COMPOSITE
TOTALJOIST

# ACOUSTIC AND FIRESTOP GUIDE

iSPAN® SYSTEMS

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COMPOSITE
TOTALJOIST

# FLOOR/CEILING ASSEMBLIES

# INTRODUCTION

# INTRODUCTION TO FIRE RATINGS

Fire resistant floor-ceiling assemblies serve as a barrier to the spread of fire between separate spaces in multi-residential or multi-use buildings. Floor-ceiling assemblies are tested for their fire endurance in accordance with UL 263 in the United States, or to CAN-ULC S101 in Canada. Typical requirements in building codes are for a 1 hour or 2 hour fire resistance rating (higher ratings may be required). Fire resistant floor-ceiling assemblies must be constructed in accordance with the tested construction as described in the applicable UL or ULC listing.

Various options are available depending on the listing. For example, UL G555 / ULC I525 allows for the protection of structural steel beams provided that the beam is contained within the floor plenum. Various penetrations for light fixtures or HVAC ducts are allowed as outlined in the associated listing; these options are illustrated within this guide.

| STC | Description of Potential Sound Transfer |
|---|---|
| 25 | Normal Speech can be understood quite clearly. |
| 30 | Loud speech can be understood fairly well. |
| 35 | Loud speech audible but not intelligible. |
| 42 | Loud speech audible as a murmur. |
| 45 | Must strain to hear loud speech. |
| 48 | Some loud speech barely audible. |
| 50 | Loud speech not audible. |

## NOTES

Fire Resistance Ratings are based on CAN/ULC S101 tests (in Canada) or UL263 (in the US). Full scale floors are built and tested by subjecting them to a standard fire up to a temperature of 1,260°C. The floor must withstand this sustained fire for the duration of the test.

Acoustic tests are based on ASTM E90 (STC) and ASTM E492 (IIC). Sounds loss and sound transmission are measured by a series of instruments from which the ratings are calculated for design.

The acoustic ratings are based on various finished floors. Finished floors can be applied to Composite TotalJoist Floor Systems in the same way that they are applied in traditional floors.

# INTRODUCTION TO ACOUSTIC RATINGS

Acoustic ratings provide a means to rank a floor's ability to isolate sound. A higher acoustic rating indicates a floor is better able to stop the transmission of sound through it. Helpful planning and construction points on preventing acoustical problems are given in a publication by the National Association of Home Builders Research Foundation titled *Acoustical Manual–Apartment and Home Construction*. Another reference is *Sound, Noise, and Vibration Control* by Lyle Yerges, 1969, Van Nostrand-Reinhold. Sound transmission class (STC) ratings describe a floor's ability to isolate airborne sounds such as speech. The significance of STC numbers is illustrated in the following chart from the Acoustical and Insulation Materials Association.

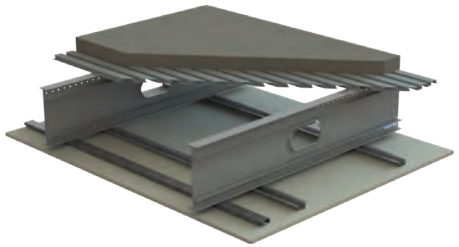
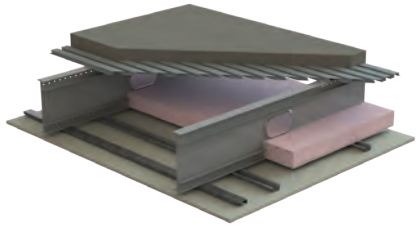
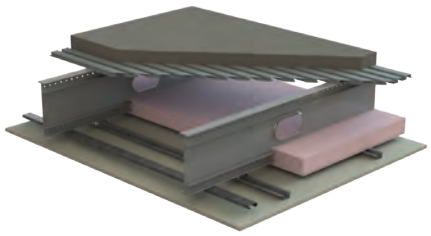
In addition to being rated for airborne sound transmission, floors are also rated by IIC (Impact Insulation Class). IIC values rate the capacity of floor assemblies to control impact noise such as a person's heal hitting the floor. Use of light-frame construction systems challenges designers to insulate against noise rather than simply relying on the massiveness of heavy walls and floors.

There are several methods to install wood flooring products over the Composite TotalJoist Floor Systems:

- For installation over concrete slabs, refer to the instructions published by The Wood Flooring Manufacturers Association at www.nofma.org.

There are also several methods to install ceramic tile on Composite TotalJoist Floor Systems. For guidance, refer to the *2009 TCA Handbook for Ceramic Tile Installation* published by The Tile Council of North America, Inc. Visit their website at www.tileusa.com. Inside you will find many approved installation systems suitable for the Composite TotalJoist Floor Systems.

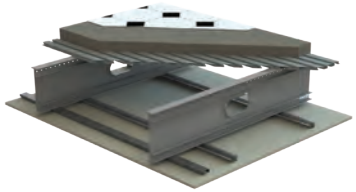
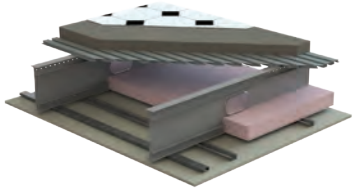
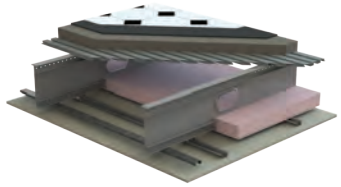
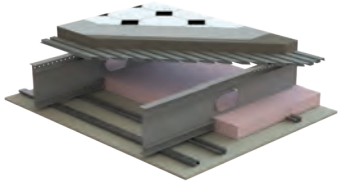
# BASE ASSEMBLIES

| Slab Depth | Assembly and Approval Designation | Assembly Breakdown | FFR | STC | IIC |
|---|---|---|---|---|---|
| 3" | Unrestrained/Restrained UL G555 / ULC I525<br>  | **Structure:**<br>• CompositeTotalJoist™<br>• Total-Deck™<br>**Topping:**<br>• Min. 3" Normal Weight Concrete, 3.0 ksi<br>**Finished Floor:**<br>• None<br>**Ceiling:**<br>• 7/8" Hat Channel<br>• 5/8" Type C Gypsum Board | 2 HR | 50[1] | 25[1] |
| 3" + Insulation | Unrestrained/Restrained UL G555 / ULC I525<br>  | **Structure:**<br>• CompositeTotalJoist™<br>• Total-Deck™<br>**Topping:**<br>• Min. 3" Normal Weight Concrete, 3.0 ksi<br>**Finished Floor:**<br>• None<br>**Ceiling:**<br>• 3-1/2" Fiberglass Batts<br>• 7/8" Hat Channel<br>• 5/8" Type C Gypsum Board | | 58[1] | 30[1] |
| 3" + Insulation | Unrestrained/Restrained UL G555 / ULC I525<br>  | **Structure:**<br>• CompositeTotalJoist™<br>• Total-Deck™<br>**Topping:**<br>• Min. 3" Normal Weight Concrete, 3.0 ksi<br>**Finished Floor:**<br>• None<br>**Ceiling:**<br>• 3-1/2" Fiberglass Batts<br>• Pliteq GenieClip® RST 48" O.C.<br>• 7/8" Hat Channel<br>• 5/8" Type C Gypsum Board | | 58[1] | 35[1] |

[1] Denotes values based on lab tests [2] Denotes values based on field tests [3] Denotes values based on professional opinion

1. '**FRR**' is the UL/ULC Approved Fire Resistance Rating Tested as per CAN ULC S101
2. '**STC**' is the Sound Transmission Class
3. '**IIC**' is the Impact Insulation Class
4. See below for ratings specific to floor finishes
5. All topping thicknesses refer to the total thickness from bottom of deck to top of slab
6. Increasing slab thickness will increase STC & IIC ratings, contact iSpan systems LP for more information

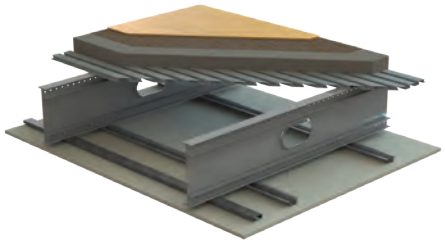
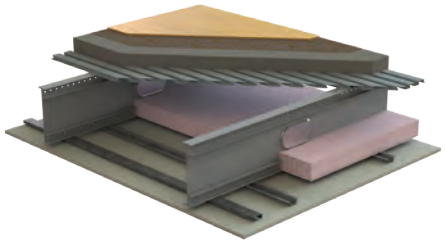
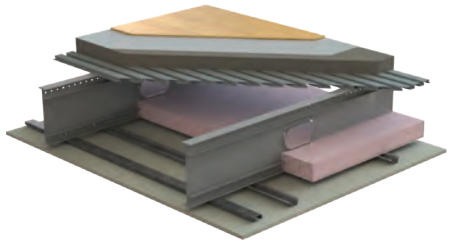
# VINYL FLOOR FINISH

| Slab Depth | Assembly and Approval Designation | Assembly Breakdown | FFR | STC | IIC |
|---|---|---|---|---|---|
| 3" | Unrestrained/Restrained UL G555 / ULC I525  | **Structure:**<br>• CompositeTotalJoist™<br>• Total-Deck™<br>**Topping:**<br>• Min. 3" Normal Weight Concrete, 3.0 ksi<br>**Finished Floor:**<br>• Vinyl<br>**Ceiling:**<br>• 7/8" Hat Channel<br>• 5/8" Type C Gypsum Board | 2 HR | 50[1] | – |
| 3" + Insulation | Unrestrained/Restrained UL G555 / ULC I525  | **Structure:**<br>• CompositeTotalJoist™<br>• Total-Deck™<br>**Topping:**<br>• Min. 3" Normal Weight Concrete, 3.0 ksi<br>**Finished Floor:**<br>• Vinyl<br>**Ceiling:**<br>• 3-1/2" Fiberglass Batts<br>• 7/8" Hat Channel<br>• 5/8" Type C Gypsum Board | | 58[1] | 36[3] |
| 3" + Insulation | Unrestrained/Restrained UL G555 / ULC I525  | **Structure:**<br>• CompositeTotalJoist™<br>• Total-Deck™<br>**Topping:**<br>• Min. 3" Normal Weight Concrete, 3.0 ksi<br>**Finished Floor:**<br>• 3/16" Vinyl Tile/Plank<br>• 1/16" Pliteq GenieMat®RST02<br>**Ceiling:**<br>• 3-1/2" Fiberglass Batts<br>• Pliteq GenieClip®RST 48" O.C.<br>• 7/8" Hat Channel<br>• 5/8" Type C Gypsum Board | | 57[1] | 58[1] |
| 3" + Insulation | Unrestrained/Restrained UL G555 / ULC I525  | **Structure:**<br>• CompositeTotalJoist™<br>• Total-Deck™<br>**Topping:**<br>• Min. 3" Normal Weight Concrete, 3.0 ksi<br>**Finished Floor:**<br>• Vinyl<br>• Insono AF3-130<br>**Ceiling:**<br>• 3-1/2" Fiberglass Batts<br>• 7/8" Hat Channel<br>• 5/8" Type X Gypsum Board | | 58[1] | 53[2] |

[1] Denotes values based on lab tests [2] Denotes values based on field tests [3] Denotes values based on professional opinion

Increasing slab thickness will increase STC & IIC ratings, contact iSpan Systems LP for more information

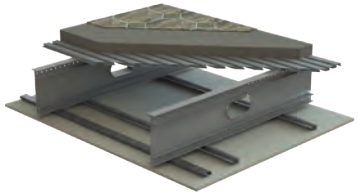
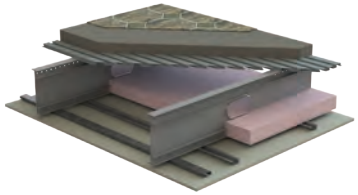
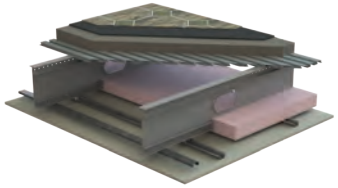
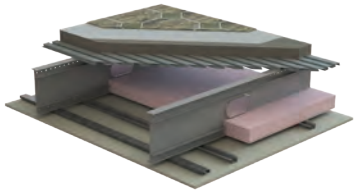
# LAMINATE FLOOR FINISH

| Slab Depth | Assembly and Approval Designation | Assembly Breakdown | FFR | STC | IIC |
|---|---|---|---|---|---|
| 3" | Unrestrained/Restrained UL G555 / ULC I525  | **Structure:**<br>• CompositeTotalJoist™<br>• Total-Deck™<br>**Topping:**<br>• Min. 3" Normal Weight Concrete, 3.0 ksi<br>**Finished Floor:**<br>• Laminate Flooring<br>• 1/16" Foam Underlay<br>**Ceiling:**<br>• 7/8" Hat Channel<br>• 5/8" Type C Gypsum Board | 2 HR | 50[1] | – |
| 3" + Insulation | Unrestrained/Restrained UL G555 / ULC I525  | **Structure:**<br>• CompositeTotalJoist™<br>• Total-Deck™<br>**Topping:**<br>• Min. 3" Normal Weight Concrete, 3.0 ksi<br>**Finished Floor:**<br>• Laminate Flooring<br>• 1/16" Foam Underlay<br>**Ceiling:**<br>• 3-1/2" Fiberglass Batts<br>• 7/8" Hat Channel<br>• 5/8" Type C Gypsum Board | | 58[1] | 47[3] |
| 3" + Insulation | Unrestrained/Restrained UL G555 / ULC I525  | **Structure:**<br>• CompositeTotalJoist™<br>• Total-Deck™<br>**Topping:**<br>• Min. 3" Normal Weight Concrete, 3.0 ksi<br>**Finished Floor:**<br>• Laminate Flooring<br>• Insonofloor BB<br>**Ceiling:**<br>• 3-1/2" Fiberglass Batts<br>• 7/8" Hat Channel<br>• 5/8" Type C Gypsum Board | | 58[1] | 59[2] |

[1] Denotes values based on lab tests [2] Denotes values based on field tests [3] Denotes values based on professional opinion

Increasing slab thickness will increase STC & IIC ratings, contact iSpan Systems LP for more information

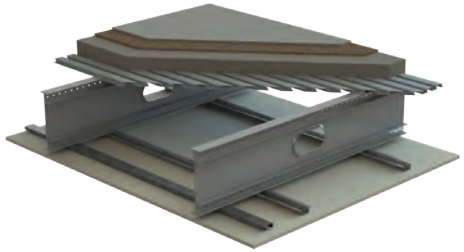
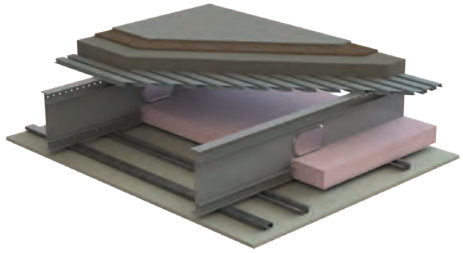
# CERAMIC TILE FLOOR FINISH

| Slab Depth | Assembly and Approval Designation | Assembly Breakdown | FFR | STC | IIC |
|---|---|---|---|---|---|
| 3" | Unrestrained/Restrained UL G555 / ULC I525  | **Structure:**<br>• CompositeTotalJoist™<br>• Total-Deck™<br>**Topping:**<br>• Min. 3" Normal Weight Concrete, 3.0 ksi<br>**Finished Floor:**<br>• Ceramic Tile<br>**Ceiling:**<br>• 7/8" Hat Channel<br>• 5/8" Type C Gypsum Board | 2 HR | 50[1] | – |
| 3" + Insulation | Unrestrained/Restrained UL G555 / ULC I525  | **Structure:**<br>• CompositeTotalJoist™<br>• Total-Deck™<br>**Topping:**<br>• Min. 3" Normal Weight Concrete, 3.0 ksi<br>**Finished Floor:**<br>• Ceramic Tile<br>**Ceiling:**<br>• 3-1/2" Fiberglass Batts<br>• 7/8" Hat Channel<br>• 5/8" Type C Gypsum Board | | 58[1] | 36[3] |
| 3" + Insulation | Unrestrained/Restrained UL G555 / ULC I525  | **Structure:**<br>• CompositeTotalJoist™<br>• Total-Deck™<br>**Topping:**<br>• Min. 3" Normal Weight Concrete, 3.0 ksi<br>**Finished Floor:**<br>• 5/16" Porcelain Tile<br>• 1/4" Pliteq GenieMat®RST05<br>**Ceiling:**<br>• 3-1/2" Fiberglass Batts<br>• Pliteq GenieClip®RST 48" O.C.<br>• 7/8" Hat Channel<br>• 5/8" Type C Gypsum Board | | 58[1] | 51[1] |
| 3" + Insulation | Unrestrained/Restrained UL G555 / ULC I525  | **Structure:**<br>• CompositeTotalJoist™<br>• Total-Deck™<br>**Topping:**<br>• Min. 3" Normal Weight Concrete, 3.0 ksi<br>**Finished Floor:**<br>• Laminate Flooring<br>• Insono AF3-130<br>**Ceiling:**<br>• 3-1/2" Fiberglass Batts<br>• 7/8" Hat Channel<br>• 5/8" Type C Gypsum Board | | 58[1] | 43[2] |

