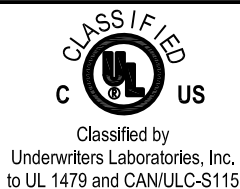
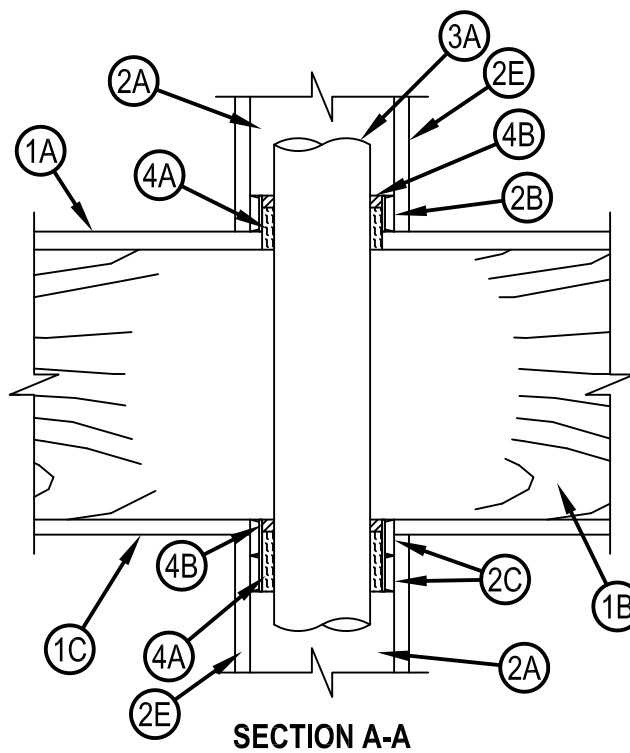
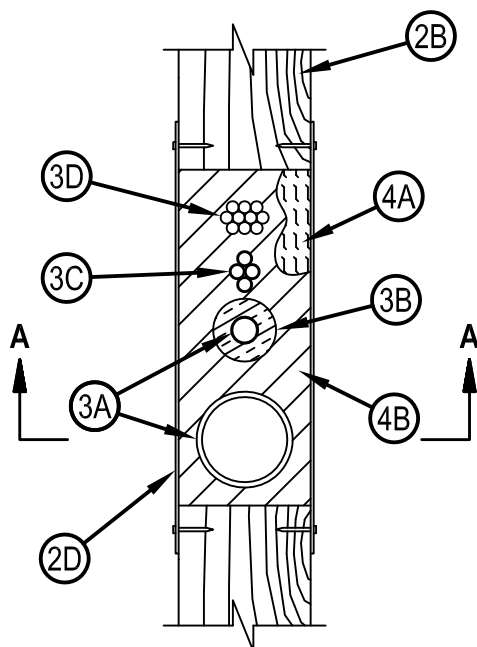


System No. F-C-8044



ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 1 Hr	F Rating — 1 Hr
T Rating — 1/4 and 1 Hr (See Item 3)	FT Rating — 1/4 and 1 Hr (See Item 3)
	FH Rating — 1 Hr
	FTH Rating — 1/4 and 1 Hr (See Item 3)



- 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 area of opening shall be 77 sq in. (497 cm²) with max dimension of 14 in. (356 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*** — Nom 4 ft (1.22 m) wide by 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.
- 2. Chase Wall** — The through penetrants shall be routed through a 1 hr fire rated wood stud/gypsum board chase wall 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 6 in. (51 by 152 mm) lumber studs.
 - B. Sole Plate** — Nom 2 by 6 in. (51 by 152 mm) lumber plates. Sole plate may be discontinuous across opening. Max size of opening is 5-1/2 in. by 14 in. (140 by 356 mm).
 - C. Top Plate** — The double top plate shall consist of two nom 2 by 6 in. (51 by 152 mm) lumber plates. Double top plate may be discontinuous across opening. Max size of opening is 5-1/2 in. by 14 in. (140 by 356 mm).



