

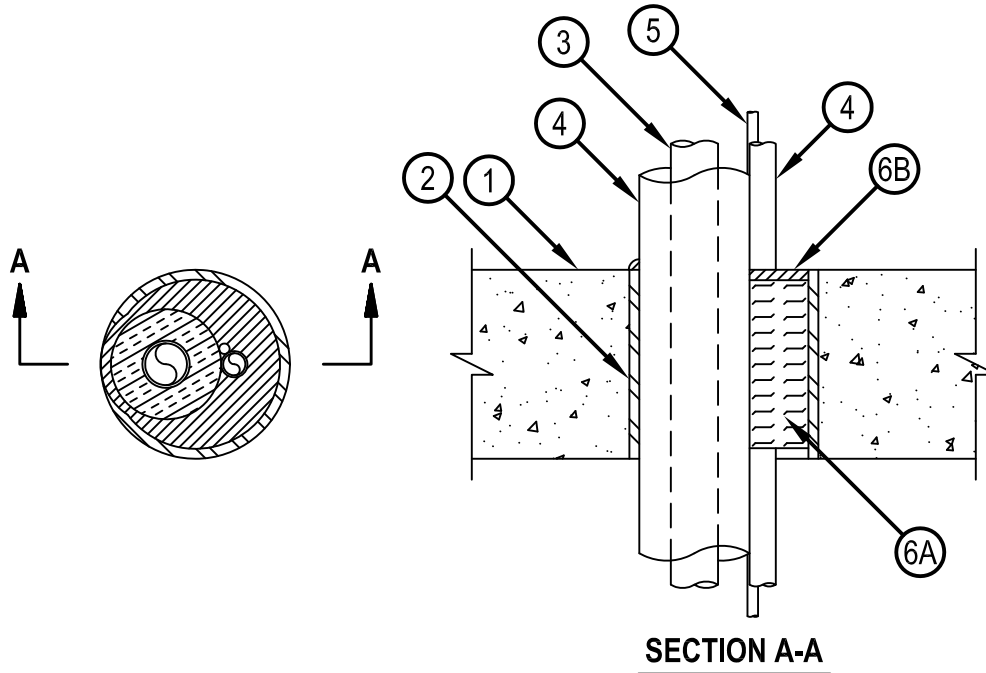


Classified by
Underwriters Laboratories, Inc.
to UL 1479 and CAN/ULC-S115

System No. C-AJ-8148

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

CAJ 8148



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. Floor may also be constructed of any min 6 in. (152 mm) thick UL Classified hollow-core Precast Concrete Units*. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is 4 in (102 mm).

See Concrete Blocks (CAZT) and Precast Concrete Units (CFTV) categories in the Fire Resistance Directory for names of manufacturers.

2. Metallic Sleeve — (Optional) — Nom 4 in. (102 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-Penetrants — A max of two pipes, conduits or tubing to be installed within the opening. Of the two pipes, conduits or tubing, only one of the pipes, conduit or tubing shall have a nom diam greater than 1/2 in. (13 mm). The annular space between pipes, conduits or tubing and the periphery of the opening shall be min 1/4 in. (6 mm) to max 1-1/2 in. (38 mm). The annular space between metallic penetrating items and the other penetrants shall be min 0 in. (point contact) to max 1-1/2 in. (38 mm). Pipes, conduits or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

A. Steel Pipe — Nom 1 in. (25 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. Iron Pipe — Nom 1 in. (25 mm) diam (or smaller) cast or ductile iron pipe.

C. Conduit — Nom 1 in. (25 mm) diam (or smaller) steel electrical metallic tubing or nom 1 in. diam (or smaller) steel conduit.

D. Copper Tubing — Nom 1 in. (25 mm) diam (or smaller) Type L (or heavier) copper tubing.

E. Copper Pipe — Nom 1 in. (25 mm) diam (or smaller) Regular (or heavier) copper pipe.

4. Tube Insulation — Plastics+ — Nom 3/4 in. (19 mm) thick acrylonitrile butadiene/polyvinyl chloride (AB/PVC) flexible foam furnished in the form of tubing. The tube insulation may be installed on a max of one pipe or tubing. The annular space between insulated penetrating item and periphery of opening shall be min 0 in. (point contact) to max 1-1/2 in. (38 mm). The annular space between insulated penetrating item and the other penetrants shall be a min 0 in. (point contact) to a max 1 in. (25 mm).

See Plastics+ (QMFZ2) category in the 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.



Hilti Firestop Systems

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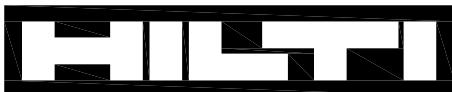
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5. Cables — Max one, 4 pair No. 18 AWG (or smaller) thermostat cable with polyvinyl chloride (PVC) insulation and jacket materials. Cable to be spaced a min 0 in. (point contact) to max 1-1/2 in. (38 mm) from the other penetrants. The annular space between the cable and the periphery of the opening shall be a min 1/2 in. (13 mm) to max 1 in. (25 mm). Cable to be rigidly supported on both sides of wall assembly.
6. Firestop System — The firestop system shall consist of the following:
 - A. Packing Material — Min 4 in. (102 mm) thickness of min 4 pcf (64 kg/m³) mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be forced into interstices of through penetrants to max extent possible. Packing material to be recessed from top surface of concrete floor or from both surfaces of wall to accommodate the required thickness of fill material. When the floor is constructed of hollow-core precast concrete units, packing material shall be installed flush with bottom surface of floor and recessed from top surface of floor to accommodate the required thickness of fill material.
 - B. Fill, Void or Cavity Material* — Sealant — Min 1/4 in. (6 mm) thickness of fill material applied within the annulus, flush with top surface of concrete floor or with both surfaces of wall assembly. Fill material to be forced into interstices of through penetrants to max extent possible.
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.



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