[1] Denotes values based on lab tests [2] Denotes values based on field tests [3] Denotes values based on professional opinion

Increasing slab thickness will increase STC & IIC ratings, contact iSpan Systems LP for more information

# CARPET FLOOR FINISH

| Slab Depth | Assembly and Approval Designation | Assembly Breakdown | FFR | STC | IIC |
|---|---|---|---|---|---|
| 3" | Unrestrained/Restrained UL G555 / ULC I525  | **Structure:**<br>• CompositeTotalJoist™<br>• Total-Deck™<br>**Topping:**<br>• Min. 3" Normal Weight Concrete, 3.0 ksi<br>**Finished Floor:**<br>• 3/8" Underpad<br>• Carpet<br>**Ceiling:**<br>• 7/8" Hat Channel<br>• 5/8" Type C Gypsum Board | 2 HR | 50[1] | – |
| 3" + Insulation | Unrestrained/Restrained UL G555 / ULC I525  | **Structure:**<br>• CompositeTotalJoist™<br>• Total-Deck™<br>**Topping:**<br>• Min. 3" Normal Weight Concrete, 3.0 ksi<br>**Finished Floor:**<br>• 3/8" Underpad<br>• Carpet<br>**Ceiling:**<br>• 3-1/2" Fiberglass Batts<br>• 7/8" Hat Channel<br>• 5/8" Type C Gypsum Board | | 58[1] | 87[2] |

[1] Denotes values based on lab tests [2] Denotes values based on field tests [3] Denotes values based on professional opinion

Increasing slab thickness will increase STC & IIC ratings, contact iSpan Systems LP for more information

# FIRESTOPPING

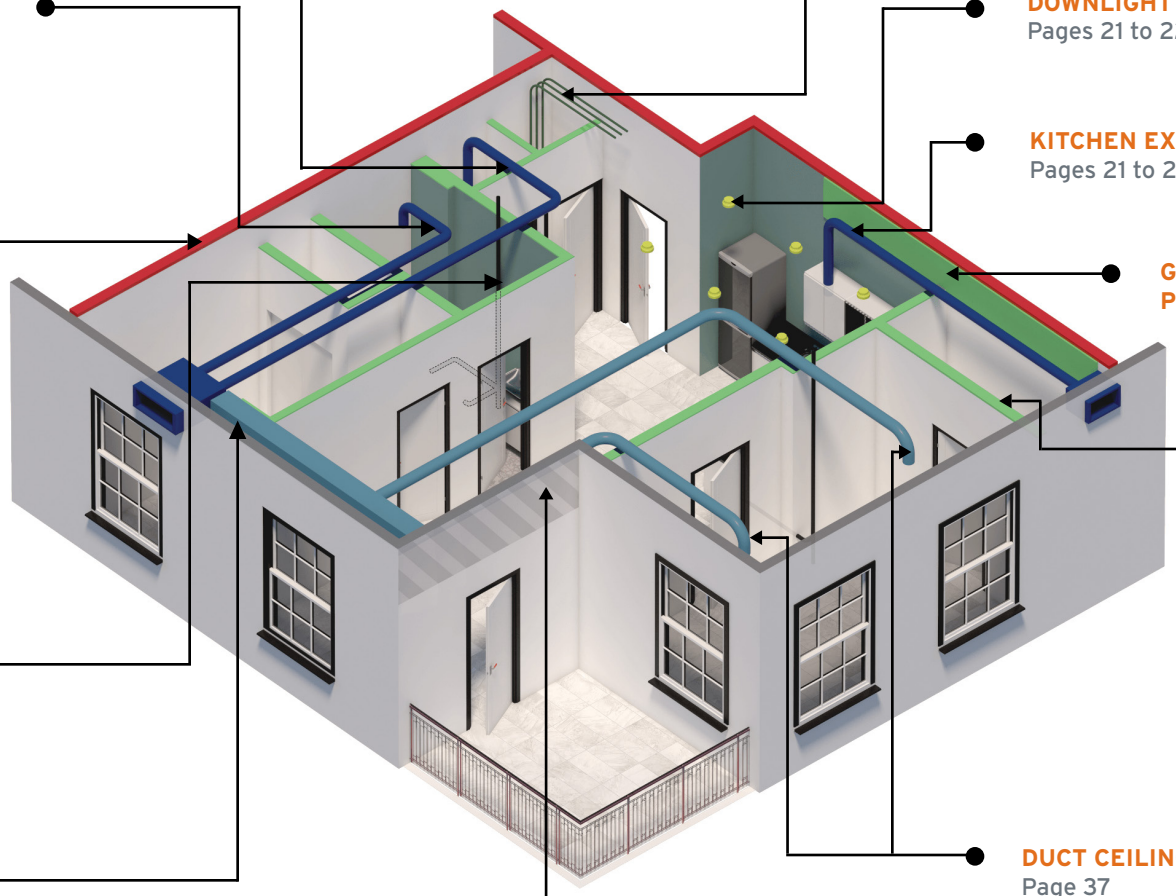
# INTRODUCTION TO FIRESTOPPING

In addition to typical penetrations, there are common firestopping details that can be easily integrated into the Composite TotalJoist floor system in order to facilitate continuity of horizontal and vertical fire separations, while maintaining constructability and workflow. These include:

- Head of wall firestopping at fire rated load bearing walls (Page 14)
- Joists penetrating through a fire rated wall (page 16)
- Continuing the ceiling separation at non-load bearing walls (Page 19)
- Transitioning from a Composite TotalJoist floor to a composite steel deck floor (page 17)
- Creating a "plenum box" (page 20)

Pipe, conduit, or cable penetrations in the floor-ceiling assembly can be made without compromising the fire separation by using firestop systems that are UL/ULC Listed. There are several manufacturers of applicable firestop solutions. A complete list of all applicable firestop solutions can be found in the UL online directory. For convenience, a summary of a range of firestop solutions are presented in this section. For detailed installation information, see the associated UL or ULC listing. Refer to Table 1 for an index of firestop solutions by penetrant type and type of firestop.

For penetrations such as lights, ducts, and outlet boxes, see the "Allowable Penetration Details" section of the Composite TotalJoist Technical Guide.



**DRYER EXHAUST CEILING PENETRATION**
Pages 26 to 27

**BATHROOM FAN EXHAUST CEILING PENETRATION**
Pages 26 to 27

**HEAD OF WALL FIRESTOPPING**
Pages 14 to 19

**FLOOR/CEILING PIPE PENETRATION**
Pages 29 to 37

**MAIN DUCT CEILING PENETRATION**
Page 37

**WIRE PENETRATIONS**
Pages 36 to 37

**DOWNLIGHT CEILING PENETRATIONS**
Pages 21 to 22

**KITCHEN EXHAUST CEILING PENETRATION**
Pages 21 to 22

**GYPSUM BOARD INSTALLED PRIOR TO DUCT INSTALLATION**

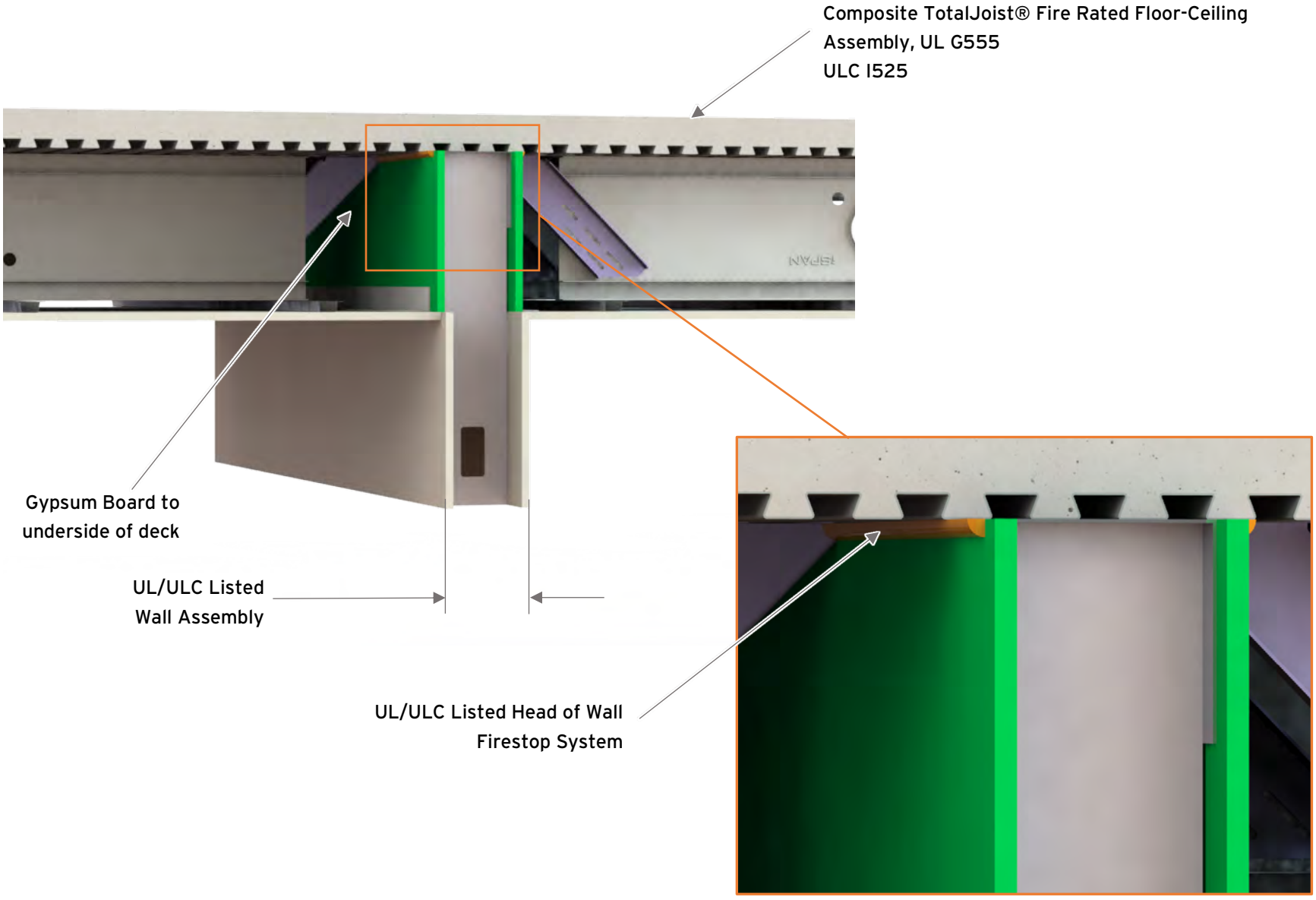
**GYPSUM BOARD INSTALLED OVER TOP TRACK OF ALL NON-LOAD BEARING WALLS**
Pages 17 to 18

**DUCT CEILING PENETRATION**
Page 37

**GYPSUM BOARD INSTALLED PRIOR TO DUCT INSTALLATION**

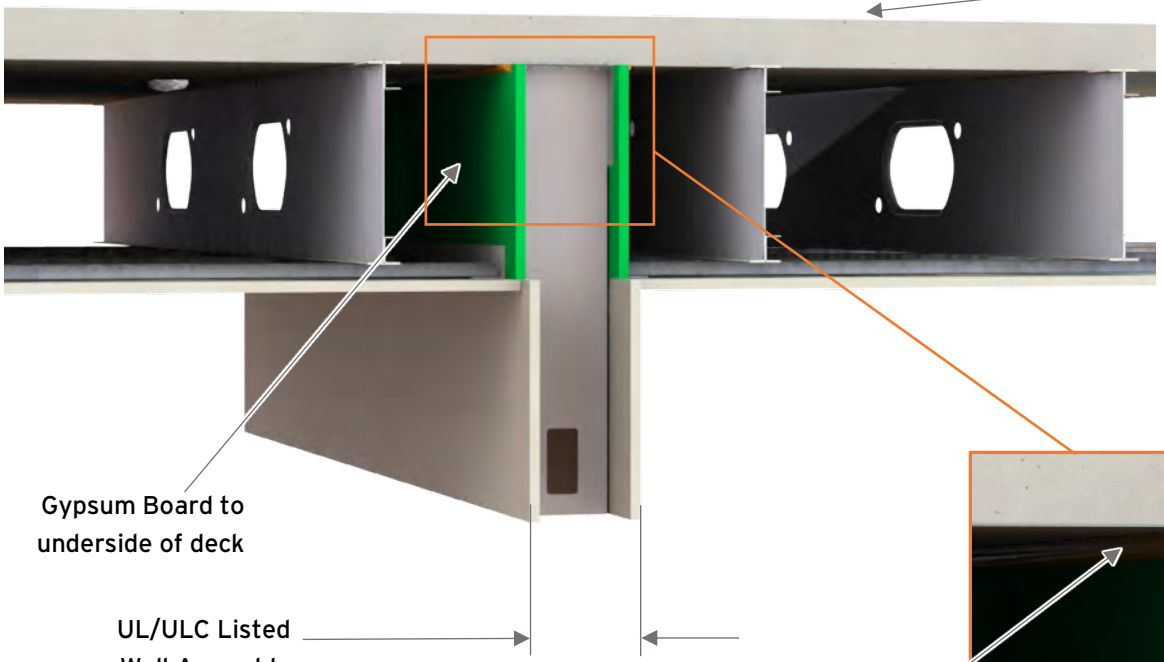
# FIRESTOP DETAILS

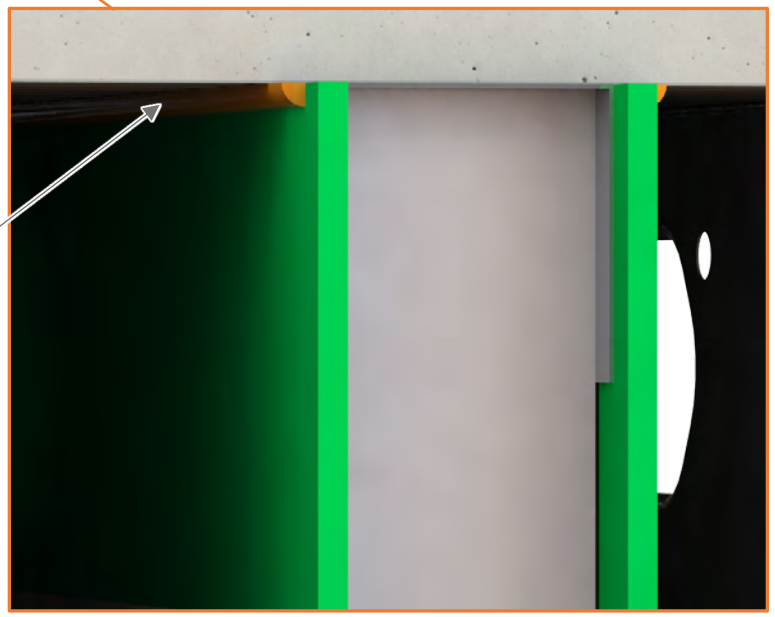
## CONDITION: FIRE RATED LOAD BEARING WALL



