

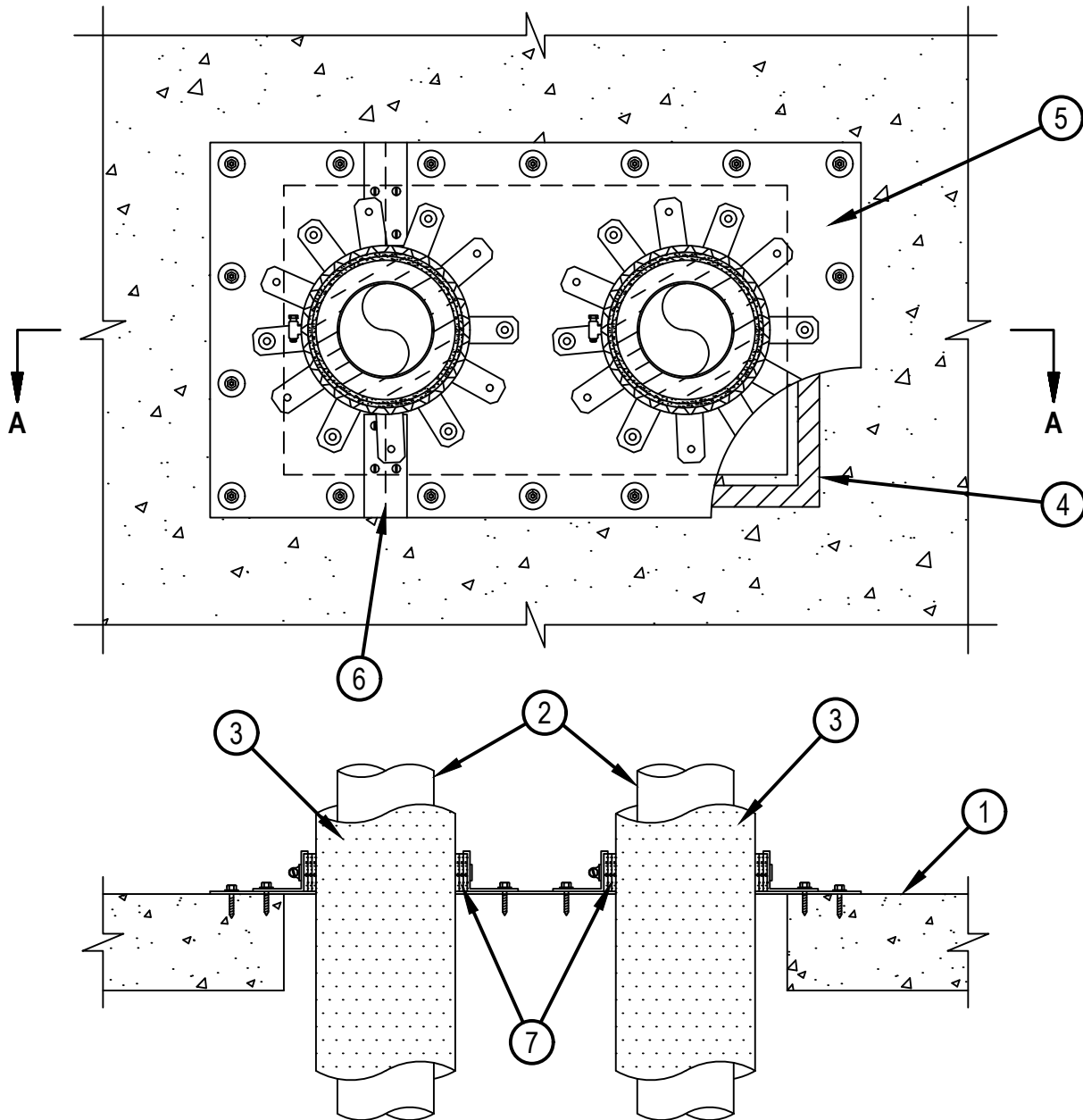


Classified by
Underwriters Laboratories, Inc.
to UL 1479 and CAN/ULC-S115

System No. C-AJ-5444

CAJ 5444

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating - 2 Hr	F Rating - 2 Hr
T Rating - 0 Hr	FT Rating - 0 Hr
	FH Rating - 2 Hr
	FTH Rating - 0 Hr



