5044         |

### CONDUIT

|  |        |              |                    |      |        |   |     |           |
|--|--------|--------------|--------------------|------|--------|---|-----|-----------|
| Nominal 4"   | CW, CF | 1" Type AS   | 3-1/2", min. 4 pcf | 3/8" | 3/4"   | 3 | 0   | C-AJ-1020 |
| Nominal 4"   | CW, CF | 2" Type AS   | 2-1/2", min. 4 pcf | 3/8" | 1"     | 3 | 0   | C-AJ-1020 |
| Steel conduit up to 6" or metallic tubing up to 4" | CW, CF | 1" Type FC   | 3", min. 4 pcf     | 1/4" | 4"     | 3 | 0   | C-AJ-1081 |
| Steel conduit or metallic tubing up to 4"          | GW     | 1" Type FC   | 2-1/2", min. 4 pcf | 1/4" | 2-1/4" | 2 | 0   | W-L-1027  |
| Nominal 4" or metallic tubing up to 4"             | GW     | 1/2" Type FC | 2-1/2", min. 4 pcf | 1/4" | 1-5/8" | 1 | 0-1 | W-L-1039  |
| Steel conduit or metallic tubing up to 3-1/2"      | GW     | 1" Type FC   | —                  | 1/4" | 1-5/8" | 2 | 0   | W-L-1063  |
| Steel conduit or metallic tubing up to 4"          | GW     | 1" Type AS   | 2-1/2", min. 4 pcf | 1/4" | 1-1/4" | 2 | 0   | W-L-1064  |
| Nominal 1" or metallic tubing up to 1"             | GW     | 1" Type FC   | 2-1/2", min. 4 pcf | 3/8" | 1-5/8" | 2 | 2   | W-L-1065  |
| Nominal 4" or metallic tubing up to 4"             | GW     | 1" Type FC   | —                  | 1/4" | 1-1/4" | 1 | 0-1 | W-L-1087  |

### COPPER

|                                   |        |              |                    |      |        |   |     |           |
|-----------------------------------|--------|--------------|--------------------|------|--------|---|-----|-----------|
| Pipe up to 6"                     | CW, CF | 1" Type FC   | 3", min. 4 pcf     | 1/4" | 4"     | 3 | 0   | C-AJ-1081 |
| Tubing and pipe up to 4"          | CW, CF | 1" Type FC   | 3", min. 4 pcf     | 1/4" | 4"     | 3 | 0   | C-AJ-1081 |
| Pipe up to 6"                     | GW     | 1" Type FC   | 2-1/2", min. 4 pcf | 1"   | 1-5/8" | 2 | 0   | W-L-1027  |
| Pipe up to 4"                     | GW     | 1/2" Type FC | 2-1/2", min. 4 pcf | 1/4" | 1-5/8" | 1 | 0   | W-L-1039  |
| Tubing up to 4"                   | GW     | 1" Type FC   | —                  | 1/4" | 1-5/8" | 2 | 0   | W-L-1063  |
| Tubing up to 4"                   | GW     | 1" Type FC   | —                  | 1/4" | 1-1/4" | 1 | 0   | W-L-1087  |
| Insulated tubing up to 4"         | GW     | 1/4" Type FC | 2", min. 4 pcf     | 1/4" | 1/2"   | 2 | 1   | W-L-5043  |
| Insulated pipe or tubing up to 4" | GW     | 1" Type FC   | 1", min. 4 pcf     | 1/2" | 5/8"   | 2 | 3/4 | W-L-5044  |

## SELECT YOUR SYSTEM

# PENETRATION FIRESTOP SYSTEMS

## PERFORMANCE SELECTOR

### CABLES

| Penetrating Item and Diameter | Floor, Roof or Wall Type | Firestopping Material Min. Depth | Forming Material   | Annular Space |         | Rating |     | UL System Number |
|-------------------------------|--------------------------|----------------------------------|--------------------|---------------|---------|--------|-----|------------------|
|                               |                          |                                  |                    | Minimum       | Maximum | F      | T   |                  |
| Cables                        | CW, CF                   | 1" Type FC                       | 3", min. 4 pcf     | 1/4"          | 4"      | 3      | 0   | C-AJ-3045        |
| Cables                        | GW                       | 1" Type FC                       | 3", min. 4 pcf     | 1/4"          | 4-1/2"  | 2      | 0   | W-L-3023         |
| Cables                        | GW                       | 1/2" Type FC                     | 3-7/8", min. 4 pcf | 1/2"          | 3-7/8"  | 1      | 0-1 | W-L-3034         |