# FIRESTOP DETAILS

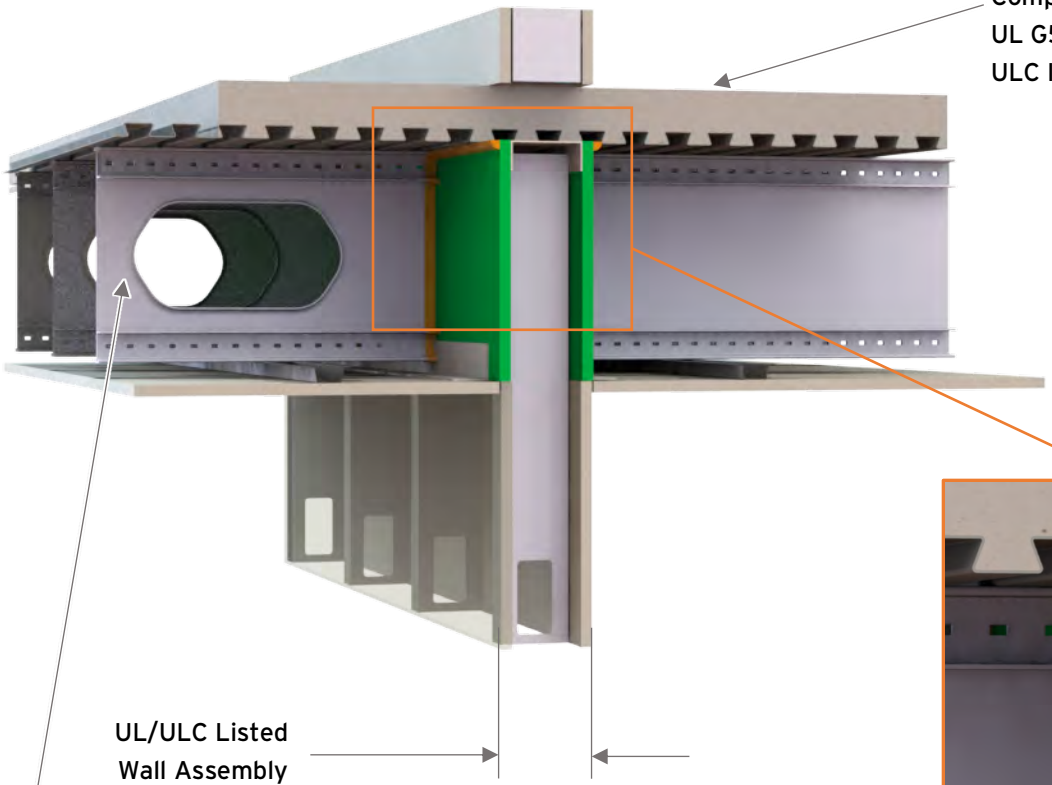
## CONDITION: JOISTS PARALLEL TO FIRE RATED LOAD BEARING WALL OR NON-LOAD BEARING WALL



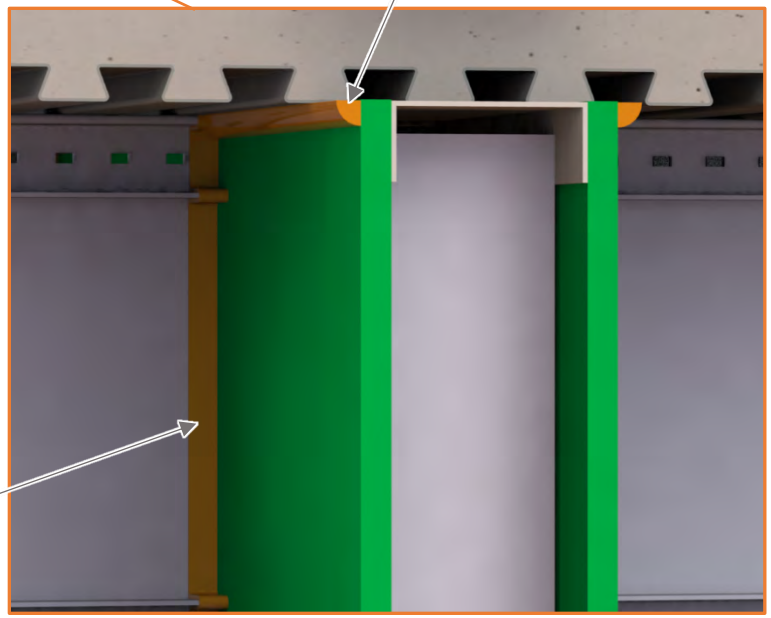
# FIRESTOP DETAILS

## CONDITION: JOISTS PENETRATING FIRE RATED NON-LOAD BEARING WALL



Composite TotalJoist® Fire Rated Floor-Ceiling Assembly,
UL G555
ULC I525

UL/ULC listed head of
wall fire stop system



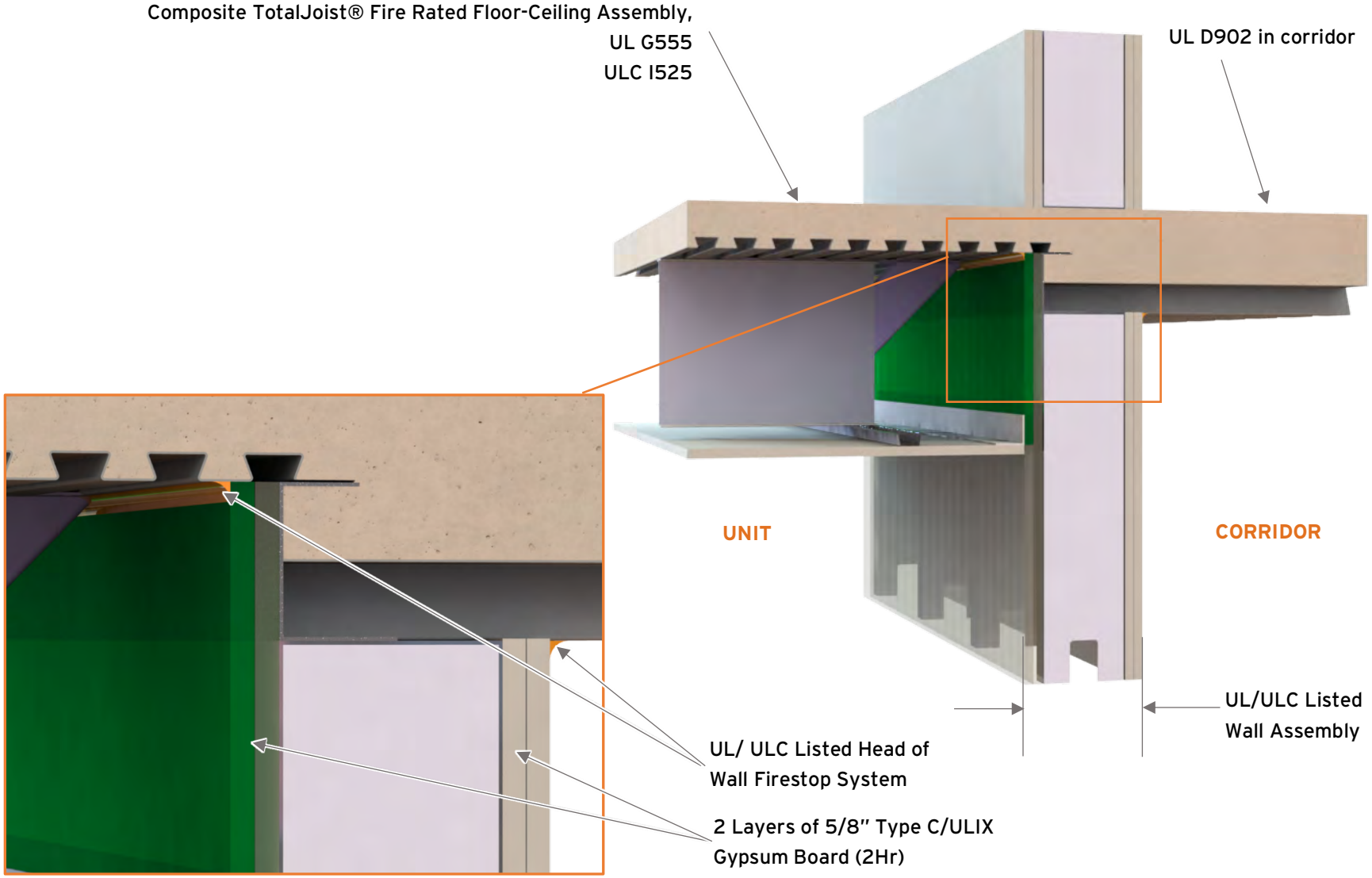
UL/ULC Listed
Wall Assembly

Joists penetrating vertical fire separation

Frame opening around joist at penetration of
Gypsum Board (both sides), UL/ULC Listed Head of
Wall Firestop System HW-D-0218

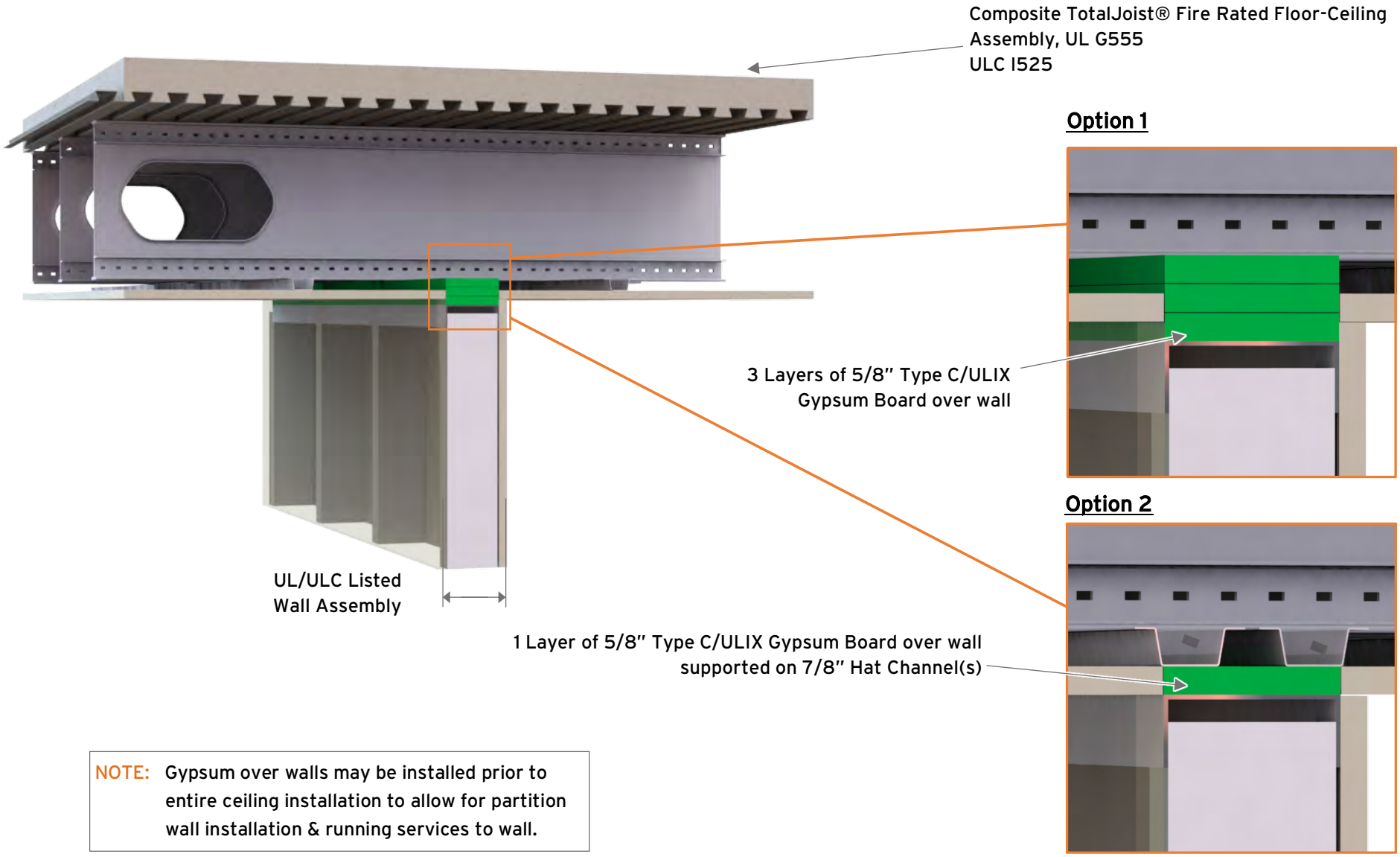
# FIRESTOP DETAILS

## CONDITION: TRANSITION FROM CTJ TO COMPOSITE DECK FLOOR



# FIRESTOP DETAILS

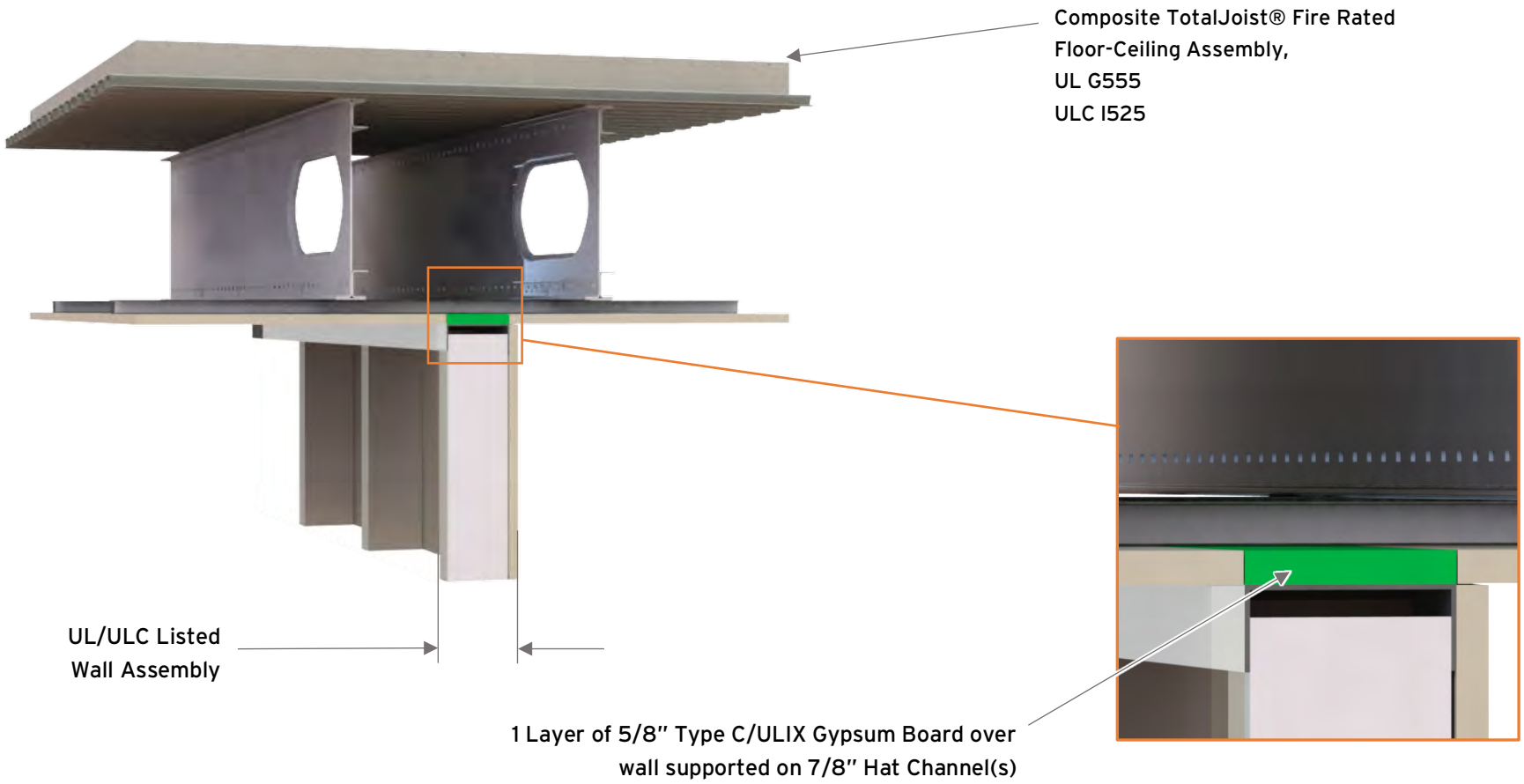
**CONDITION:** NON-LOAD BEARING / NON-FIRE RATED WALL INTERSECTION WITH FIRE RATED FLOOR-CEILING ASSEMBLY




NOTE: Gypsum over walls may be installed prior to entire ceiling installation to allow for partition wall installation & running services to wall.

