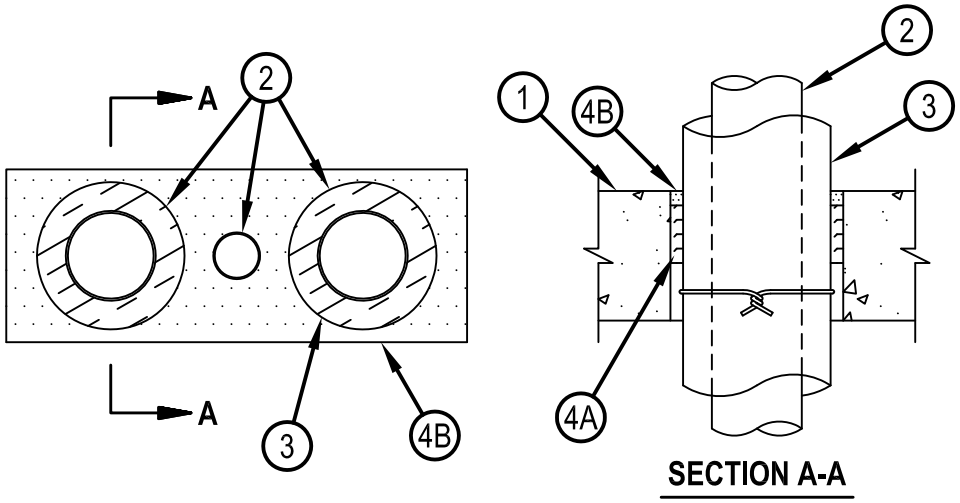
System No. C-AJ-8038

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

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 3 Hr	F Rating — 3 Hr
T Ratings — 0 and 1 Hr (See Items 2 and 3)	FT Ratings — 0 and 1 Hr (See Items 2 and 3)
	FH Rating — 3 Hr
	FTH Ratings — 0 and 1 Hr (See Items 2 and 3)



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 area of opening is 96 sq in. (619 cm2) with max dimension of 16 in. (406 mm).

See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.

2. Copper Tubing — Nom 3 in. (76 mm) diam (or smaller) Type M (or heavier) copper tube. Tubing to be installed with a min clearance of 1 in. (25 mm) and a max clearance of 2-1/4 in. (57 mm) from the sides of the through opening (except as noted in Item 3). When uninsulated copper tube is used, T, FT and FTH rating is 0 hr. Copper tubes larger than nom 1-1/2 in. (38 mm) diam are required to be provided with a pipe covering (Item 3). Copper tubing to be rigidly supported on both sides of floor or wall assembly.

3. Pipe Covering Materials* — Nom 1 in. (25 mm) thick unfaced mineral fiber pipe insulation having a nom density of 10.0 pcf (or heavier) and sized to the outside diam of pipe or tube. Pipe covering material required on copper tubes larger than nom 1-1/2 in. (38 mm) diam, optional on max 1-1/2 in. (38 mm) diam copper tubes. When pipe covering material is used, a min clearance of 1/2 in. (13 mm) and a max clearance of 2-1/4 in. (57 mm) shall be maintained between pipe covering material and sides of the through opening. A min clearance of 1 in. (25 mm) and a max clearance of 2-1/4 in. (57 mm) shall be maintained between adjacent insulated and/or uninsulated copper tubes. Pipe insulation secured with min 18 AWG steel wire spaced max 6 in. (152 mm) OC and 3 in. (76 mm) each side of butt seams. When pipe covering material is used on all copper tubes in the through opening, T, FT and FTH rating is 1 hr.

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

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

A. Packing Material — Min 2 in. (51 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 top surface of floor or from both surfaces of wall as required to accommodate the required thickness of fill material.

B. Fill, Void or Cavity Material* — Sealant — Min 1/2 in. (13 mm) thickness of fill material applied within the annulus, flush with top surface of floor or with 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.