### AIR DUCTS

|  |    |              |                    |       |        |   |     |          |
|--|----|--------------|--------------------|-------|--------|---|-----|----------|
| Steel duct, 24-ga., up to 3" x 10"     | GW | 1/2" Type FC | 2-1/2", min. 4 pcf | 7/16" | 1-5/8" | 1 | 0   | W-L-7001 |
| Steel duct, 28-ga. galv., nom. 4" x 6" | GW | 1" Type FC   | 2-1/2", min. 4 pcf | 1/2"  | 1-5/8" | 2 | 1/2 | W-L-7002 |

### 8" BLANK (NO PENETRANT)

|  |        |            |                |   |    |   |     |           |
|--|--------|------------|----------------|---|----|---|-----|-----------|
| 4-1/2" concrete floor,<br>5" concrete wall | CW, CF | 1" Type FC | 3", min. 4 pcf | — | 8" | 3 | 0-1 | C-AJ-0032 |
|--|--------|------------|----------------|---|----|---|-----|-----------|

#### Codes for Type of Floor, Roof or Wall:

CF—Concrete Floor  
 CW—Concrete Wall  
 FSD—Fluted Steel Deck  
 GW—Gypsum Wall  
 WF—Wood Floor

#### Codes for Firestopping Material:

Type AS—USG Sheetrock® Brand Acoustical Sealant and USG Sheetrock® Brand Firecode® Smoke-Sound Sealant  
 Type FC—USG Sheetrock® Brand Firecode® Compound



