



System No. F-C-2445 XHEZ.F-C-2445 Through-penetration Firestop Systems

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Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

XHEZ - Through-penetration Firestop Systems

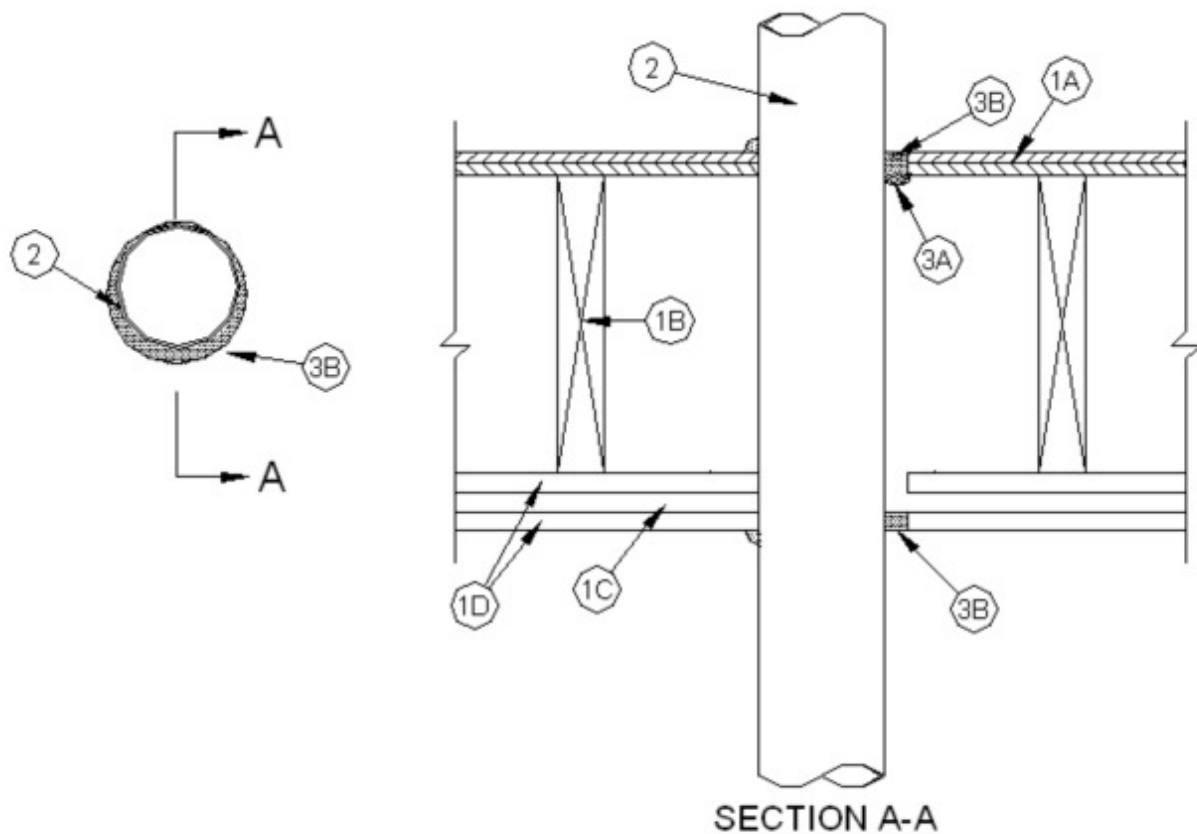
[See General Information for Through-penetration Firestop Systems](#)

System No. F-C-2445

June 01, 2016

F Ratings — 1 and 2 Hr (See Item 1)

T Ratings — 0, 1 and 2 Hr (See Item 2)



1. Floor-Ceiling Assembly — The 1 hr fire-rated solid or trussed lumber joist floor-ceiling assembly shall be constructed of the materials and in the manner specified in the individual L500 Series Floor-Ceiling Designs in the UL Fire Resistance Directory. The 2 hr fire-rated wood joist floor-ceiling assembly shall be constructed of the materials and in the manner specified in the individual L500 Series Floor-Ceiling Designs in the UL Fire Resistance Directory. **The F Rating of the firestop system is equal to the hourly fire rating of the floor-ceiling assembly.** The general construction features of the floor-ceiling assembly are summarized below:

A. Flooring System — Lumber or plywood subfloor with finish floor of lumber, plywood or **Floor Topping Mixture*** as specified in the individual Floor-Ceiling Design. See Table in Item 2 for max diam of floor opening.

B. Wood Joists* — For 1 hr fire-rated floor-ceiling assemblies, nom 10 in. (254 mm) deep (or deeper) lumber, steel or combination lumber and steel joists, trusses or **Structural Wood Members*** with bridging as required and with ends firestopped. For 2 hr fire-rated floor-ceiling assemblies, nom 2 by 10 in. (51 by 254 mm) lumber joists spaced 16 in. (406 mm) OC with nom 1 by 3 in. (25 by 76 mm) lumber bridging and with ends firestopped.

