

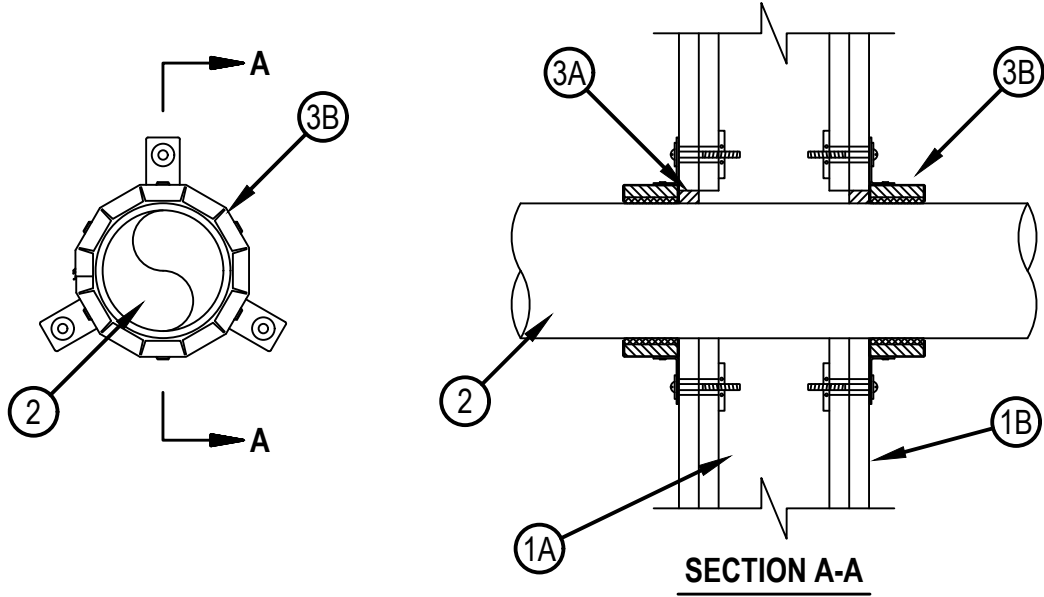


Classified by  
Underwriters Laboratories, Inc.  
to UL 1479

### System No. W-L-2593

F Ratings — 1 and 2 Hr (See Item 1)  
T Rating — 1 and 2 Hr (See Item 1)

WL 2593



1. Wall Assembly — The 1 or 2 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 or Partition Design in the UL Fire Resistance Directory and shall include the following construction features:
  - A. Studs — Wall framing may consist of either wood or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide spaced max 24 in. (610 mm) OC.
  - B. Gypsum Board\* — Min 5/8 in. (16 mm) thick gypsum board. Max diam of opening is 3-1/2 in. (89 mm).

The hourly F and T Ratings 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 installed concentrically or eccentrically within opening. The annular space between pipe and opening shall be min 0 in. (point contact) to max 3/8 in. (10 mm). The following types and sizes of through penetrants may be used:
  - A. Crosslinked Polyethylene (PEX) Tubing — Nom 3 in. (76 mm) diam (or smaller) UPONOR - WIRSBO hePEX crosslinked polyethylene (PEX) SDR 9 PEX tubing for use in closed (process or supply) piping systems.
3. Firestop System — The firestop system shall consist of the following:
  - A. Fill, Void or Cavity Materials\* — Min 5/8 in. (16 mm) thickness of fill material shall be applied within annulus between nonmetallic pipe and periphery of opening, flush with both sides of wall.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE MAX Intumescent Sealant
  - B. Firestop Device\* — Firestop Collar — Firestop collar shall be installed in accordance with the accompanying installation instructions. Collar to be installed and latched around the pipe and secured to both sides of wall using the anchor hooks provided with the collar. Minimum two anchor hooks for nom 1-1/2 and 2 in. (38 and 51 mm) diam pipes. Minimum three anchor hooks required for nom 3 in. (76 mm) diam pipes. The anchor hooks are to be secured to the surface of wall with min 3/16 in. (4.8 mm) diam by min 2-1/2 in. (64 mm) long steel toggle bolts.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 643N 90/3", CP 643 63/2"N, CP 643 63/1.5"N
  - B1. Fill, Void or Cavity Material\* — Wrap Strip — As an alternate to Item B, nom 3/16 in. (5 mm) thick by nom 1-3/4 in. (44 mm) wide intumescent wrap strip is continuously wrapped around the outer circumference of the pipe three times with ends held in place with tape. Wrap strip butted flush against surface of sealant (Item 3A) and gypsum at both sides of wall.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP648-E Wrap Strip
  - C. Steel Collar — Used in conjunction with Item B1. Steel collar fabricated from coils of precut min 0.016 in. (0.4 mm) thick (No. 28 gauge) galv steel available from fill material manufacturer. Collar shall be nom 1-3/4 in. (44 mm) deep with 1 in. (25 mm) wide by 2 in. (51 mm) long anchor tabs on 1-3/4 in. (44 mm) centers for securement to both sides of wall. The opposite side incorporates retainer tabs, 1/2 in. (13 mm) wide by 3/16 in. (5 mm) long, pre-bent 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 hose clamp shall be secured to the collar at its mid-height. Every other anchor tab of collar secured to wall with 1/4 in. (6 mm) diam steel toggle bolts along with min 3/4 in. (19 mm) diam steel washers.

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