## SELECT YOUR SYSTEM

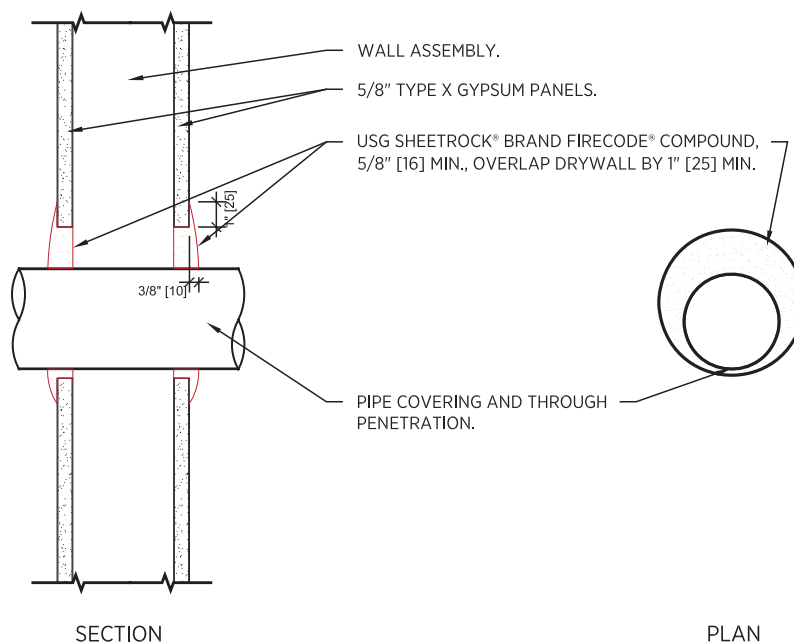
# PENETRATION FIRESTOP SYSTEMS

## SYSTEM DETAILS

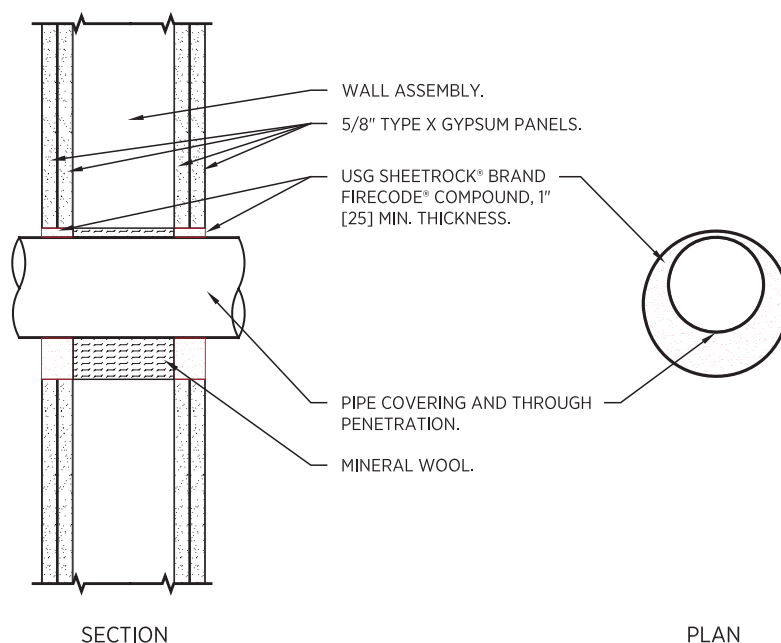
Reference the UL Online Certifications Directory at [ul.com](http://ul.com) for the most up-to-date information, material designations, thicknesses and fire ratings.

### WALLS

#### SYSTEM NO. W-L-1087 F-RATING 1-HR/T-RATING 0- AND 1-HR



#### SYSTEM NO. W-L-1027 F-RATING 2-HR/T-RATING 0-HR



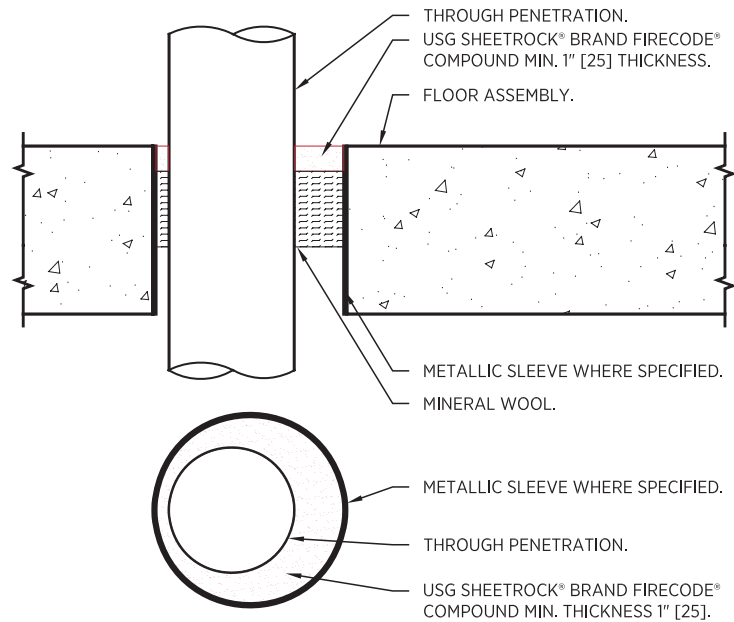


## SELECT YOUR SYSTEM

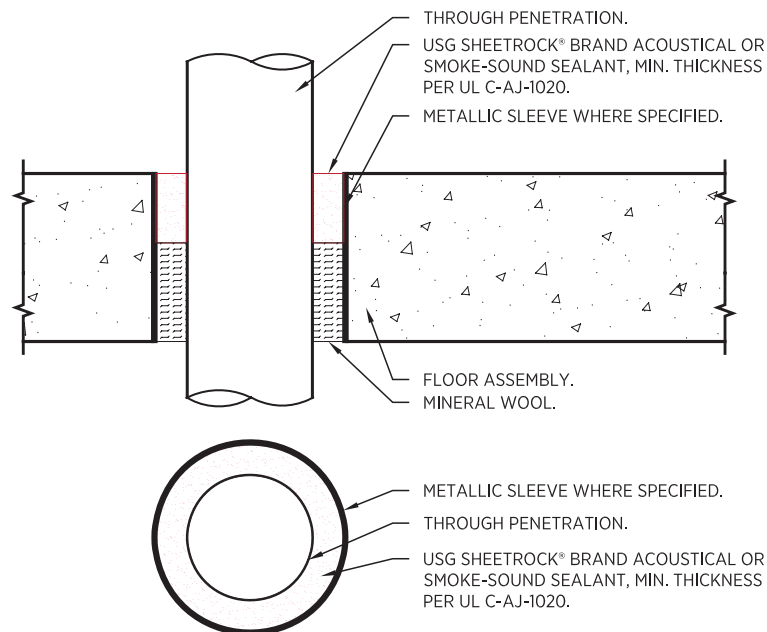
Reference the UL Online Certifications Directory at [ul.com](http://ul.com) for the most up-to-date information, material designations, thicknesses and fire ratings.