# FIRESTOP DETAILS

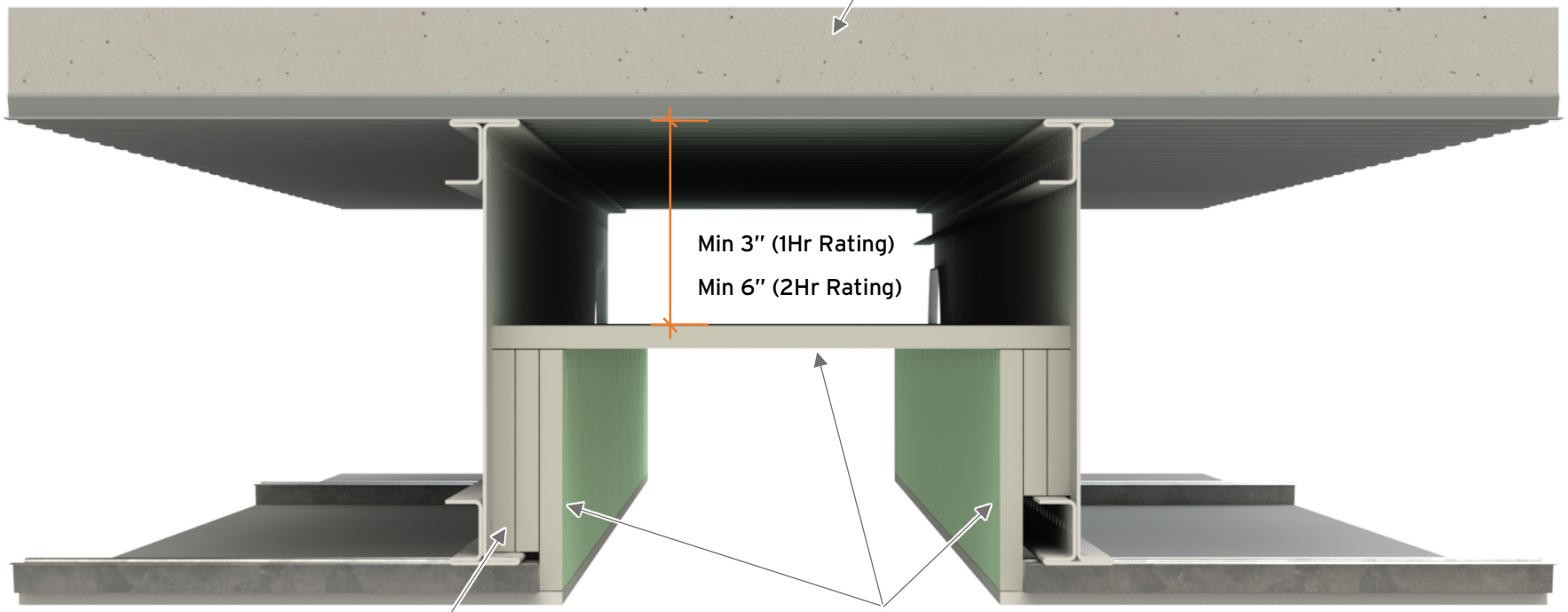
## CONDITION: NON-LOAD BEARING / NON-FIRE RATED WALL INTERSECTION WITH FIRE RATED FLOOR-CEILING ASSEMBLY




NOTE: Gypsum over walls may be installed prior to entire ceiling installation to allow for partition wall installation & running services to wall.

# FIRESTOP DETAILS

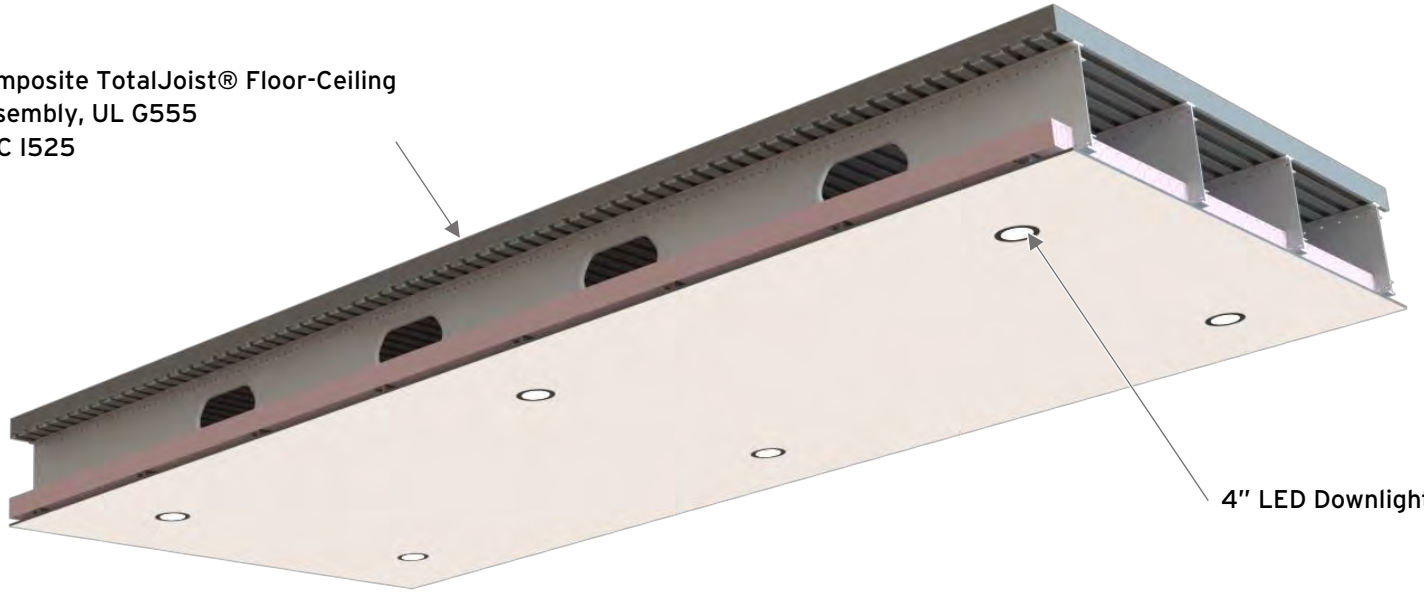
## CONDITION: PLENUM BOX PARALLEL TO JOIST SPAN



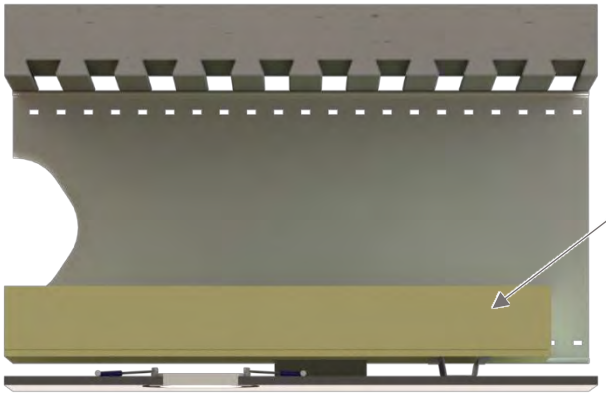
# FIRESTOP DETAILS

## CONDITION: UNPROTECTED LED RECESSED LIGHTS

Composite TotalJoist® Floor-Ceiling
Assembly, UL G555
ULC I525



4" LED Downlight



24"x30"x3" mineral fiber insulation
loose laid above light fixture

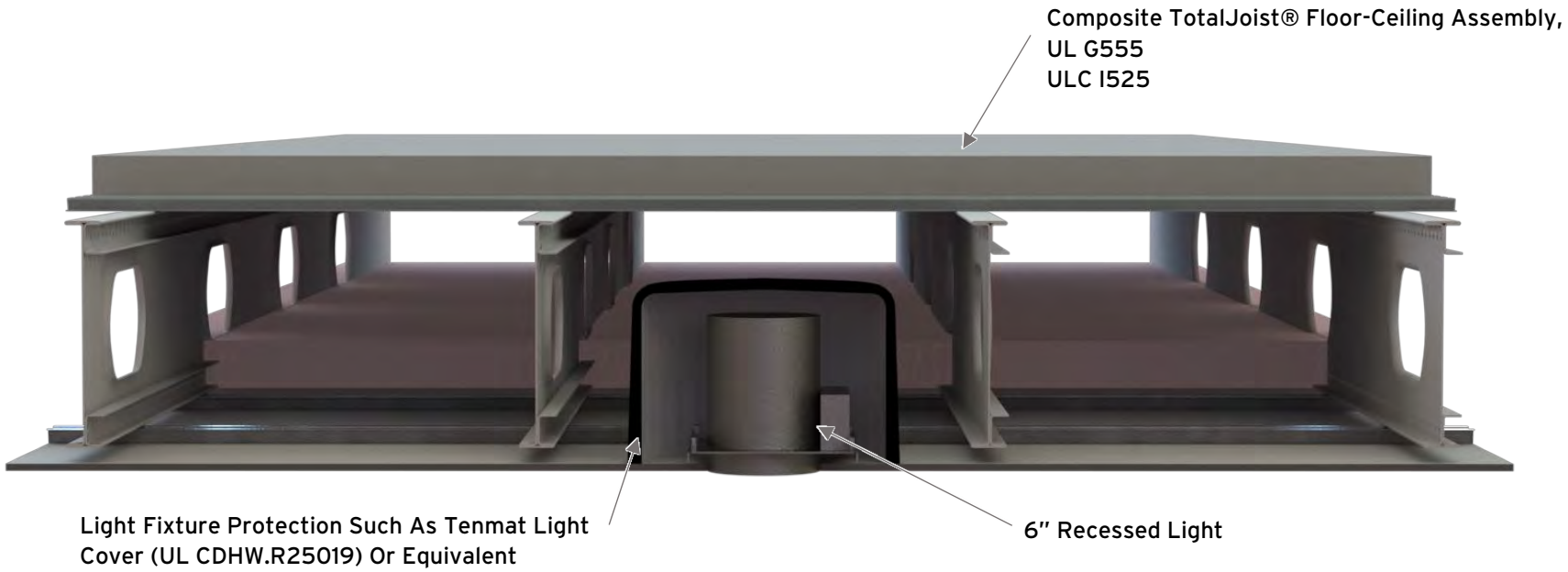
4" LED Downlight suspended
from gypsum board

**Additional Installation Notes:**

- Maximum 1 hour FRR
- Up to 6 pot lights per 100ft$^2$ ceiling area permitted
- Maximum 4-1/4" diameter opening in ceiling
- See UL G555/ULC I525 Listings for detailed information

# FIRESTOP DETAILS

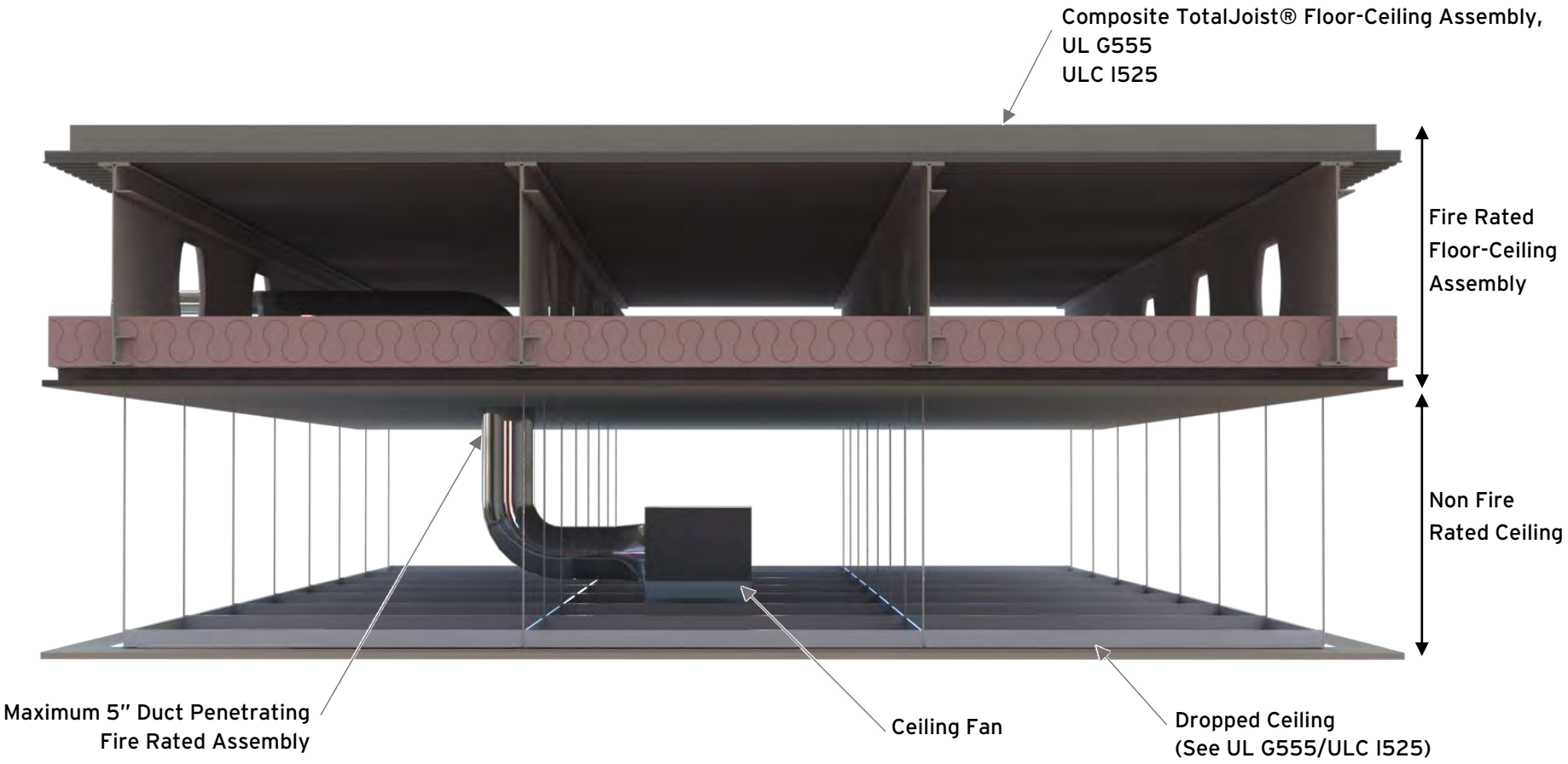
## CONDITION: PROTECTED RECESSED LIGHT FIXTURE




