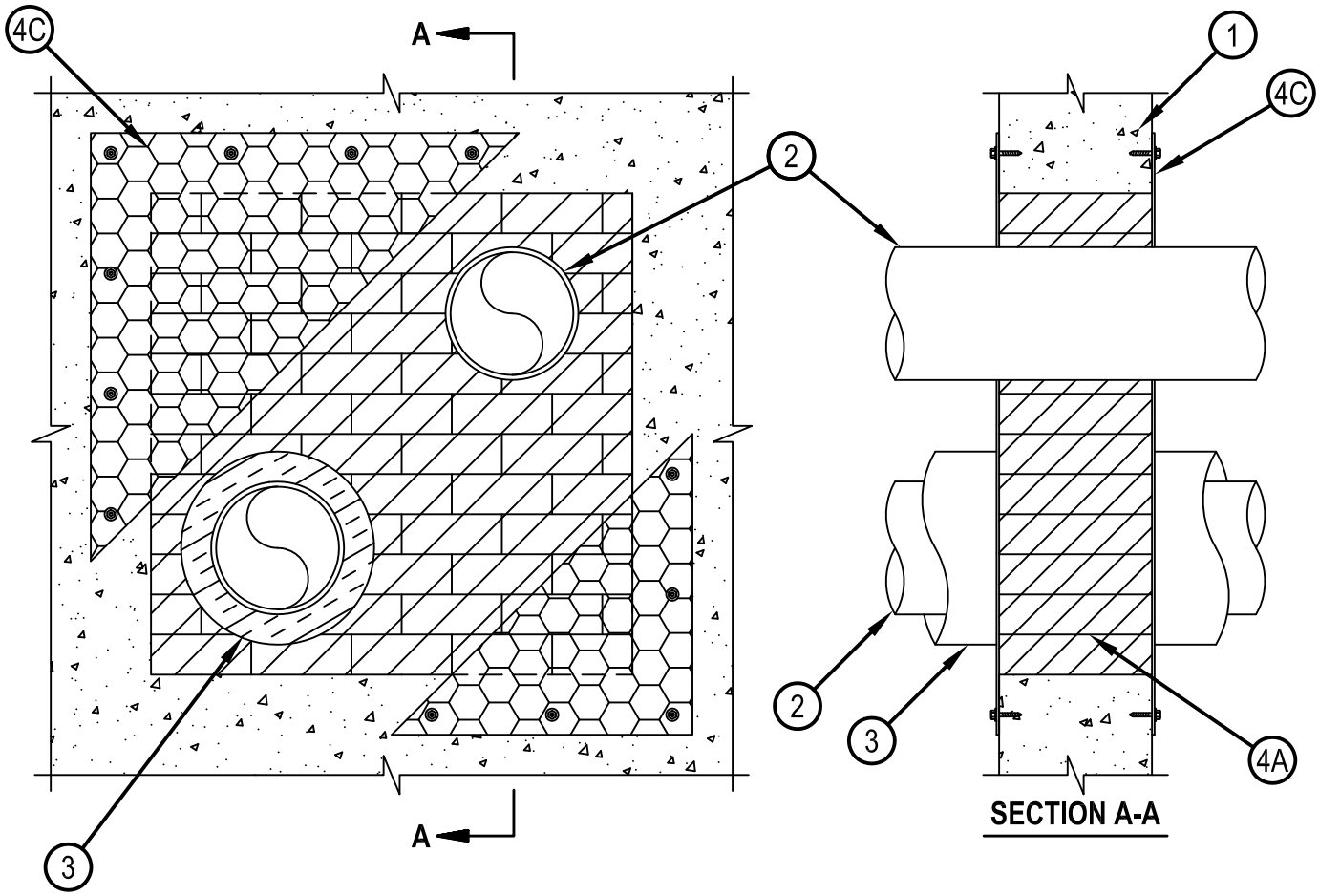
Classified by
Underwriters Laboratories, Inc.
to UL 1479 and CAN/ULC-S115

System No. W-J-8049

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



System tested with a pressure differential of 2.5 Pa between the exposed and the unexposed surfaces with the higher pressure on the exposed side.

1. Wall Assembly — Min 7-5/8 in. (194 mm) thick wall assembly constructed of any UL Classified Concrete Blocks*. Max area of opening is 480 sq in. (3097 cm2) with max dimension of 24 in. (610 mm).
   See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.
2. Through Penetrants — A max of two pipes, conduit or tubing to be installed within the opening. The space between pipes, conduits or tubing shall be 4 in. (102 mm) min and between the periphery of the opening and the pipes or conduits shall be min 1-1/2 in. (38 mm). Pipe, conduit or tubing to be rigidly supported on both sides of the wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:
   A. Steel Pipe — Nom 12 in. (305 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Conduit — Nom 4 in. (102 mm) diam (or smaller) steel electric metallic tubing or 6 in. diam steel conduit.
   C. Copper Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.
   D. Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.

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3. Pipe Covering* — (Optional) — Nom 1-1/2 in. (38 mm) thick hollow cylindrical heavy density (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. A min annular space of 1-1/2 in. (38 mm) is required between the periphery of the opening and the penetrant.
   See Pipe 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 of less and a Smoke Developed Index of 50 or less may be used.
4. Firestop System — The firestop system shall consist of the following:
   A. Fill, Void or Cavity Material* — Fire blocks installed with long dimension passed through the opening from surface to surface. Blocks to be firmly packed and completely fill the entire opening.
      HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CFS-BL Firestop Block
   B. Fill, Void or Cavity Material* — Sealant — (Not Shown) - Fill material to be forced into between the penetrants and the Fire Blocks and in any voids between blocks and the periphery of the opening to the max extent possible on both surfaces of wall.
      HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE Sealant or FS-ONE MAX Intumescent Sealant
   C. Wire Mesh — When the annular space exceeds 12 in. (305 mm) to the periphery or between penetrants, a nom 2 sq. in. (12.9 cm2) wire fencing shall be used to keep the blocks in place. The wire fencing is fabricated from min No. 16 SWG (0.060 in.) galv steel wire. The wire is cut to fit within max 2 in. (51 mm) of the penetrating item with a min 3 in. (76 mm) lap beyond the periphery of the opening. Wire fencing secured to both surfaces of the wall assembly by means of 1/4 in. (6 mm) diam by 1 in. (25 mm) long concrete anchors and 1/4 in. (6 mm) by 1-1/2 in. (38 mm) diam fender washers spaced max 8 in. (203 mm) OC. When FH Rating is 0 Hr, wire mesh is not required.

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