



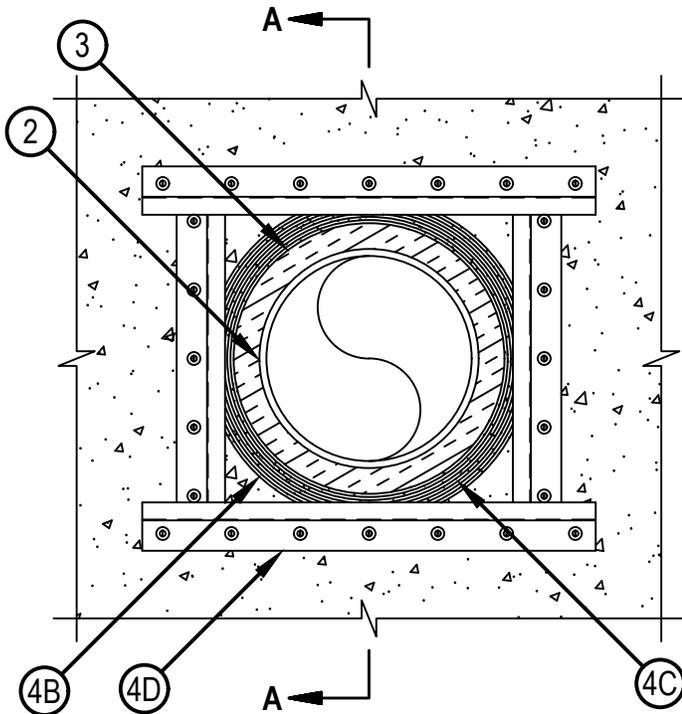
Classified by  
Underwriters Laboratories, Inc.  
to UL 1479

## System No. W-J-5236

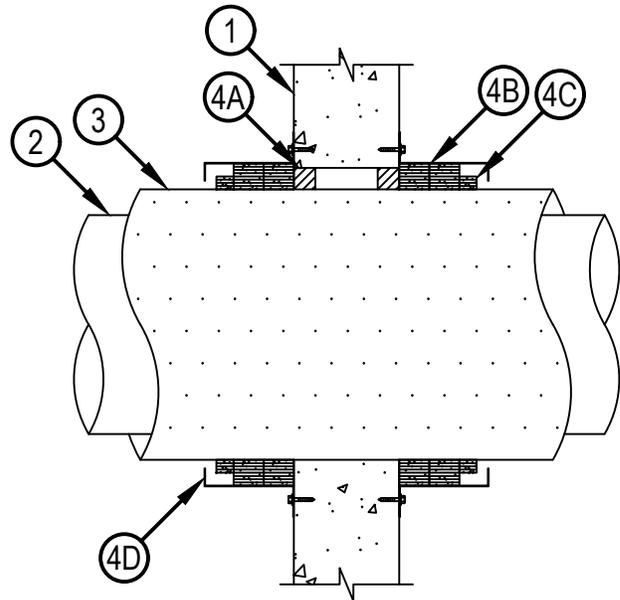
F Rating - 2 Hr  
T Rating - 2 Hr

WJ 5236

**FRONT VIEW**



**SECTION A-A**



1. Wall Assembly — Min 6 in. (152 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m<sup>3</sup>) concrete. Wall may also be constructed of any solid or filled UL Classified Concrete Blocks\* Opening in wall to be max 17 in. (432 mm). Diam of opening is max 1-1/2 in. (38 mm) larger than the outside diam of the insulated penetrating item.

See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.

2. Through Penetrants — One nonmetallic pipe to be installed concentrically or eccentrically within the firestop system. Pipe is intended for use in closed (process or supply) or vented (drain, waste or vent) piping systems. Pipe to be rigidly supported on both sides of wall assembly. The following types of pipes may be used:

- a. Polyvinyl Chloride (PVC) Pipe — Nom 12 in. (305 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 12 in. (305 mm) diam (or smaller) Schedule 40 CPVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

3. Pipe Covering — The following pipe covering shall be used:

- a. Pipe Covering\* — Max 1-1/2 in. (38 mm) thick hollow cylindrical heavy density (min 3.5 pcf or 56 kg/m<sup>3</sup>) glass fiber units jacketed on the outside with an all service jacket. Longitudinal joints sealed with metal fasteners or factory-applied self-sealing lap tape. Transverse joints secured with metal fasteners or with butt tape supplied with the product. Annular space between the insulated penetrant and periphery of opening when the insulation thickness is nominal 1-1/2 in. (38 mm) shall be min 0 in. (point contact) to max 1-1/4 in. (19 mm). Annular space between the insulated penetrant and periphery of opening when the insulation thickness is less than 1-1/2 in. (38 mm) shall be min 1/2 in. (13 mm) to max 3/4 in. (19 mm).

See Pipe and Equipment Covering - Materials (BRGU) category in the Building Materials Directory for names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.



**Hilti Firestop Systems**

Reproduced by HILTI, Inc. Courtesy of  
Underwriters Laboratories, Inc.  
May 23, 2025

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

- a. Fill, Void or Cavity Material\* — Min 1-1/4 in. (32 mm) thickness of sealant applied within the annulus applied flush with both surfaces of wall assembly.

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

- b. Fill, Void or Cavity Material\* — Two stacks of eight layers of nom 3/16 in (4.8 mm) by 1-3/4 in. (44.4 mm) intumescent wrap strip are continuously wrapped around the insulated 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\* — Four layers of nom 3/16 in (4.8 mm) by 1 in. (25.4 mm) intumescent wrap strip are continuously wrapped around the insulated pipe with ends held in place with masking or aluminum tape. Butted ends in successive layers shall be offset. Wrap strip butted tightly against the double stack of wrap strip (Item 4B) at both sides of wall.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP648-E W25/1" Firestop Wrap Strip

- d. Firestop Device\* — Z-frame (four 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 4B) at the four sides to form a 5 in. (127 mm) deep rectangular enclosure around the wrap strip material. The 2 in. (51 mm) 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) by 1-1/4 in. (32 mm) long steel concrete screw anchors in conjunction with 1 in. (25 mm) diam fender washers. The four pieces of Z-frame are butted at the four corners. Z-frame enclosure installed on 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. (19 mm) long steel screw and 3/4 in. (19 mm) diam. steel washer.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 643N Attachment Clips

- f. 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.

- g. Composite Sheet\* —(Not shown) As an alternate to the cover plate (Item 4f), 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 five 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.