### FLOORS

#### SYSTEM NO. C-AJ-1081 F-RATING 2- AND 3-HR/T-RATING 0-HR



#### SYSTEM NO. C-AJ-1020 F-RATING 3-HR/T-RATING 1-HR

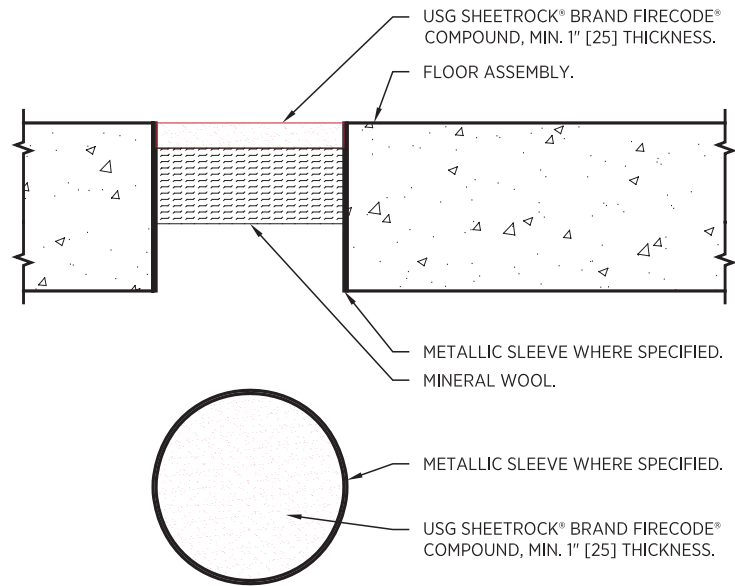


## SELECT YOUR SYSTEM

Reference the UL Online Certifications Directory at [ul.com](http://ul.com) for the most up-to-date information, material designations, thicknesses and fire ratings.