C. Furring Channels — (Not Shown) — In 2 hr fire-rated assemblies, resilient galv steel furring installed perpendicular to wood joists between first and second layers of wallboard (Item 1D). Furring channels spaced max 24 in. (610 mm) OC. In 1 hr fire-rated assemblies, resilient galv steel furring installed perpendicular to wood joists between wallboard and wood joists as specified in the individual Floor-Ceiling Design. Furring channels spaced max 24 in. (610 mm) OC.

D. Gypsum Board* — Nom 4 ft (122 cm) wide by 5/8 in. (16 mm) thick as specified in the individual Floor-Ceiling Design. First layer of gypsum board secured to wood joists or furring channels as specified in the individual Floor-Ceiling Design. Second layer of gypsum board (2 hr fire-rated assembly) screw-attached to furring channels as specified in the individual Floor-Ceiling Design. See Table in Item 2 for diam of ceiling opening.

1.1 Chase Wall — (Optional, Not Shown) — The through penetrant (Item 2) may be routed through a 1 or 2 hr fire rated single, double or staggered wood stud/gypsum board chase wall. The chase wall shall be constructed of the materials and in the manner specified in the individual U300 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs — Nom 2 by 4 in. (51 by 102 mm), 2 by 6 in. (51 by 152 mm) or double nom 2 by 4 in. (51 by 102 mm) lumber studs.

B. Sole Plate — Nom 2 by 4 in. (51 by 102 mm), 2 by 6 in. (51 by 152 mm) or parallel 2 by 4 in. (51 by 102 mm) lumber plates, tightly butted. See Table in Item 2 for diam of opening.

C. Top Plate — The double top plate shall consist of two nom 2 by 4 in. (51 by 102 mm), two nom 2 by 6 in. (51 by 152 mm) or two sets of parallel 2 by 4 in. (51 by 102 mm) lumber plates, tightly butted. See Table in Item 2 for diam of opening.

D. Gypsum Board* — Thickness, type, number of layers and fasteners shall be as specified in individual Wall and Partition Design.

2. Through Penetrants — One nonmetallic pipe to be installed either concentrically or eccentrically within the firestop system. See Table below for annular space between penetrant and opening and T Rating of firestop system. Pipe or tubing to be rigidly supported on both sides of floor assembly. The following types and sizes of nonmetallic pipes may be used:

A. Polyvinyl Chloride (PVC) Pipe — Nom 2 in. (51 mm) diam (or smaller) Schedule 40 solid core polyvinyl chloride (PVC) pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

B. Polyvinyl Chloride (PVC) Pipe — Nom 2 in. (51 mm) diam (or smaller) Schedule 40 cellular core polyvinyl chloride (PVC) pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

C. Chlorinated Polyvinyl Chloride (CPVC) Pipe — Nom 2 in. (51 mm) diam (or smaller) SDR13.5 CPVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

D. Acrylonitrile Butadiene Styrene (ABS) Pipe — Nom 2 in. (51 mm) diam (or smaller) Schedule 40 solid or cellular core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

E. Rigid Nonmetallic Conduit+ — Nom 2 in. (51 mm) diam (or smaller) Schedule 40 PVC conduit installed in accordance with National Electrical Code (NFPA No. 70).

F. Chlorinated Polyvinyl Chloride (CPVC) Pipe — Nom 2 in. diam (or smaller) FLOWGUARD GOLD® SDR11 CPVC for use in closed (process or supply) piping systems. The annular space between conduit and periphery of opening shall be min 1/4 in. (6 mm) to max 1-3/8 in. (35 mm).

G. Chlorinated Polyvinyl Chloride (CPVC) Pipe — Nom 2 in. diam (or smaller) BLAZEMASTER® SDR13.5 CPVC for use in closed (process or supply) piping systems. The annular space between conduit and periphery of opening shall be min 1/4 in. (6 mm) to max 1-3/8 in. (35 mm).

Penetrant Type	Min Annular Space,	T Rating	Diam of Opening in Floor and Ceiling
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	in. (mm)		
A, B, C, E, F, G	0 (point contact)	0 Hr	2 in. (51 mm) greater than nom diam of penetrant
B, C, D, F, G	1/4 (6 mm)	Equal to hourly rating of floor/ceiling	1-1/2 in. (38 mm) greater than nom diam of penetrant

3. Firestop System — The firestop system shall consist of the following:

A. Packing Material — (Optional) — Foam backer rod firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor to accommodate the required thickness of fill material.

B. Fill, Void or Cavity Material* — Caulk — Min 3/4 in. (19 mm) thickness of fill material applied within the annulus on top surface of floor. Min 5/8 in. (16 mm) thickness of fill material applied within the annulus between penetrant and gypsum ceiling board, flush with ceiling. At point contact locations, additional fill material to be installed such that a min 3/8 in. (9.5 mm) crown is formed around the penetrating item on top and bottom surface of floor.

A/D FIRE PROTECTION SYSTEMS INC — A/D FIREBARRIER Intumescent Sealant II

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

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