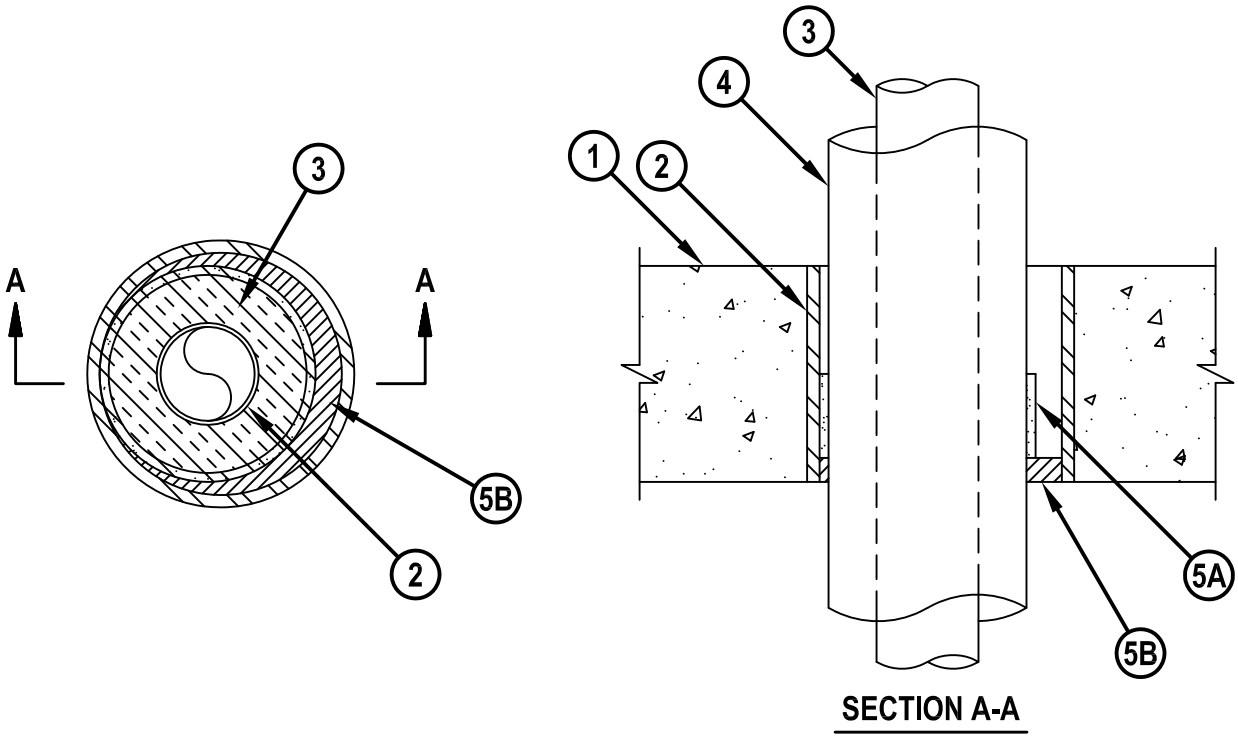
Classified by
Underwriters Laboratories, Inc.
to UL 1479 and CAN/ULC-S115

System No. C-AJ-5289

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 3 Hr	F Rating — 3 Hr
T Rating — 0 and 3/4 Hr (See Item 4)	FT Rating — 0 and 3/4 Hr (See Item 4)
	FH Rating — 3 Hr
	FTH Rating — 0 and 3/4 Hr (See Item 4)



SECTION A-A

1. Floor or Wall Assembly — Min 4-1/2 in. (114 mm) thick reinforced 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 diam of opening is 5 in. (127 mm).
   See Concrete Blocks (CAZT) category in Fire Resistance Directory for names of manufacturers.
2. Metallic Sleeve — (Optional) —Nom 5 in. (127 mm) diam (or smaller) Schedule 10 (or heavier) steel sleeve cast or grouted into floor or wall assembly, flush with floor or wall surfaces.
3. Through Penetrant — One metallic pipe or tubing to be installed concentrically or eccentrically within the opening. Through penetrant to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of through penetrants may be used:
   A. Steel Pipe — Nom 2 in. (51 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Iron Pipe — Nom 2 in. (51 mm) diam (or smaller) cast or ductile iron pipe.
   C. Copper Tubing — Nom 2 in. (51 mm) diam (or smaller) Type L (or heavier) copper tube.
   D. Copper Pipe — Nom 2 in. (51 mm) diam (or smaller) Regular (or heavier) copper pipe.

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4. Tube Insulation-Plastics+ — 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 through penetrant and the periphery of opening shall be min 3/16 in. (5 mm) to 3/4 in. (19 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.
   The T Rating of the firestop system is dependent upon the nom thickness of the tube insulation. If the nom thickness of the tube insulation is less than 1 in. (25 mm), the T Rating is 0 hr. If the nom thickness of the tube insulation is 1 in. (25 mm), the T Rating is 3/4 hr.
5. Firestop System — The firestop system shall consist of the following:
   A. Fill, Void or Cavity Material* — Wrap Strip — Single layer of nom 3/16 in. (5 mm) thick by 1-3/4 in. (45 mm) wide intumescent wrap strip continuously wrapped around insulated through penetrant once with butted end seams and secured together with aluminum foil tape. Wrap strip recessed from bottom surface of floor or both surfaces of wall to accommodate the required thickness of fill material. In wall assemblies, wrap strip shall be installed on both sides of the wall.
      HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 648E Firestop Wrap Strip
   B. Fill, Void or Cavity Material* — Sealant - Min 1/2 in. (13 mm) thickness of fill material applied within annulus, flush with bottom surface of floor or both surfaces of wall.
      HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE Sealant or FS-ONE MAX Intumescent Sealant

+Bearing the UL Recognized Component Mark

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