### FLOORS CONT.

SYSTEM NO. C-AJ-0032 F-RATING 2-HR AND 3-HR/T-RATING 0- AND 1-HR



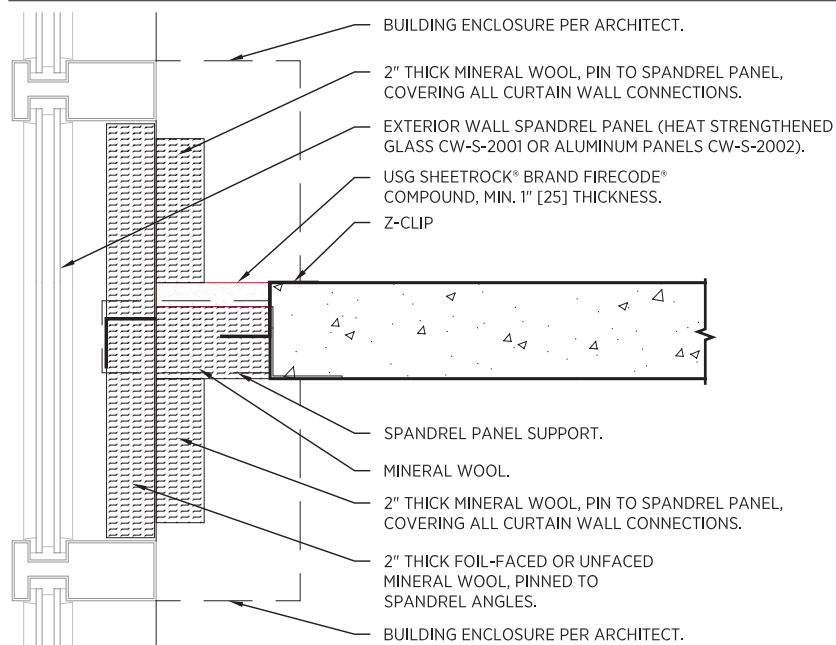
## SELECT YOUR SYSTEM

# FIRE CONTAINMENT CURTAIN WALL SYSTEMS

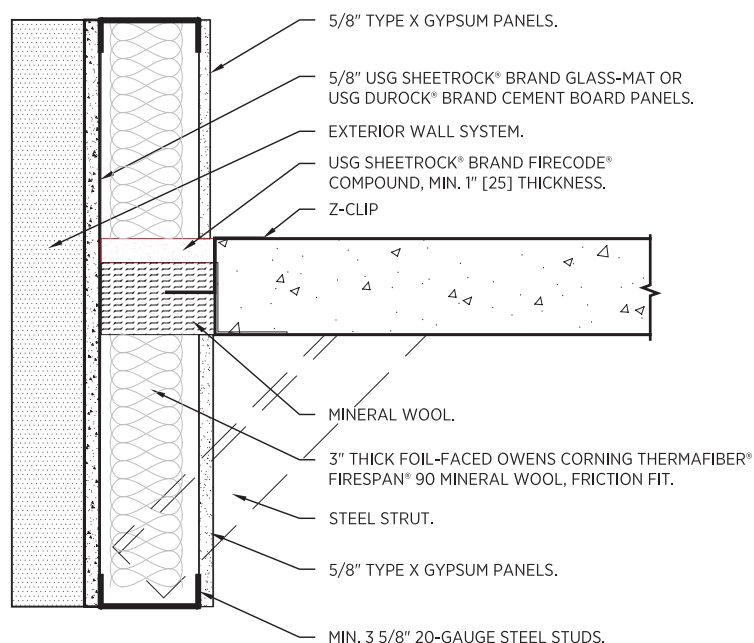
## SYSTEM DETAILS

Reference the UL Online Certifications Directory at [ul.com](http://ul.com) for the most up-to-date information, material designations, thicknesses and fire ratings.

### SYSTEM NO. CW-S-2001 AND CW-S-2002



### SYSTEM NO. CW-S-1001



# GOOD DESIGN PRATICES

This section is an overview of good design, application, installation and safety concerns that should be addressed when USG products and systems are used. It outlines some major issues, but is not intended to be a comprehensive review. No attempt is made at completeness.

We recommend that architects and contractors seek the assistance of safety professionals, especially at the professional construction site, because there are many factors to consider that are not included here. For more information on safety and material handling, please refer to Chapter 13 in *The Gypsum Construction Handbook* or visit [usg.com](http://usg.com) for more information.

- 1 **SYSTEM PERFORMANCE**  
United States Gypsum Company conducts tests on products and systems to meet performance requirements of established test procedures specified by various agencies. Upon written request we will provide test certification for published fire, structural and other pertinent data covering systems designed and constructed according to our published specifications. Substitutions of any of the components are not recommended and are not endorsed by the United States Gypsum Company.
- 2 **ADDITIONAL INFORMATION**  
For specific product information, contact your local USG representative or call USG Technical Service at 800 USG.4YOU (874-4968).
- 3 **FLOOR/CEILING APPLICATIONS**  
USG Firestop Systems installed in floor/ceiling applications are not designed to support loads from pedestrian or vehicular traffic.
- 4 **STORAGE**  
USG Sheetrock® Brand Acoustical Sealant and USG Sheetrock® Brand Firecode® Smoke-Sound Sealant can be stored up to one year in unopened containers in dry areas. Store sealants between temperature of 41°F (5°C) and 80°F (26.7°C). Protect from freezing.  
  
USG Sheetrock® Brand Firecode® Compound can be stored up to nine months in unopened containers in dry areas and under good storage conditions. Protect from freezing.



## SPECIFY YOUR SYSTEM

# APPLICATION GUIDE SPECIFICATIONS

This guide specification is provided to assist in specification of USG Firestopping Construction Joints and Penetration Systems. If you have additional questions or would like more information regarding this or other USG products and systems, contact your local USG representative or call USG Technical Service at 800 USG.4YOU (874-4968).

## PART 1: GENERAL

### 1.1

#### SCOPE

Specify to meet requirements.

### 1.2

#### QUALIFICATIONS

All materials described in this folder, manufactured by or for United States Gypsum Company, shall be installed in accordance with their printed directions.

### 1.3

#### DELIVERY AND STORAGE OF MATERIALS

All materials shall be delivered in their original unopened packages and stored in an enclosed shelter providing protection from damage and exposure to the elements. Damaged or deteriorated materials shall be removed from the premises.

