

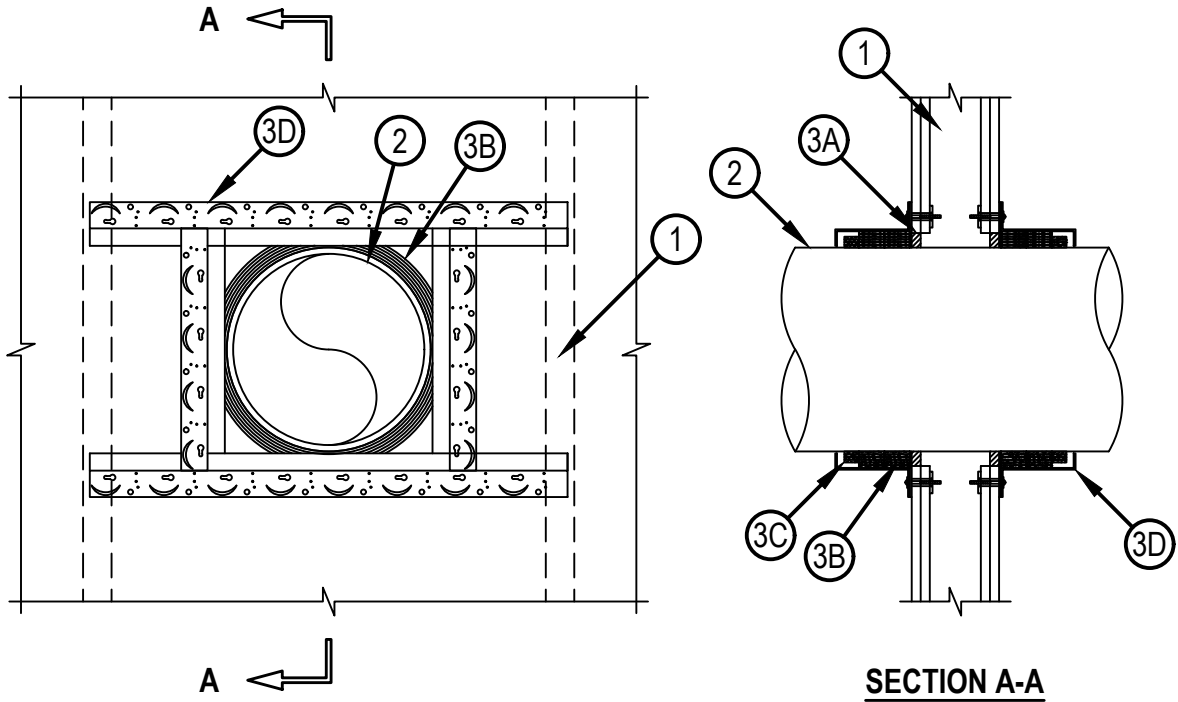


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Underwriters Laboratories, Inc.  
to UL 1479 and CAN/ULC-S115

# System No. W-L-2741

WL 2741

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



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. 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 within the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall incorporate the following construction features:
  - A. Studs — Wall framing shall consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced max 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.
  - B. Gypsum Board\* — Nom 5/8 in. (16 mm) thick gypsum board as specified in the individual Wall and Partition Design. Opening in gypsum board to be Max 16 in. (406 mm). Diam of opening is max 2 in. (51 mm) larger than the outside diam of the penetrating item. The hourly F, FT and FTH Ratings of the firestop system are dependent upon the hourly rating of the wall in which it is installed.



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June 8, 2023

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 1/2 in. (13 mm) to max 1-1/2 in. (32 mm).
- A. Polyvinyl Chloride (PVC) Pipe — Nom 14 in. (355 mm) diam (or smaller) Schedule 40 solid core PVC for use in closed (process or supply) or vented (drain, waste or vent) piping systems.
  - B. Chlorinated Polyvinyl Chloride (CPVC) Pipe — Nom 14 in. (355 mm) diam (or smaller) Schedule 40 CPVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.
3. Firestop System — The firestop system shall consist of the following:
- A. Fill, Void or Cavity Material\* — Min 5/8 in. (16 mm) or 1-1/4 in. (32 mm) thickness of sealant applied within the annulus applied flush with both surfaces of wall assembly for 1 and 2 Hr rated assemblies, respectively.  
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE MAX Intumescent Sealant
  - B. Fill, Void or Cavity Material\* — Two stacks of six layers of intumescent wrap strip are continuously wrapped around the pipe with ends held in place with masking or aluminum tape. Butted ends in successive layers shall be offset. Wrap strip butted tightly against both surfaces of wall.  
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP648-E W45/1-3/4" Firestop Wrap Strip
  - C. Fill, Void or Cavity Material\* — Wrap Strip - Four layers of intumescent wrap strip are continuously wrapped around the pipe with ends held in place with masking or aluminum tape. Butted ends in successive layers shall be offset. Wrap strip butted tightly against double stack of wrap strip (Item 3C) at both surfaces of wall.  
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP648-E W25/1" Firestop Wrap Strip
  - D. Firestop Device\* — Z-frame two vertical side pieces cut to a length equal to the OD of the double stack wrap strip and installed in point contact with the wrap strip (Item 3C). The top and bottom horizontal pieces are cut to the width of the stud spacing plus 2 in. (51 mm) to insure overlap and anchoring onto the framing. The four sides are assembled to form a 5 in. (127 mm) deep rectangular enclosure around the wrap strip material. The 2 in. leg of each piece of Z-frame fastened to the wall through each of the round 3/8 in. (9.5 mm) diam pre-made holes in outer edge of Z-frame with 3/16 in. (4.8 mm) hollow wall anchors in conjunction with 1 in. (25 mm) diam fender washers. In addition, the overhanging top and bottom legs are secured to the wall framing with steel fasteners in conjunction with 1 in. (25 mm) diam fender washers. Z-frame enclosure installed at both sides of wall.  
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 675T Z-Frame
  - E. Attachment Clip — (Not shown) At each corner of the Z frame enclosure the butting pieces of Z-frame shall be secured with one CP 643N attachment clip centered at mid-depth of Z-frame. Each leg of clip is attached to the Z-frame with a min 3/4 in. long steel screw and 3/4 in. diam. steel washer.  
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 643N attachment clips
  - F1. Cover Plate — (Not shown) A min 24 ga sheet steel cover secured to the 1 in. (25 mm) legs of Z-frame to close off the bottom of the enclosure. Cover plate to be two pieces with a 1 in. (25 mm) overlap at the seam. cover plate secured with min five 3/4 in. (19 mm) long sheet metal screws equally spaced at each side, with a fastener at each corner and at each seam. Cover plate sized to the OD of the Z-frame enclosure and to within 1/4 in. (6 mm) of the penetrant contour.
  - F2. Composite Sheet\* — (Not shown) As an alternate to the cover plate (Item 3F1), cover plate may consist of Hilti CFS-COS Firestop Composite Sheet. Composite sheet cover plate secured to the 1 in. (25 mm) legs of Z-frame to close off the bottom of the enclosure. Cover plate to be two pieces with a 1 in. (25 mm) overlap at the seam. Cover plate secured with min three 3/4 in. (19 mm) long sheet metal screws and min 3/4 in. (19 mm) diam steel washers equally spaced at each side, with a fastener at each corner and at each seam, Cover plate sized to the OD of the Z-frame enclosure and to within 1/4 in. (6 mm) of the penetrant contour.  
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — Hilti CFS-COS Firestop Composite Sheet

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

