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INTRODUCTION TO FIRESTOPPING

Pipe, conduit, or cable penetrations in the floor-ceiling assembly can be made without comprising 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.

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 17)
- Joists penetrating through a fire rated wall (page 18)
- Continuing the ceiling separation at non-load bearing walls (Page 19)
- Transitioning from a Composite TotalJoist floor to a composite steel deck floor (page 20)
- Creating a “plenum box” (page 21)

For penetrations such as lights, ducts, and outlet boxes, see the “Allowable Penetration Details” section of the Composite TotalJoist Technical Guide.
TABLE 1. COMPOSITE FIRESTOP LISTING

<table>
<thead>
<tr>
<th>TYPE OF PENETRANT</th>
<th>FIRESTOP TYPE</th>
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<tr>
<td></td>
<td>IS</td>
<td>TI</td>
</tr>
<tr>
<td>ABS</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Cables</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Conduit</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Copper Pipe &amp; Tubing</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>CPVC</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>DUCT</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>ENT</td>
<td>•</td>
<td>•</td>
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<tr>
<td>Flexible Metal Pipe</td>
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<td>•</td>
</tr>
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<td>Flexible Metal Conduit</td>
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<td>Flexible Non-metallic Conduit</td>
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<td>•</td>
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<tr>
<td>Iron</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>PEX</td>
<td>•</td>
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</tr>
<tr>
<td>PVC</td>
<td>•</td>
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<tr>
<td>Rigid Non-metallic Conduit</td>
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<td>Steel</td>
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<tr>
<td>XFR</td>
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**FIRESTOP TYPES**

- IS: Intumescent Sealant
- TI: Tube Insulation
- FC: Firestop Collar
- PC: Pipe Covering
- ST: Steel Traps
- PM: Packing Material
- WS: Wrap Strip
PENETRATION DETAILS
PENETRATION DETAILS

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

FIRESTOP TYPE: INTUMESCENT SEALANT

Additional Installation Notes:
- Pipes of lesser diameter are acceptable
- See UL Listings for more detailed information

<table>
<thead>
<tr>
<th>UL Listings</th>
<th>Supplier</th>
<th>Max Sizes (Ø)</th>
<th>Ratings (HR)</th>
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<td>-</td>
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Composite TotalJoist® Floor-Ceiling Assembly, See Fire & Acoustic Guide

Intumescent Sealant
PENETRATION DETAILS

PENETRANT TYPES: CPVC & PEX

FIREFSTOp TYPE: WRAP STRIP AND INTUMESCENT SEALANT

Intumescent Sealant

Wrap Strip

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 | No
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

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<th>Ratings (HR)</th>
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**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

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<table>
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<tr>
<th>UL Listings</th>
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</table>
PENETRATION DETAILS

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

FIRESTOP TYPE: INTUMESCENT SEALANT

**ADDITONAL INSTALLATION NOTES:**
- Pipes of lesser diameter are acceptable
- See UL Listings for more detailed information

<table>
<thead>
<tr>
<th>UL Listings</th>
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<th>Ratings (HR)</th>
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<td>4”</td>
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</table>
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

<table>
<thead>
<tr>
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<th>Supplier</th>
<th>Max Sizes (Ø)</th>
<th>Ratings (HR)</th>
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<td>2&quot;</td>
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</table>
PENETRATION DETAILS

PENETRANT TYPES: COPPER PIPE, COPPER TUBE, IRON, ENT & STEEL

FIRESTOP TYPE: PACKING MATERIAL AND INTUMESCENT SEALANT

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

### ADJUSTABLE INSTALLATION NOTES:

#### UL Listings

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<td>FTH</td>
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Composite TotalJoist® Floor-Ceiling Assembly, See Fire & Acoustic Guide
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

<table>
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<tr>
<th>UL Listings</th>
<th>Supplier</th>
<th>Max Sizes (Ø)</th>
<th>Ratings (HR)</th>
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</tbody>
</table>
PENETRATION DETAILS