**Additional Installation Notes:**
- Up to 2 hour FRR
- See UL Listings for more detailed information

# FIRESTOP DETAILS

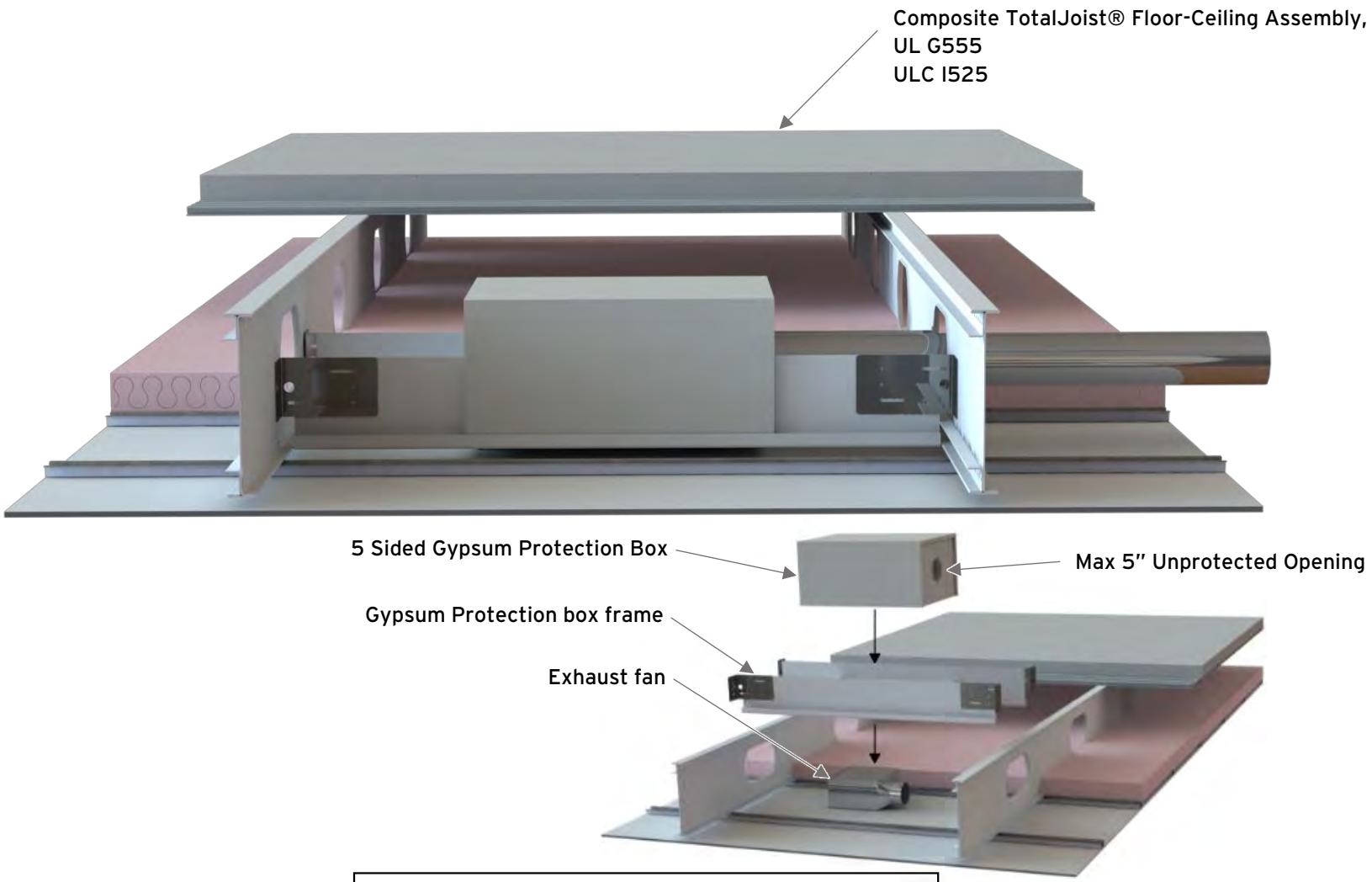
## CONDITION: UNPROTECTED DUCT FROM EXHAUST FAN IN DROPPED CEILING




**Additional Installation Notes:**
- Up to 2 hour FRR
- See UL Listings for more detailed information

# FIRESTOP DETAILS

## CONDITION: EXHAUST FAN PROTECTED WITH FIRE RATED GYPSUM BOX




**Additional Installation Notes:**
- Up to 2 hour FRR
- Contact iSpan Systems LP for supporting documentation

# PENETRATION DETAILS

# TABLE 1.
# COMPOSITE FIRESTOP LISTING

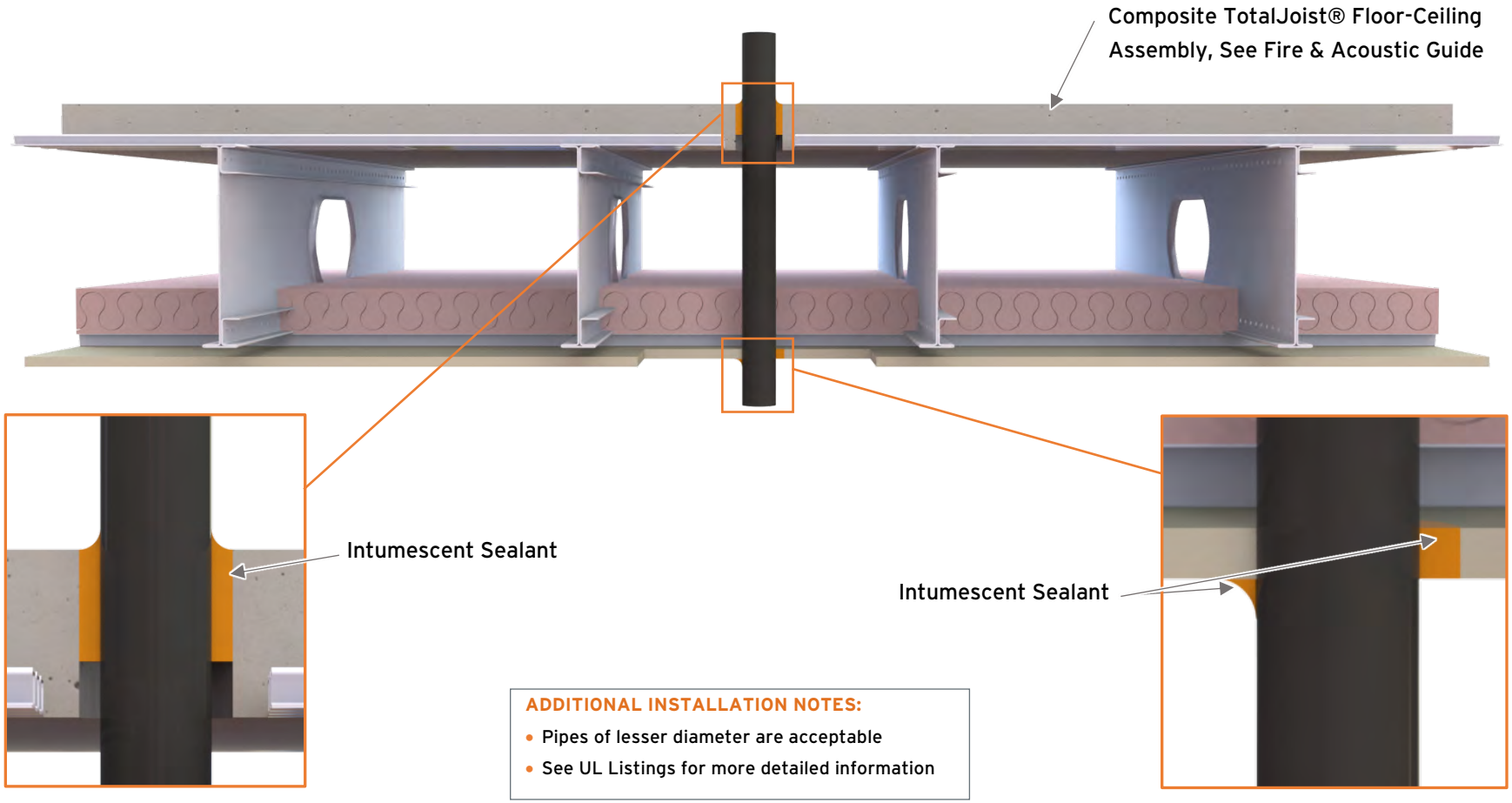
| FIRESTOP TYPES | |
|---|---|
| **IS** | Intumescent Sealant |
| **TI** | Tube Insulation |
| **FC** | Firestop Collar |
| **PC** | Pipe Covering |
| **ST** | Steel Traps |
| **PM** | Packing Material |
| **WS** | Wrap Strip |

| TYPE OF PENETRANT | FIRESTOP TYPE | | | | | | | PAGE NO. |
|---|---|---|---|---|---|---|---|---|
| | IS | TI | FC | PC | ST | PM | WS | |
| ABS | • | | | | | | | 27 |
| | • | | • | | | | | 29 |
| Cables | • | • | | | | | | 32 |
| | • | | | | | | | 36 |
| | • | | | | | • | | 37 |
| Conduit | • | | | | | | | 31 |
| | • | • | | | | | | 32 |
| Copper Pipe & Tubing | • | | | | | | | 31 |
| | • | • | | | | | | 32 |
| | • | | | | | • | | 33 |
| | • | | | • | | | | 34 |
| | • | • | | • | | | | 36 |
| CPVC | • | | | | | | | 27 |
| | • | | | | | | • | 28 |
| | • | | • | | | | | 29 |
| | • | | • | | | • | | 30 |
| | • | • | | | | | | 32 |
| DUCT | • | | | | | | | 38 |
| ENT | • | | | | | | | 37 |
| EMT | • | | | | | • | | 33 |
| Flexible Metal Pipe | • | | | | | | | 31, 35 |
| Flexible Metal Conduit | • | | | | | | | 35 |
| Flexible Non-metallic Conduit | • | | | | | | | 27 |
| Iron | • | | | | | | | 31 |
| | • | | | | | • | | 33 |
| PEX | • | | | | | | | 27 |
| | • | | | | | | • | 28 |
| PVC | • | | | | | | | 27 |
| | • | | • | | | | | 29 |
| | • | | • | | | • | | 30 |
| | • | • | | | | | | 32 |
| Rigid Non-metallic Conduit | • | | | | | | | 27 |
| | • | | • | | | • | | 30 |
| Steel | • | | | | | | | 31 |
| | • | • | | | | | | 32 |
| | • | | | | | • | | 33 |
| | • | | | • | | | | 34 |
| XFR | • | | • | | | • | | 30 |

# PENETRATION DETAILS

**PENETRANT TYPES:** ABS, PVC, CPVC, PEX, ENT, FLEXIBLE NON-METAL CONDUIT & RIGID NON-METAL CONDUIT

**FIRESTOP TYPE:** INTUMESCENT SEALANT




**ADDITIONAL INSTALLATION NOTES:**

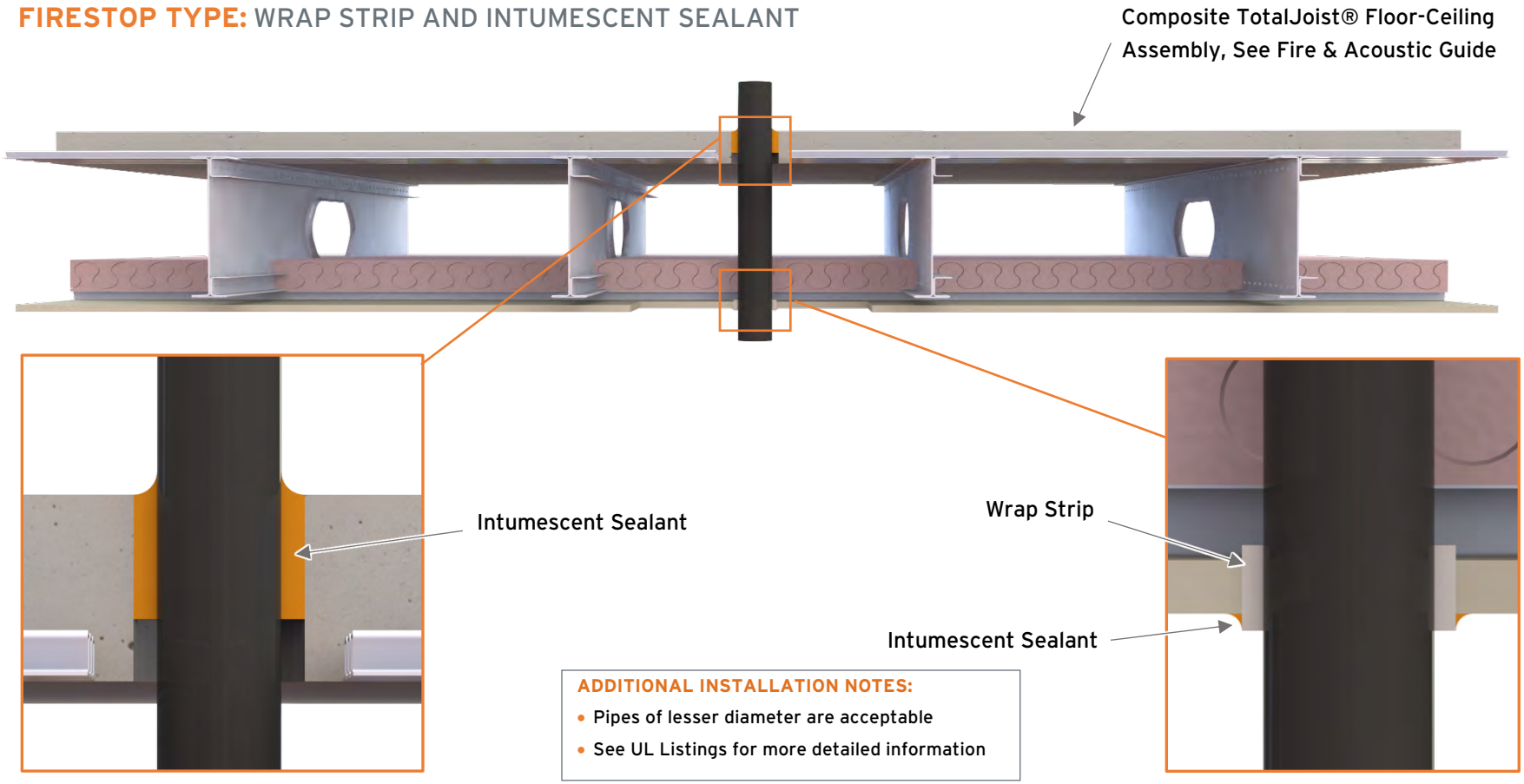
- Pipes of lesser diameter are acceptable
- See UL Listings for more detailed information

| UL Listings | Supplier | Max Sizes (Ø) | | | | | | | Ratings (HR) | | | | Allows Point Contact |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ABS | PVC | CPVC | PEX | ENT | FNMC | RNMC | F | FT | FH | FTH | |
| F-E-2044 | 3M | 2" | 2" | 2" | 2" | 2" | 2" | 2" | 1 | 0 | 1 | 0 | No |
| F-E-2010 | NUCO | - | 2" | 2" | 2" | - | - | 2" | 2 | 0.5 & 2 | 0 & 2 | 0, 1.5 & 2 | See Listing |