SECTION A-A



Hilti Firestop Systems

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June 8, 2023

System No. C-AJ-5444

CAJ 5444

1. Floor or Wall Assembly — Min 4-1/2 in. (114 mm) thick lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Max area of opening 240 sq in. (5806 cm²) with max dimension 20 in. (508 mm).
See Concrete Blocks (CAZT) in the Fire Resistance Directory for names of manufacturers.
2. Through Penetrant — One or more metallic pipes or conduits to be installed either concentrically or eccentrically within the firestop system. Through penetrant to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipe or conduit may be used:
 - A. Steel Pipe — Nom 4 in. (102 mm) diam (or smaller) Schedule 40 (or heavier) steel pipe.
 - B. Iron Pipe — Nom 4 in. (102 mm) diam (or smaller) cast or ductile iron pipe.
 - C. Steel Conduit — Nom 4 in. (102 mm) diam (or smaller) rigid steel conduit.
 - D. Copper Tubing — Nom 4 in. (102 mm) diam (or smaller) Type L (or heavier) copper tubing.
 - E. Copper Pipe — Nom 4 in. (102 mm) diam (or smaller) Regular (or heavier) copper pipe.
3. Pipe Covering* — Max 2 in. (51 mm) thick hollow cylindrical heavy density (min 3.5 pcf or 56 kg/m³) 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. The annular space between the insulated penetrant and the periphery of opening is min 0 in. (point contact) to max 5 in. (127 mm). The annular space between the insulated penetrant and the periphery of opening in the composite sheet (Item 5) shall be min 0 in. (point contact or continuous point contact) to a max of 1/4 in. (6 mm). The min annular between penetrants shall be 3 in. (76 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.
- 3A. Tube Insulation-Plastics+ — (Not shown) As an alternate to Item 3, nom 1/2 to 1 in. (13 to 25 mm) thick acrylonitrile butadiene/polyvinyl chloride (AB/PVC) flexible foam furnished in the form of tubing. The annular space between the insulated penetrant and the periphery of opening is min 1/4 in. (6 mm) to max 5 in. (127 mm). The annular space between the insulated penetrant and the periphery of opening in the composite sheet (Item 5) shall be min 0 in. (point contact or continuous point contact) to a max of 1/4 in. (6 mm). The min annular between penetrants shall be 3 in. (76 mm).
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.
4. Fill, Void or Cavity Materials* — One layer of 1 by 1/8 in. (25 by 3 mm) thick putty strips or min 1/2 in. (13 mm) diameter bead of sealant positioned under composite sheet around entire perimeter of through opening.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 619T Firestop Putty Roll, CP 617 Firestop Putty Pad or FS-ONE MAX Intumescent Firestop Sealant
5. Fill, Void or Cavity Materials* — Composite Sheet — Rigid aluminum foil-faced intumescent sheet with steel backer. Sheets cut to tightly follow the contour of the through-penetrants with an annular space equal to or less than 1/4 in. (6 mm). Sheets cut to lap a min of 2 in. (51 mm) onto floor or wall surfaces. Sheet installed on top surface of floor or both surfaces of wall. Sheet to be installed with the steel backer exposed (aluminum foil facing against floor or wall surface) and secured to floor or wall surface with min 3/16 in. (4.8 mm) diam by 1-1/4 in. (32 mm) long steel anchor screws, in conjunction with min 1-1/4 in. (32 mm) diam steel fender washers. As alternative concrete anchors, when composite sheet overlaps a min of 3 in. (76 mm) onto floor or wall surfaces, 1-1/16 in. (27 mm) long Hilti X-GN 27 MX nails in conjunction with min 1-1/4 in. (32 mm) diam steel fender washers may be used. Fasteners to be installed at each corner. Max spacing of fasteners not to exceed 6 in. (152 mm) and max 2 in. (51 mm) from ends with additional fasteners located on each side of butted seams or slits (see Item 6) made to permit installation of the sheet around through-penetrants.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — Hilti CFS-COS Firestop Composite Sheet
6. Cover Strip — Min 2 in. (51 mm) wide strip of min 0.021 in. (0.53 mm) thick (26 ga) stainless steel centered over entire length of the butted seam or slit made in the composite sheet (Item 5). Steel cover strip secured to steel backer of composite sheet with steel sheet metal screws or steel rivets spaced max 3 in. (76 mm) OC on each side of seam or slit.



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

A. Fill, Void or Cavity Material* — Three layers of nom 1-3/4 in. (44 mm) wide wrap strip continuously wrapped around circumference of penetrating item for fiberglass insulated pipes and pipes with 1 in. (25 mm) thick AB/PVC insulation. For pipes with 1/2 in. (13 mm) thick insulation, two layers of nom 1-3/4 in. (44 mm) wide wrap strip continuously wrapped around circumference of penetrating item. Wrap strip to overlap a min 1 in. (25 mm) and be secured with foil tape and butted to top of composite sheet in floors or both sides of composite sheet in walls.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 648E

B. Steel Collar — Collar fabricated from coils of precut min 0.017 in. (0.4 mm) thick (No. 28 MSG) galv steel. Collar shall be nom 1-3/4 in. (44 mm) deep with 1 in. (25 mm) wide by 2 in. (51 mm) long anchors tabs on 2 in. centers for securement to floor or wall assembly. The anchor tabs shall be bent 90 degree outward for securement to the floor or wall assembly. 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 composite sheet with No. 10 self-drilling steel screws with 3/4 in. (19 mm) steel washers. Where tabs overlap on to concrete, the tabs should be secured near, but not on the concrete, , by either fastening through the tab or by fastening near the tab so that a steel washer can overlap a min 1/2 in. (13 mm) onto the tab. At locations where the pipe is in the corner of the opening, a maximum of two adjacent tabs may be left unsecured.

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

+ Indicates such products share bear the UL Recognized Component Mark.

