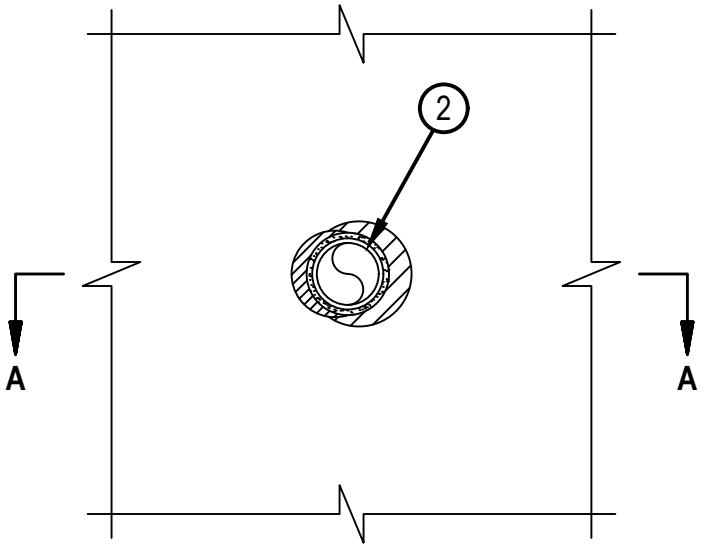
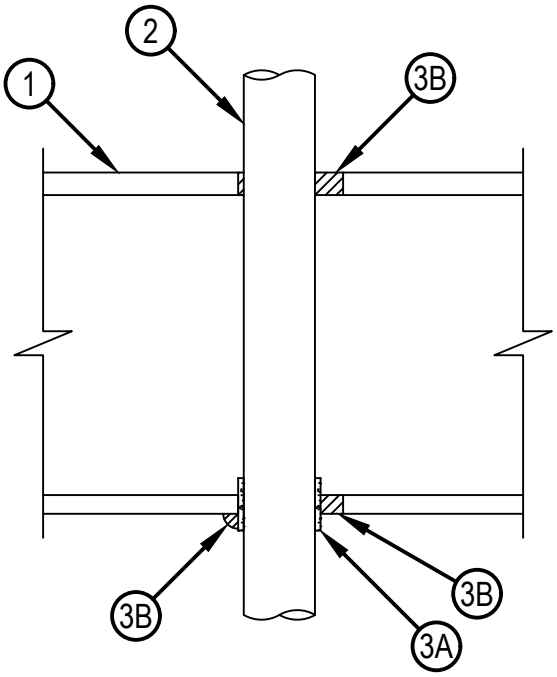
System No. F-C-2524

Classified by
Underwriters Laboratories, Inc.
to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 1 Hr	F Rating — 1 Hr
T Ratings — ½ and 1 Hr (See Item 2)	FT Ratings - ½ and 1 Hr (See Item 2)
	FH Rating — 1 Hr
	FTH Ratings — ½ and 1 Hr (See Item 2)



BOTTOM VIEW



SECTION A-A

System tested with a pressure differential of 2.5 Pa between the exposed and the unexposed surfaces with the higher pressure on the exposed side.

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 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. Max diam of opening shall be 3-1/2 in. (89 mm).
   B. Wood Joists* — 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.
   C. Gypsum Board* — Min 5/8 in. (16 mm) thick as specified in the individual Floor-Ceiling Design. Gypsum board secured to wood joists or furring channels as specified in the individual Floor-Ceiling Design. Max diam of opening shall be 3-1/2 in. (89 mm).

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1.1. Chase Wall — (Optional, not shown) The through penetrant may be routed (Item 2) through a fire rated or non-rated single, double or staggered wood stud/gypsum wallboard chase wall constructed to include the following construction details:

A. Studs — Nom 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 6 in. (51 by 152 mm) or parallel 2 by 4 in. (51 by 102 mm) lumber plates, tightly butted. Max diam of opening is 3-1/2 in. (89 mm).

C. Top Plate — The double top plate shall consist of 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. Max diam of opening is 3-1/2 in. (89 mm).

D. Gypsum Board* — One layer of min 1/2 in. (13 mm) gypsum board as specified in the individual Floor-Ceiling Design.

2. Through Penetrants — One nonmetallic pipe or conduit to be installed concentrically or eccentrically within the opening. The annular space between pipe or conduit and the periphery of the opening to be a min 3/16 in. (4.8 mm) to a max 15/16 in. (24 mm). Pipe or conduit to be rigidly supported on both sides of floor-ceiling assembly. The following types and sizes of nonmetallic pipes or conduit may be used:

A. Polyvinyl Chloride (PVC) Pipe — Nom 2 in. (51mm) diam (or smaller) Schedule 80 solid core PVC pipe for use in vented (drain, waste or vent) or closed (process or supply) piping systems.

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

C. Chlorinated Polyvinyl (CPVC) Pipe — Nom 2 in. (51 mm) diam (or smaller) Schedule 80 CPVC pipe for use in vented (drain, waste or vent) or closed (process or supply) piping systems.

D. Chlorinated Polyvinyl (CPVC) Pipe — Nom 2 in. (51 mm) diam (or smaller) Schedule 40 CPVC pipe for use in vented (drain, waste or vent) or closed (process or supply) piping systems.

E. Rigid Nonmetallic Conduit — Nom 2 in. (51 mm) diam (or smaller) Schedule 80 PVC conduit installed in accordance with the National Electrical Code (NFPA 70).

F. Rigid Nonmetallic Conduit — Nom 2 in. (51 mm) diam (or smaller) Schedule 40 PVC conduit installed in accordance with the National Electrical Code (NFPA 70).

The T Rating of the firestop system is dependent upon the type of through penetrant as shown in the table below :

Type of Through Penetrant	T Rating, Hr
2A, 2C, 2E	1
2B, 2D, 2F	1/2

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

A. Fill, Void or Cavity Material* - Wrap Strip — Single layer of nom 3/16 in. (5 mm) thick by 1-3/4 in. (44 mm) wrap strip wrapped around pipe with ends tightly butted and held in place with foil tape. Wrap strip slid into the annular space such that the wrap strip is centered in the gypsum board ceiling, or extending below lower top plate for half of the wrap strip height.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 648E Wrap Strip

B. Fill, Void or Cavity Material* - Sealant — Min 5/8 in. (16 mm) thickness applied within the anulus, flush with the bottom surface of the ceiling or lower top plate. An additional min 1/2 in. (13 mm) bead applied around periphery of wrap strip, at the wrap strip gypsum board interface or at the underside of the top plate. Min 3/4 in (19 mm) depth applied within the annulus, flush with the top surface of the floor or the top surface of the sole plate.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE-MAX Intumescent Sealant

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