# PENETRATION DETAILS

**PENETRANT TYPES:** CPVC & PEX

**FIRESTOP TYPE:** WRAP STRIP AND INTUMESCENT SEALANT




**ADDITIONAL INSTALLATION NOTES:**

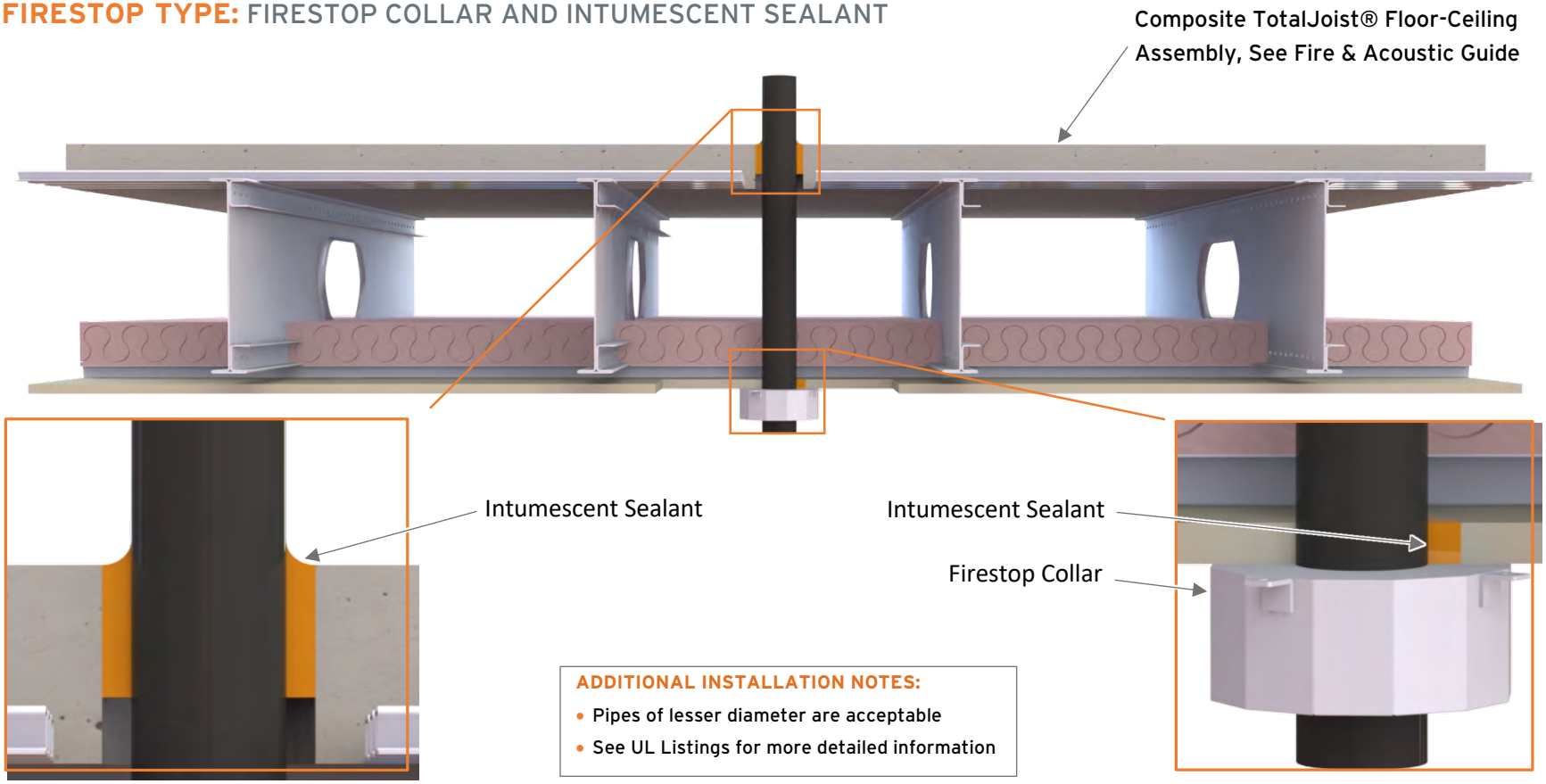
- Pipes of lesser diameter are acceptable
- See UL Listings for more detailed information

| UL Listings | Supplier | Max Sizes (Ø) | | Ratings (HR) | | | | Allows Point Contact |
|---|---|---|---|---|---|---|---|---|
| | | CPVC | PEX | F | FT | FH | FTH | |
| F-E-2005 | HILTI | 1" | 1" | 1 | 1/4 | 1 | 1/4 | No |

# PENETRATION DETAILS

**PENETRANT TYPES:** ABS, PVC & CPVC

**FIRESTOP TYPE:** FIRESTOP COLLAR AND INTUMESCENT SEALANT




**ADDITIONAL INSTALLATION NOTES:**

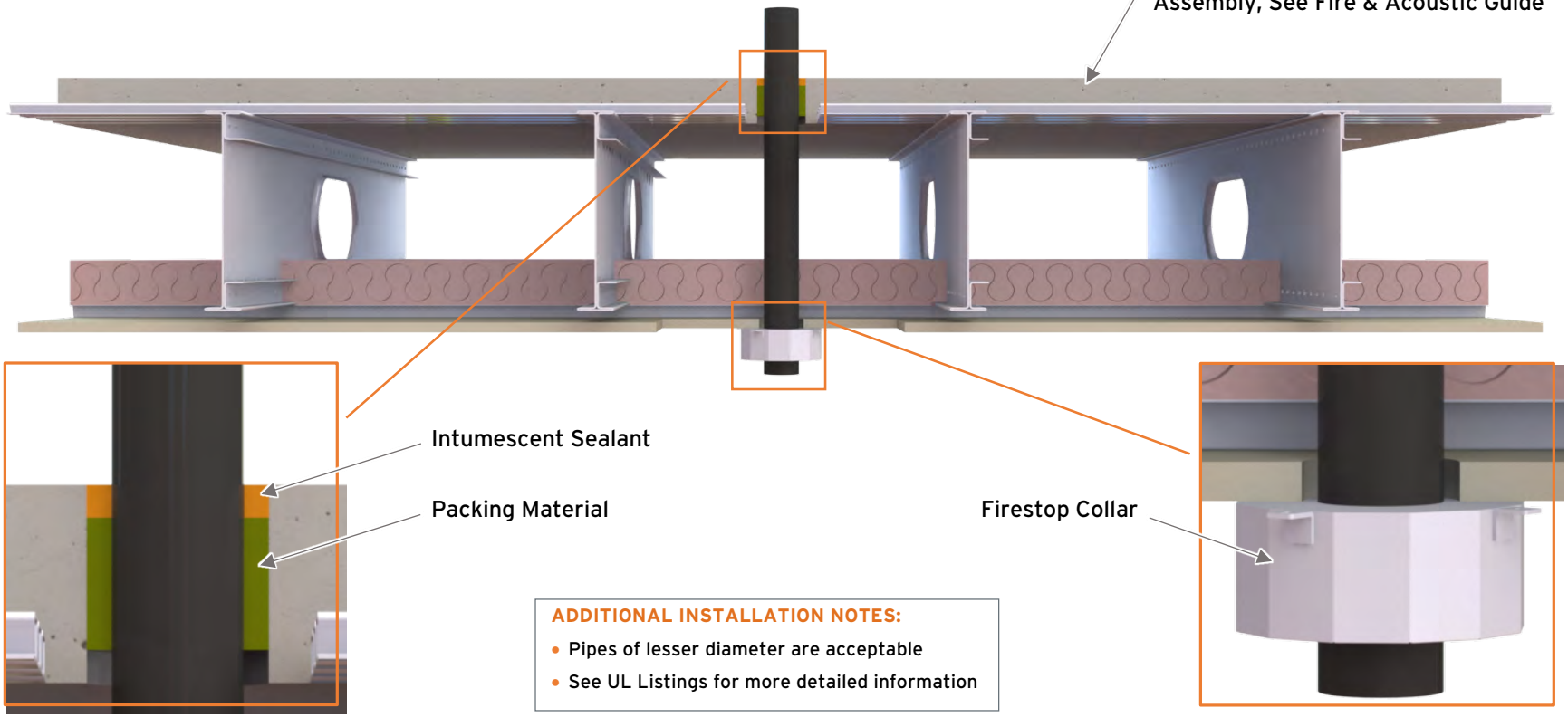
- Pipes of lesser diameter are acceptable
- See UL Listings for more detailed information

| UL Listings | Supplier | Max Sizes (Ø) | | | Ratings (HR) | | | | Allows Point Contact |
|---|---|---|---|---|---|---|---|---|---|
| | | ABS | PVC | CPVC | F | FT | FH | FTH | |
| F-E-2006 | HILTI | 4" | 4" | 4" | 1 | 1 | 0 | 0 | Yes |

# PENETRATION DETAILS

**PENETRANT TYPES:** PVC, CPVC, RIGID NON-METAL CONDUIT & XFR

**FIRESTOP TYPE:** PACKING MATERIAL, FIRESTOP COLLAR AND INTUMESCENT SEALANT




**ADDITIONAL INSTALLATION NOTES:**

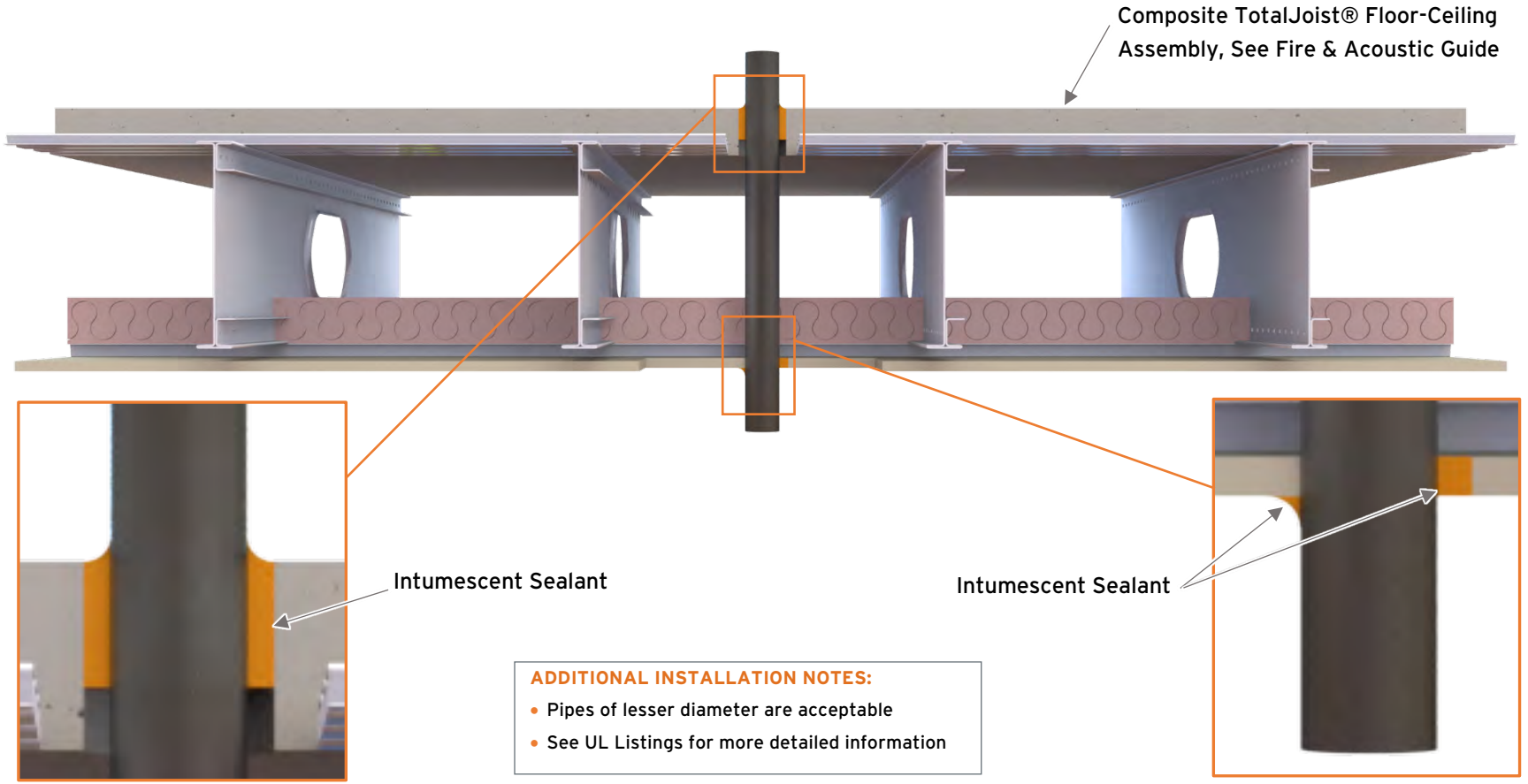
- Pipes of lesser diameter are acceptable
- See UL Listings for more detailed information

| UL Listings | Supplier | Max Sizes (Ø) | | | | Ratings (HR) | | | | Allows Point Contact |
|---|---|---|---|---|---|---|---|---|---|---|
| | | PVC | CPVC | RNMC | XFR | F | FT | FH | FTH | |
| F-E-2008 | NUCO | 4" | 4" | 4" | 4" | 2 | 1/2 & 2 | 2 | 1/2 & 2 | No |
| F-E-2035 | NUCO | 4" | 4" | 4" | 4" | 2 | 1/2 & 2 | 2 | 1/2 & 2 | No |