Hilti Firestop Systems

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December 27, 2013

D. Steel Straps — Min 1-1/2 in. (38 mm) wide by 30 gauge (or heavier) steel straps used to bridge opening on both sides of wall at sole plate when sole plate is discontinuous at opening in plywood floor. Steel straps to be cut to overlap a min of 2 in. (51 mm) onto sole plate on each side of opening and secured to sole plate with a min of two nails or screws on each side of opening on both sides of wall. Min 3 in. (76 mm) wide by 30 gauge (or heavier) steel straps used to bridge opening on both sides of wall at double top plate when top plate is discontinuous at opening. Steel straps to be cut to overlap a min of 2 in. (51 mm) onto top plate on each side of opening and secured to top plates with a min of two nails or screws on each side of opening on both sides of wall.

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

3. Through Penetrants — One or more metallic or nonmetallic pipes, conduits, tubing or cables, in any combination, to be installed either concentrically or eccentrically within the opening. Separation between penetrants to be min 1/4 in. (6 mm) to max 1-1/2 in. (38 mm). Annular space between the penetrants and the periphery of the opening shall be min 0 in. (point contact) to max 1-1/2 in. (38 mm) except that the min annular space between non-insulated metallic penetrant and the periphery of the opening shall be 1/2 in. (13 mm). Penetrants to be rigidly supported on both sides of floor-ceiling assembly. The following types and sizes of through penetrants may be used:

A. Metallic Penetrants — A maximum of one metallic penetrant within the system shall have a nom diam greater than 1 in. (25 mm). The following types and sizes of metallic pipes, conduits or tubes may be used.

A1. Steel Pipe — Nom 4 in. (102 mm) diam (or smaller) Schedule 5 (or heavier) steel pipe.

A2. Iron Pipe — Nom 4 in. (102 mm) diam (or smaller) cast or ductile iron pipe.

A3. Copper Pipe or Tubing — Nom 4 in. (102 mm) diam (or smaller) Type L (or heavier) copper tube or Regular (or heavier) copper pipe.

A4. Conduit — Nom 4 in. (102 mm) diam (or smaller) rigid steel conduit or steel electrical metallic tubing (EMT).

B. Pipe Covering - Tube Insulation - Plastics+ — (Optional) - Nom 3/4 in. (16 mm) thick acrylonitrile butadiene/polyvinyl chloride (AB/PVC) flexible foam furnished in the form of tubing. Pipe covering may be installed on metallic pipe or tube penetrants (Items 3A1, 3A2, and 3A3) not exceeding nom 1 in. (25 mm) diam.

See Plastics+ (QMFZ2) category in the Plastics Recognized Component Directory for names of manufacturers. Any Recognized Component tube insulation material meeting the above specifications and having a UL 94 Flammability Classification of 94-5VA may be used.

C. Cross Linked Polyethylene (PEX) Tubing — Nom 1/2 in. (13 mm) diam (or smaller) SDR 9 PEX tubing for use in closed (process or supply) or vented (drain, waste or vent) piping systems. A max of four tubes can be bundled together and installed within the opening.

D. Cables — Nom 3 in. (76 mm) diam (or smaller) tight bundle of cables. Any combination of the following types and sizes of cables may be used:

D1. Max 25 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with PVC insulation and jacketing.

D2. Max 3/C No. 8 AWG (or smaller) steel metal clad cable.

D3. Max RG/U coaxial cable with copper conductor and fluorinated ethylene insulation and jacket.

D4. Max 3/C No. 2 AWG (or smaller) aluminum conductor service entrance cable with PVC insulation and jacketing.

When bare (non-insulated) metallic penetrant is used, T Rating is 1/4 hr. Otherwise, T Rating is 1 hr.

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

A. Packing Material — Min 1-3/4 in. (45 mm) thickness of min 4 pcf (64 kg/m³) density mineral wool batt insulation firmly packed into the opening within the sole plate/plywood subfloor and a min 2-1/2 in. thickness of min 4 pcf (64 kg/m³) density mineral wool batt insulation firmly packed into the opening within the double top plate. The packing material is to be recessed from the top surfaces of the sole plate and top plate to accommodate the required thickness of fill material.

B. Fill, Void or Cavity Materials* - Sealant — Min 1/2 in. (13 mm) thickness of sealant applied within annular space, flush with top surface of sole plate and flush with top surface of double top plate.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP604 or CFS-S SIL SL Sealant

*Bearing the UL Classification Mark

