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Underwriters Laboratories, Inc.
to UL 1479

System No. W-L-2447

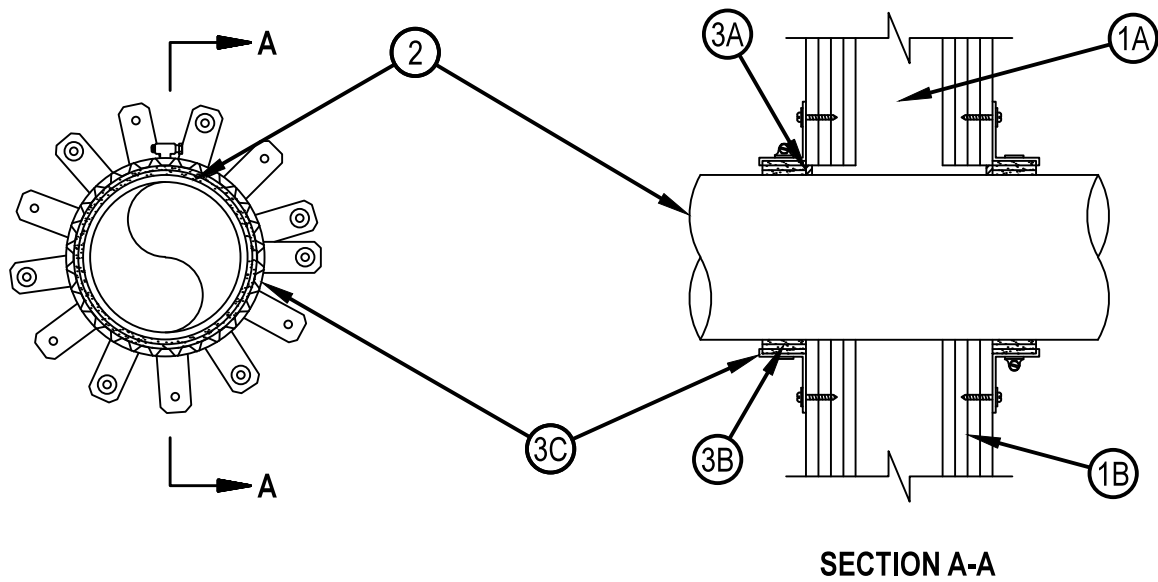
F Ratings - 1, 2, 3 and 4 Hr (See Item 1)

T Ratings - 1, 2, 3 and 4 Hr (See Item 2)

L Rating At Ambient - 3 CFM/sq ft

L Rating At 400 F - Less Than 1 CFM/sq ft

WL 2447



SECTION A-A

1. Wall Assembly — The 1, 2, 3 or 4 hr fire rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

- A. Studs — Wall framing shall consist of min 3-1/2 in. (89 mm) wide steel channel studs spaced max 24 in. (610 mm) OC.
- B. Gypsum Board* — Min 1/2 in. (13 mm) thick, 4 ft (1.22 m) wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Design in the UL Fire Resistance Directory. Max diam of opening is 7 in. (178 mm).

The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.

2. Through Penetrants — One nonmetallic pipe to be installed concentrically or eccentrically within the firestop system. Annular space between pipe and periphery of opening to be min 0 in. (point contact) and max 1/2 in. (13 mm). Pipe to be rigidly supported on both sides of wall assembly. The following types and sizes of nonmetallic pipes may be used:

- A. Polyvinyl Chloride (PVC) Pipe — Nom 6 in. (152 mm) diam (or smaller) Schedule 40 solid or cellular core PVC for use in closed (process or supply) or vented (drain, waste or vent) piping systems.
- B. Chlorinated Polyvinyl Chloride (CPVC) Pipe — Nom 6 in. (152 mm) diam (or smaller) SDR13.5 CPVC for use in closed (process or supply) piping systems.
- C. Acrylonitrile Butadiene Styrene (ABS) Pipe — Nom 6 in. (152 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.

The hourly T Rating of the firestop system is 1 hr except that for nom 2 in. (51 mm) diam (or smaller) penetrants, the hourly T Rating is equal to the hourly fire rating of the wall assembly in which it is installed.



Hilti Firestop Systems

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January 22, 2015



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

A. Fill, Void or Cavity Materials* - Sealant — Min 1/4 in. (6 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall.

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

B. Fill Void or Cavity Material* - Wrap Strip — Nom 3/16 in. (5 mm) thick by 1-3/4 in. (45 mm) wide intumescent wrap strip continuously wrapped around the pipe. Wrap strip butted tightly against both surfaces of wall. The number of layers of wrap strip required depends on penetrant size as specified in the Table below.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP648-E-W45/1-3/4

Nom Pipe Diam, in.	No. of Layers of Wrap Strip Required
6 (or smaller)	3
4 (or smaller)	2
2 (or smaller)	1

C. Steel Collar — Collar fabricated from coils of precut min 0.017 in. (0.43 mm) thick (No. 28 MSG) galv steel available from the sealant manufacturer. Collar shall be nom 1-3/4 in. (45 mm) deep with 1 in. (25 mm) wide by 2 in. (51 mm) long anchors tabs on 2 in. (51 mm) centers for securement to wall assembly. The anchor tabs shall be bent 90 degree outward for securement to the wall assembly. The opposite side incorporates retainer tabs, 1/2 in. (13 mm) wide by 3/16 in. (5 mm) long, prebent toward the pipe surface. Collar shall be tightly wrapped over the wrap strip, overlapping min. 1 in. (25 mm) at seam. A nom 1/2 in. (13 mm) wide stainless steel band clamp shall be secured to the collar at its mid-height. Anchor tabs of collar secured to surface of wall by means of nom 3/16 in. diam by 2-1/2 in. long steel toggle bolts in conjunction with 1-1/4 in. (32 mm) diam steel fender washers at every other anchor tab. As an alternate, in 1 and 2 hr rated walls, every anchor tab of collar may be secured to surface of wall by means of nom 1-1/4 in. (32 mm) long steel laminating drywall screws in conjunction with 1-1/4 in. (32 mm) diam steel fender washers. A collar is used on both sides of wall.

* 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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