# PENETRATION DETAILS

**PENETRANT TYPES:** STEEL, IRON, CONDUIT, COPPER TUBING, COPPER PIPE & FLEX METAL PIPE

**FIRESTOP TYPE:** INTUMESCENT SEALANT




**ADDITIONAL INSTALLATION NOTES:**

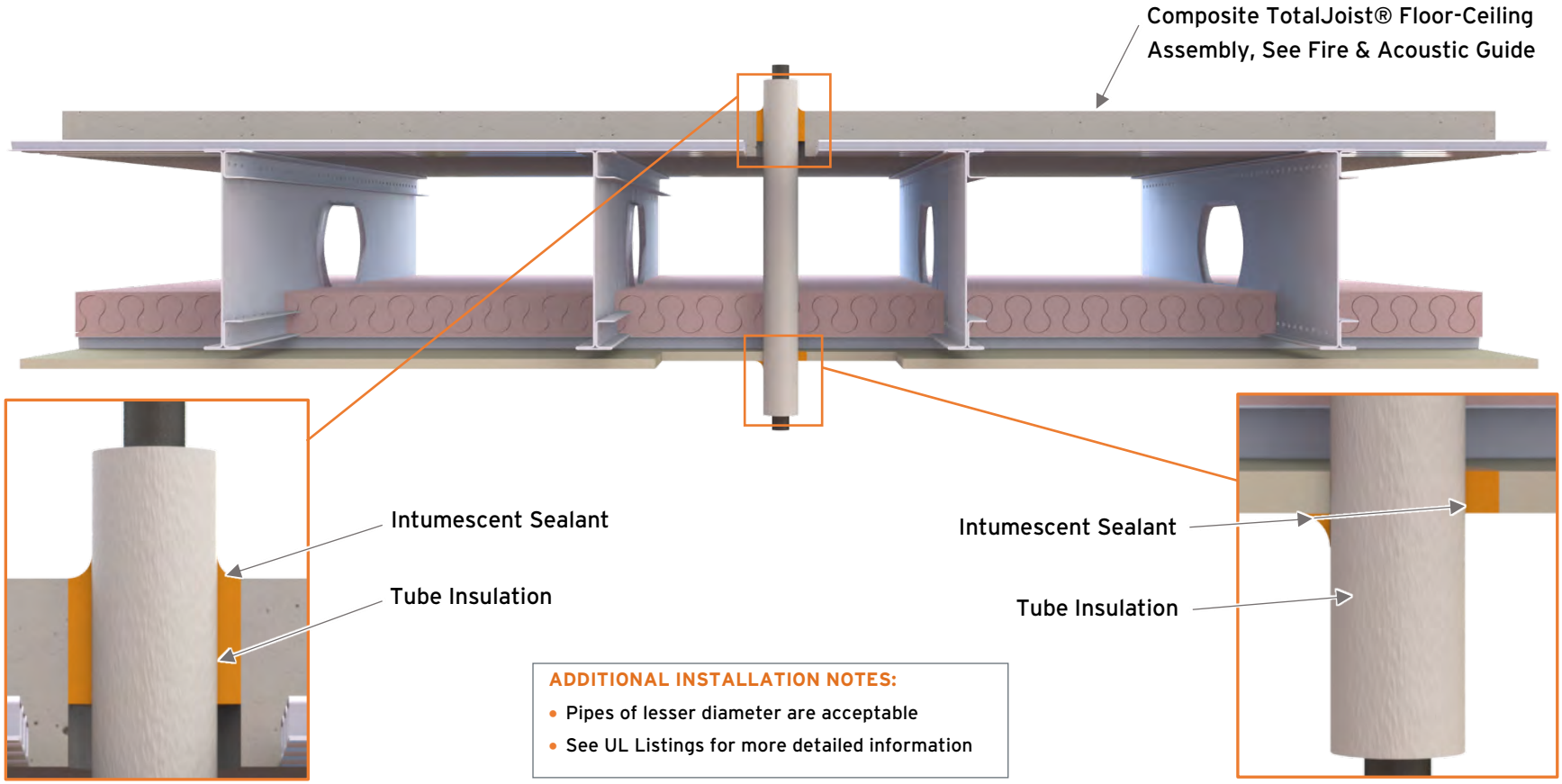
- Pipes of lesser diameter are acceptable
- See UL Listings for more detailed information

| UL Listings | Supplier | Max Sizes (Ø) | | | | | | Ratings (HR) | | | | | Allows Point Contact |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Steel | Iron | Conduit | Copper Tube | Copper Pipe | Flex Metal Pipe | F | T | FT | FH | FTH | |
| F-E-1004 | HILTI | 6" | 6" | 6" | 4" | 4" | - | 1 | 0 | 0 | 1 | 0 | No |
| F-E-1009 | 3M | 4" | 4" | 4" | 4" | 4" | 2" | 1 | 3/4 | - | - | - | Yes |

# PENETRATION DETAILS

**PENETRANT TYPES:** COPPER TUBE, COPPER PIPE, STEEL, PVC, CPVC, CABLES & CONDUIT

**FIRESTOP TYPE:** TUBE INSULATION AND INTUMESCENT SEALANT




**ADDITIONAL INSTALLATION NOTES:**

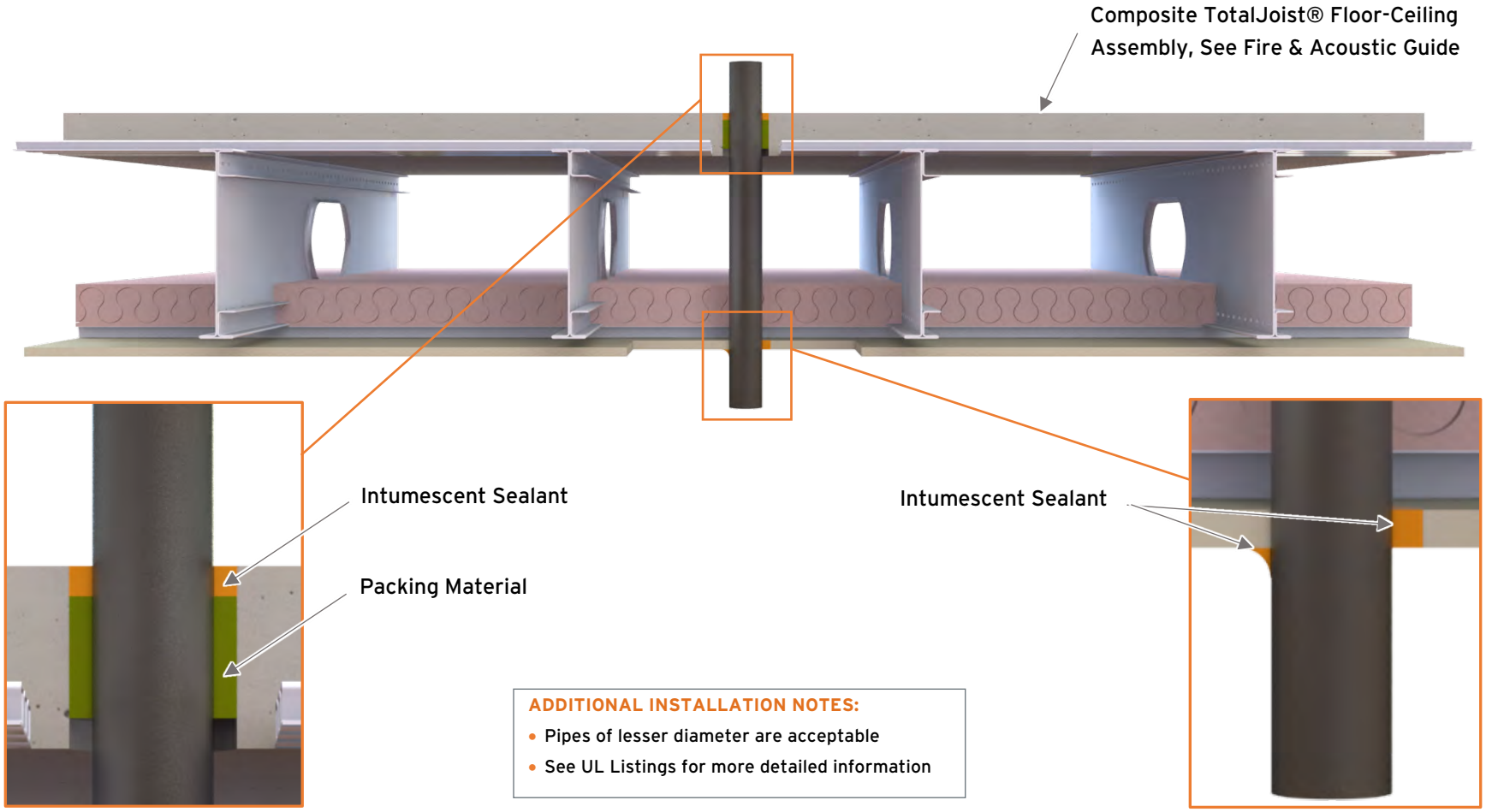
- Pipes of lesser diameter are acceptable
- See UL Listings for more detailed information

| UL Listings | Supplier | Max Sizes (Ø) | | | | | | | Ratings (HR) | | | | | Allows Point Contact |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Copper Pipe | Copper Tube | Steel | Conduit | PVC | CPVC | Cables | F | T | FT | FH | FTH | |
| F-E-8008 | HILTI | 3/4" | 3/4" | 3/4" | 3/4" | 1-1/4" | 1-1/4" | See Listing | 1 | 1 | 1 | 1 | 1 | Yes |
| F-E-5004 | HILTI | 2" | 2" | 2" | - | - | - | - | 1 | 1/4 | 1/4 | 1 | 1/4 | Yes |

# PENETRATION DETAILS

**PENETRANT TYPES:** COPPER PIPE, COPPER TUBE, IRON, EMT & STEEL

**FIRESTOP TYPE:** PACKING MATERIAL AND INTUMESCENT SEALANT




**ADDITIONAL INSTALLATION NOTES:**

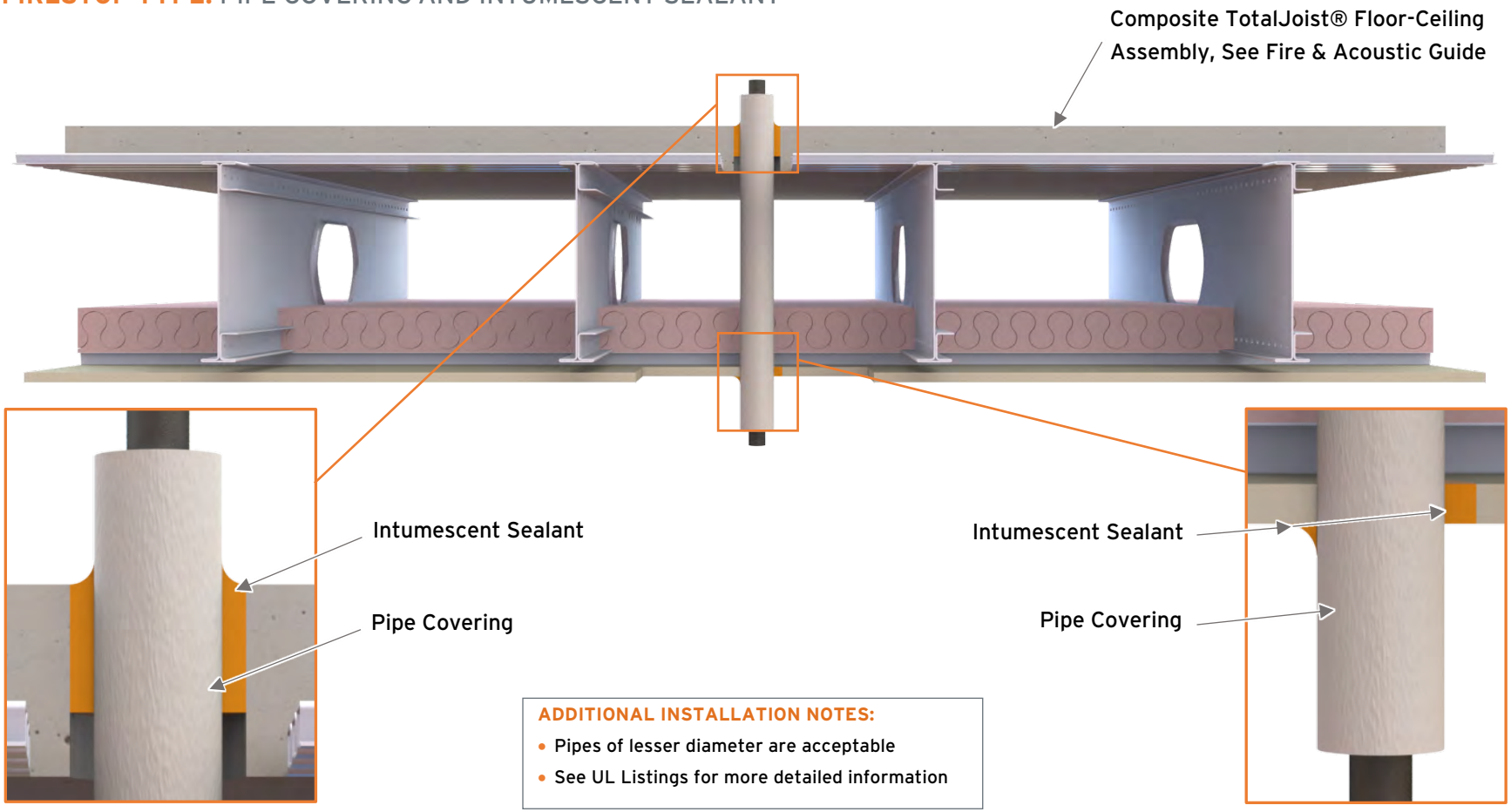
- Pipes of lesser diameter are acceptable
- See UL Listings for more detailed information

| UL Listings | Supplier | Max Sizes (Ø) | | | | | Ratings (HR) | | | | Allows Point Contact |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Copper Pipe | Copper Tube | Iron | EMT | Steel | F | FT | FH | FTH | |
| F-E-1027 | NUCO | 4" | 4" | 4" | 4" | 4" | 2 | 2 | 2 | 2 | Yes |

# PENETRATION DETAILS

**PENETRANT TYPES:** STEEL, COPPER PIPE & COPPER TUBE

**FIRESTOP TYPE:** PIPE COVERING AND INTUMESCENT SEALANT




**ADDITIONAL INSTALLATION NOTES:**

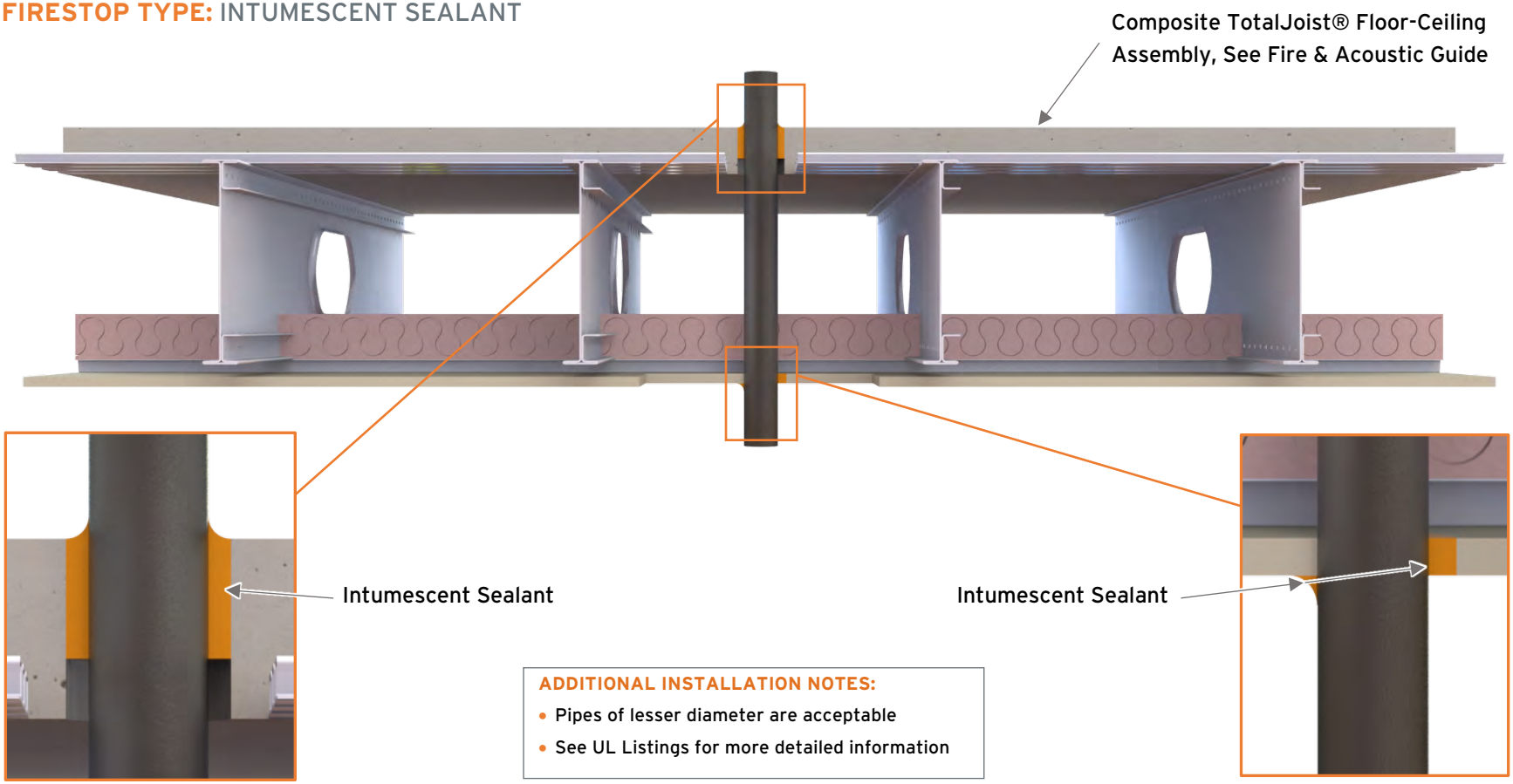
- Pipes of lesser diameter are acceptable
- See UL Listings for more detailed information

| UL Listings | Supplier | Max Sizes (Ø) | | | Ratings (HR) | | | | | Allows Point Contact |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Steel | Copper Pipe | Copper Tube | F | T | FT | FH | FTH | |
| F-E-5013 | HILTI | 2″ | 2″ | 2″ | 1 | 1 | 1 | 1 | 1 | Yes |