### 1.4

#### ENVIRONMENTAL CONDITIONS

In cold weather, installation of firestopping products shall not begin until the building is enclosed, with permanent heating and cooling in operation. Maintain minimum temperature of 55°F within the building during and after installation for USG Sheetrock® Brand Firecode® Compound, USG Sheetrock® Brand Acoustical Sealant and USG Sheetrock® Brand Smoke-Sound Sealant.

Adequate ventilation shall be provided to carry off excess moisture. Not to be applied to moist or contaminated surfaces or areas continuously immersed in water.

All installed USG Sheetrock® Brand firestop products should not be exposed to continuous operating temperatures above 125°F.

## PART 2: MATERIALS

### 2.1

#### MATERIALS

##### A. Firestopping

1. USG Sheetrock® Brand Firecode® Compound: Available in 15 lb. (6.8 kg) bag
2. USG Sheetrock® Brand Smoke-Sound Sealant: Available in 29 oz. (858 ml) cartridge
3. USG Sheetrock® Brand Acoustical Sealant: Available in 29 oz. (858 ml) cartridge and 5 gal. (20 L) pail

# APPLICATION GUIDE SPECIFICATIONS

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## PART 3: EXECUTION

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### 3.1

#### **INSULATION APPLICATION**

Ensure all surfaces are dry and clean of dirt, dust, grease, oil, efflorescence, loose material or other matter. With a serrated knife, cut nominal 4 lb./cu. ft. mineral wool insulation slightly wider than the opening. Compress and tightly fit minimum insulation thickness per system specifications.

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### 3.2

#### **FIRESTOPPING SEALANT APPLICATION**

##### **A. Trowel and Caulk Gun Application**

For through wall penetrations where piping is installed either concentrically or eccentrically within a cylindrical sleeve, the design professional shall specify a spacer, packing material or backer rod that is compatible/nonreactive with both the cylindrical outer sleeve and the pipe material. The spacer and packing material (or backer rod) shall also serve the function of preventing the pipe from contacting the outer sleeve.

In through wall penetrations where pipe is placed within a protective sleeve and sealant is placed in the annular space between the pipe and the sleeve, the sleeve must be vented to allow proper curing of the sealant.

For all other joints, the sealant application should be specified by a design professional who should give consideration to using a backer rod or bond tape where the gap exceeds 5/8 in. In joints too shallow to accept a backer rod, use a bond breaker tape to prevent three-sided adhesion.

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### 3.3

#### **SEALANT LIMITATIONS**

1. Not to be applied to moist areas where frost or condensation is present or in direct contact with water.
2. Protect container from freezing and extreme heat.
3. Maintain 55°F (13°C) minimum temperature within the building during and after installation.
4. Product should be stored at a temperature neither below 41°F (5°C) nor exceeding 80°F (26.7°C).
5. Not to be used in applications where the surrounding materials (partitions, floors, penetrations, etc.) will exceed sustained temperatures of 125°F.
6. Not for use with CPVC or PVC products; consult with manufacturers for compatibility.
7. Not intended to be painted. Sealant will shrink during curing process.
8. Do not apply USG Sheetrock® Brand Acoustical Sealant in areas where abuse or abrasion of the sealant is likely.
9. There may be discoloration of sealant when in contact with certain types of metal such as copper.

## NOTES





## CONTACT INFORMATION

Manufactured by  
United States Gypsum Company  
550 West Adams Street  
Chicago, IL 60661

## CUSTOMER SERVICE

800 950-3839

## TECHNICAL SERVICE

800 USG.4YOU (874-4968)

## WEBSITES

usg.com  
usgdesignstudio.com

## PRODUCT INFORMATION

See usg.com for the most up-to-date product information.

### NOTE

Products described here may not be available in all geographic markets. Consult your USG Company sales office or representative for information. The information in this document is subject to change without notice. USG Corporation assumes no responsibility for any errors that may inadvertently appear in this document.

### NOTICE

We shall not be liable for incidental and consequential damages, directly or indirectly sustained, nor for any loss caused by application of these goods not in accordance with current printed instructions or for other than the intended use. Our liability is expressly limited to replacement of defective goods. Any claim shall be deemed waived unless made in writing to us within thirty (30) days from date it was or reasonably should have been discovered.

### SAFETY FIRST!

Follow good safety and industrial hygiene practices during handling and installation of all products and systems. Take necessary precautions and wear the appropriate personal protective equipment as needed. Read Safety Data Sheets and related literature on products before specification and/or installation.

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