PENETRANT TYPES: FLEX METAL CONDUIT & FLEX METAL PIPE

FIRESTOP TYPE: INTUMESCENT SEALANT

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

**ADDITIONAL INSTALLATION NOTES:**

<table>
<thead>
<tr>
<th>UL Listings</th>
<th>Supplier</th>
<th>Max Sizes (Ø)</th>
<th>Ratings (HR)</th>
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</table>
PENETRATION DETAILS

PENETRANT TYPES: CABLES
FIRESTOP TYPE: INTUMESCENT SEALANT

Composite TotalJoist® Floor-Ceiling Assembly, See Fire & Acoustic Guide

PENETRATION DETAILS

INTUMESCENT SEALANT

ADDITIONAL INSTALLATION NOTES:
- See UL Listings for more detailed information

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

COMPOSITE TOTALJOIST FIRESTOP GUIDE
PENETRATION DETAILS

PENETRANT TYPES: CABLES

FIRESTOP TYPE: PACKING MATERIAL AND INTUMESCENT SEALANT

Composite TotalJoist® Floor-Ceiling Assembly, See Fire & Acoustic Guide

Intumescent Sealant

Packing Material

ADDITIONAL INSTALLATION NOTES:
- See UL Listings for more detailed information

<table>
<thead>
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<th>UL Listings</th>
<th>Supplier</th>
<th>Max Sizes (Ø)</th>
<th>Ratings (HR)</th>
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</table>
PENETRATION DETAILS

PENETRANT TYPES: DUCT WORK
FIRESTOP TYPE: INTUMESCENT SEALANT

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

<table>
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<th>UL Listings</th>
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<td>HILTI</td>
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</table>

Composite TotalJoist® Floor-Ceiling Assembly, See Fire & Acoustic Guide
FIRESTOP DETAILS
**FIRESTOP DETAILS**

**CONDITION:** FIRE RATED LOAD BEARING WALL

Composite TotalJoist® Fire Rated Floor-Ceiling Assembly, UL 555
ULC 1525

Gypsum Board to underside of deck

UL/ULC Listed Wall Assembly

UL/ULC Listed Head of Wall Firestop System
FIRESTOP DETAILS

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

Composite TotalJoist® Fire Rated Floor-Ceiling Assembly,
UL 555
ULC 1525

Gypsum Board to underside of deck

UL/ULC Listed Wall Assembly

UL/ULC Listed Head of Wall Firestop System
FIREFSTOPY 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: NON-LOAD BEARING / NON-FIRE RATED WALL INTERSECTION WITH FIRE RATED FLOOR-CEILING ASSEMBLY**

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

Option 1

Option 2

3 Layers of 5/8” Type C/ULIX Gypsum Board over wall

1 Layer of 5/8” Type C/ULIX Gypsum Board over wall supported on 7/8” Hat Channel(s)

UL/ULC Listed Wall Assembly

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

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

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

UL/ULC Listed Wall Assembly

1 Layer of 5/8” Type C/ULIX Gypsum Board over wall supported on 7/8” Hat Channel(s)

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

CONDITION: TRANSITION FROM CTJ TO COMPOSITE DECK FLOOR

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

UL D902 in corridor

UL/ULC Listed Head of Wall Firestop System

2 Layers of 5/8" Type C/ULIX Gypsum Board (2Hr)
FIRESTOP DETAILS

CONDITION: PLENUM BOX PARALLEL TO JOIST SPAN

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

Min 3” (1Hr Rating)
Min 6” (2Hr Rating)

Build up with non-combustible material flush to flange. (E.g. Type C/ULIX Gypsum Board, Cement Board, or equivalent)

1 layer of 5/8” Type C/ULIX Gypsum Board
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.

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iSPAN Systems LP
70 Brentwood Drive
Princeton, ON N0J 1V0 Canada

(855) 804-7726
info@ispansystems.com

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.