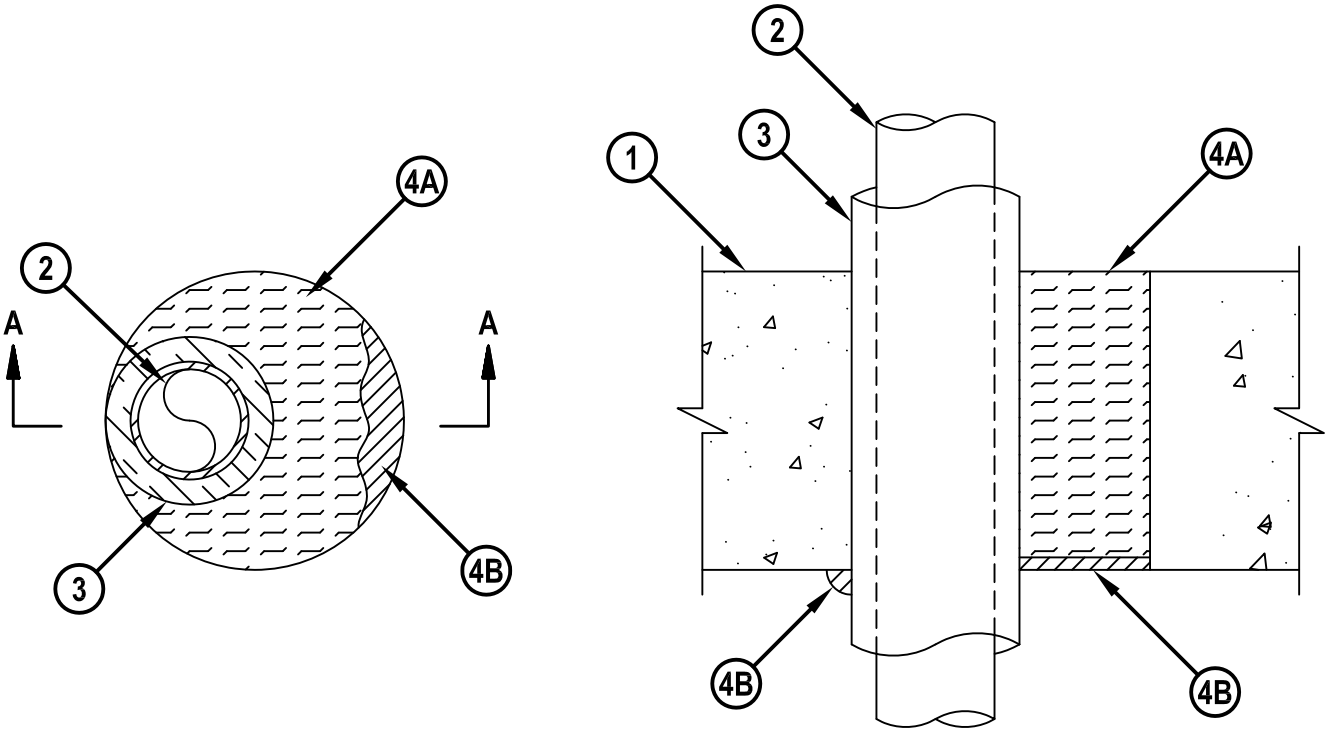
Classified by
Underwriters Laboratories, Inc.
to UL 1479 and CAN/ULC-S115

System No. C-BJ-5015

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 2 Hr	F Rating — 2 Hr
T Rating — 1-1/2 Hr	FT Rating — 1-1/2 Hr
	FH Rating — 2 Hr
	FTH Rating — 1-1/2 Hr



SECTION A-A

1. Floor or Wall Assembly — Min 6 in. (152 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete floor. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is 6 in. (152 mm).
   See Concrete Blocks (CAZT) category in Fire Resistance Directory for names of manufacturers.
2. Through Penetrant — One metallic pipe or tubing to be installed concentrically or eccentrically within 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. Copper Tubing — Nom 2 in. (51 mm) diam (or smaller) Type L (or heavier) copper tube.
   B. Copper Pipe — Nom 2 in. (51 mm) diam (or smaller) Regular (or heavier) copper pipe.
   C. Steel Pipe — Nom 2 in. (51 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
   D. Iron Pipe — Nom 2 in. (51 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

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3. Pipe Insulation — The through penetrant shall be insulated with one of the following types of pipe coverings:

A. Pipe Covering* — Nom 1 in. (25 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 through penetrant and the periphery of the opening shall be min 0 in. (0 mm, point contact) to max 1-7/8 in. (48 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.

B. Pipe Covering Materials* — Nom 1 in. (25 mm) thick unfaced mineral fiber pipe insulation having a nom density of 3.5 pcf (56 kg/m3) or heavier and sized to fit the outside diam of through penetrant. Pipe insulation secured with min 18 SWG steel wire spaced 12 in. (305 mm) OC. The annular space between the insulated through penetrant and the periphery of the opening shall be min 0 in. (0 mm, point contact) to max 1-7/8 in. (48 mm).

IIG MINWOOL L L C — High Temperature Pipe Insulation 1200, High Temperature Pipe Insulation BWT and High Temperature Pipe Insulation Thermaloc

B1. Sheathing Material — (Not shown) — Optional, used in conjunction with Item 3B. Foil-scrim-kraft or all service jacket material shall be wrapped around the outer circumference of the pipe covering material (Item 3B) with the kraft side exposed. Longitudinal joints sealed with metal fasteners.

See Sheathing Materials (BVDV) category in the Building Materials Directory for names of manufacturers. Any sheathing material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread value of 25 or less and a Smoke Developed value of 50 or less may be used.

4. Firestop System — The details of the firestop system shall be as follows:

A. Packing Material — Min 5-3/4 in. (146 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 recessed from bottom surface of floor or from both surfaces of wall to accommodate the required thickness of fill material.

B. Fill, Void or Cavity Materials* - Sealant — Min 1/4 in. (6 mm) thickness of fill material applied within the annulus, flush with bottom surface of floor or with one or both surfaces of wall. Min 1/2 in. (13 mm) bead of fill material applied at the concrete/pipe covering material interface on bottom surface of floor or on one or both surfaces of wall.

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

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