# PENETRATION DETAILS

**PENETRANT TYPES:** FLEX METAL CONDUIT & FLEX METAL PIPE

**FIRESTOP TYPE:** INTUMESCENT SEALANT




**ADDITIONAL INSTALLATION NOTES:**

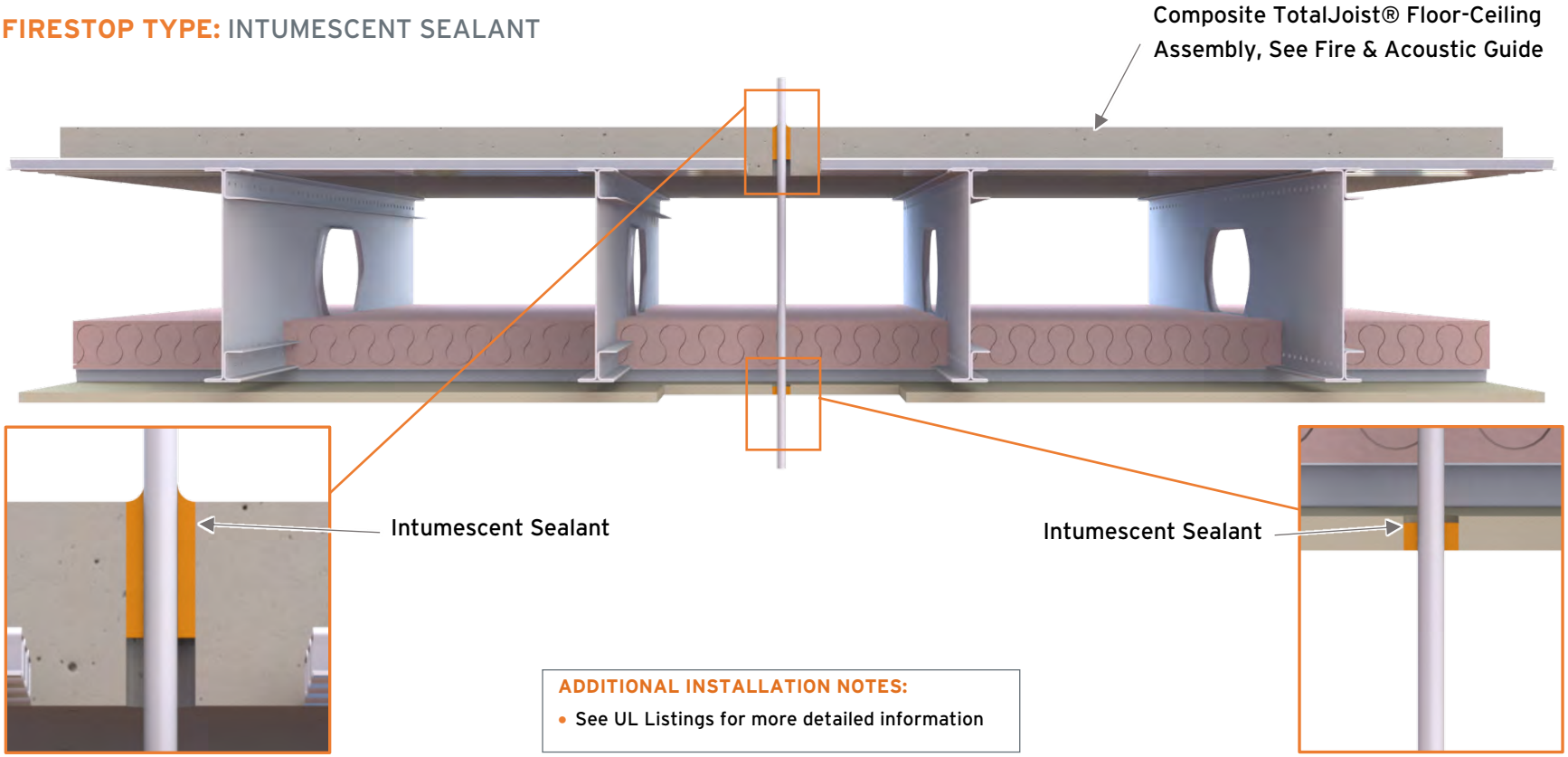
- Pipes of lesser diameter are acceptable
- See UL Listings for more detailed information

| UL Listings | Supplier | Max Sizes (Ø) | | Ratings (HR) | | | | | Allows Point Contact |
|---|---|---|---|---|---|---|---|---|---|
| | | Flex Metal Conduit | Flex Metal Pipe | F | T | FT | FH | FTH | |
| F-E-1018 | HILTI | 1" | 1" | 1 | 1 | 1 | 1 | 1 | Yes |

# PENETRATION DETAILS

**PENETRANT TYPES:** CABLES

**FIRESTOP TYPE:** INTUMESCENT SEALANT




**ADDITIONAL INSTALLATION NOTES:**

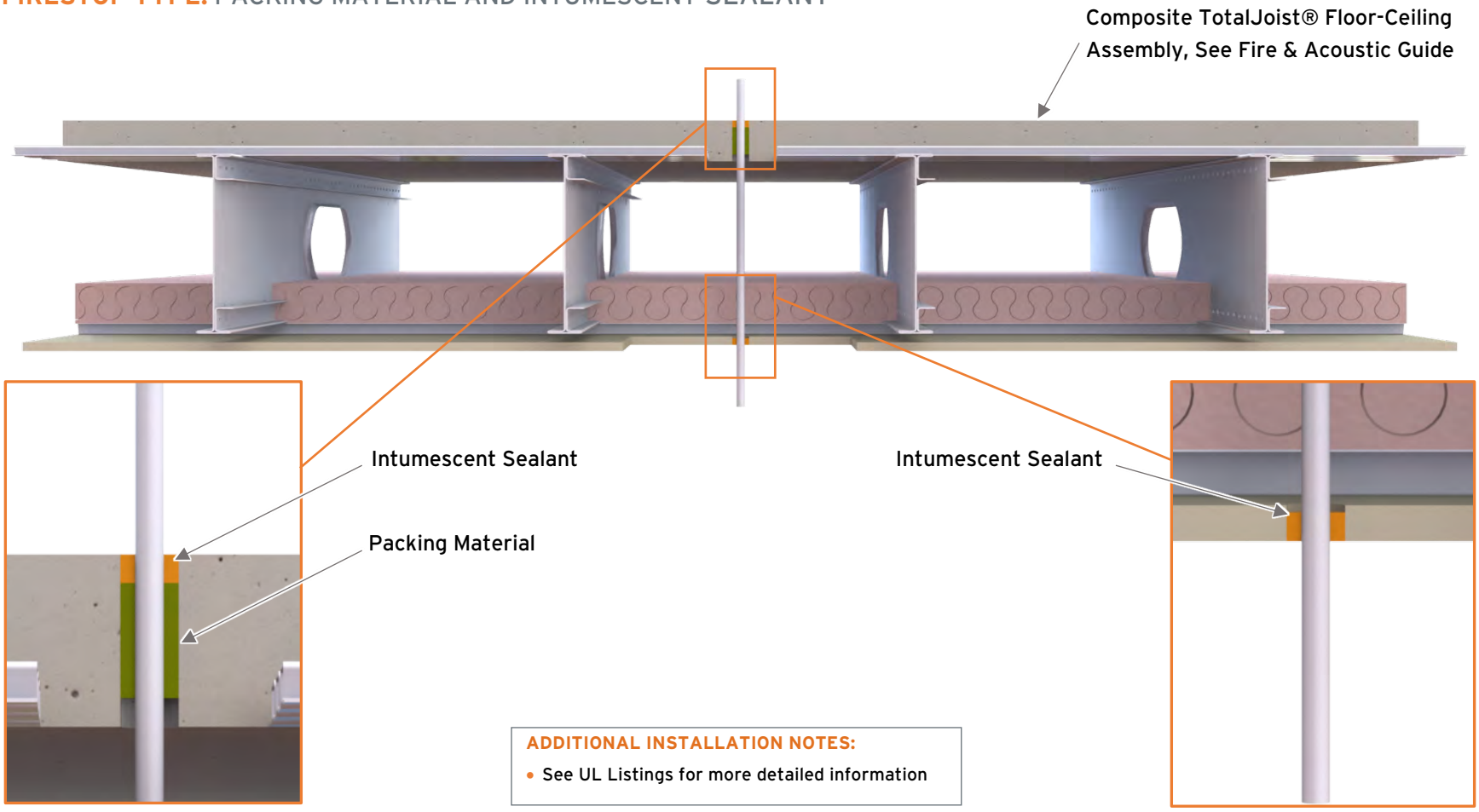
- See UL Listings for more detailed information

| UL Listings | Supplier | Max Sizes (Ø) | Ratings (HR) | | | | | Allows Point Contact |
|---|---|---|---|---|---|---|---|---|
| | | Cables | F | T | FT | FH | FTH | |
| F-E-3005 | HILTI | See Listing | 1 | 1 | 1 | 1 | 1 | No |
| F-E-3012 | HILTI | See Listing | 1 | 1 | 1 | 1 | 1 | Yes |
| F-E-3008 | 3M | See Listing | 1 | 1 | - | - | - | Yes |

# PENETRATION DETAILS

**PENETRANT TYPES:** CABLES

**FIRESTOP TYPE:** PACKING MATERIAL AND INTUMESCENT SEALANT




**ADDITIONAL INSTALLATION NOTES:**

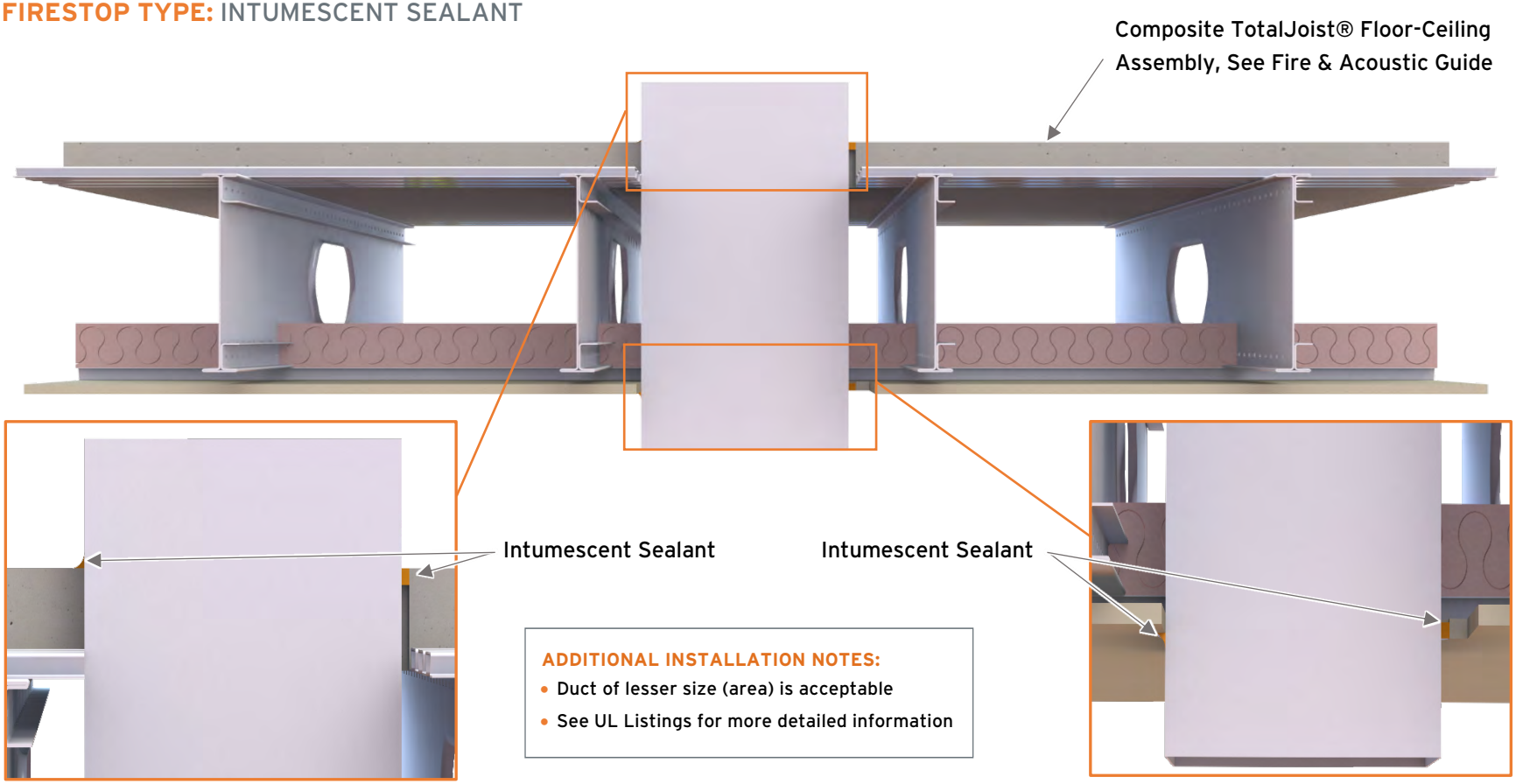
- See UL Listings for more detailed information

| UL Listings | Supplier | Max Sizes (Ø) | Ratings (HR) | | | | | Allows Point Contact |
|---|---|---|---|---|---|---|---|---|
| | | Cables | F | T | FT | FH | FTH | |
| F-E-3018 | NUCO | See Listing | 2 | - | 2 | 2 | 2 | Yes |

# PENETRATION DETAILS

**PENETRANT TYPES:** DUCT WORK

**FIRESTOP TYPE:** INTUMESCENT SEALANT




**ADDITIONAL INSTALLATION NOTES:**

- Duct of lesser size (area) is acceptable
- See UL Listings for more detailed information

| UL Listings | Supplier | Max Sizes (LxW) | Ratings (HR) | | | | | Allows Point Contact |
|---|---|---|---|---|---|---|---|---|
| | | Duct | F | T | FT | FH | FTH | |
| F-E-7008 | HILTI | 10"x12" | 1 | 1/4 | 1/4 | 1 | 1/4 | Yes |

## ABOUT iSPAN SYSTEMS

iSPAN Systems manufactures and supplies proprietary cold-formed steel framing systems that are revolutionizing the construction of mid-rise condominiums and apartments, hotels, and retirement residences.

With a deep understanding of the construction process, we engineer and manufacture all of our own patented building components in our facility in Princeton, Ontario.

Through our full-service approach – from engineering and manufacturing, to supporting installation, our involvement does not end once the products are delivered to site. We are there with you every step of the way to ensure a successful project.

With applications for many building types, our framing systems have been used by leading developers and architects on projects across North America to provide a complete solution for the supply and install of the building superstructure.

iSPAN® SYSTEMS

## COULD COMPOSITE TOTALJOIST BE RIGHT FOR YOUR NEXT PROJECT?

We'd be happy to provide more information about our systems, answer questions, or review drawings for your upcoming project.


### iSPAN Systems LP

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