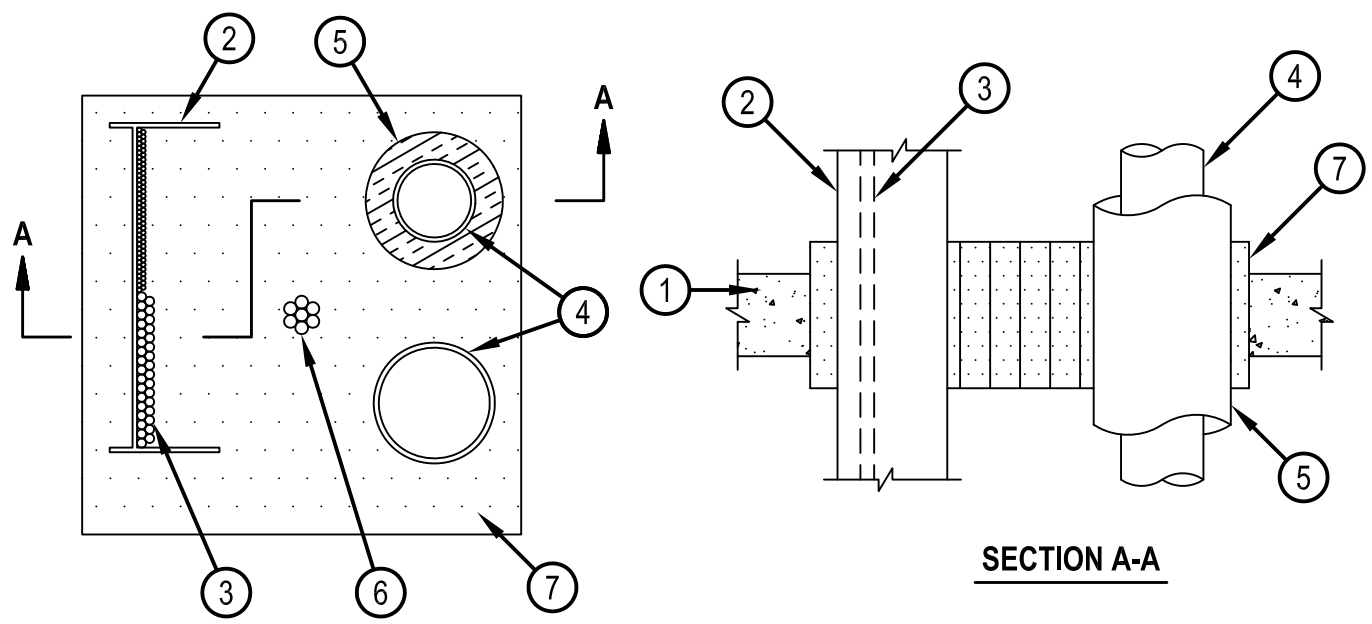


System No. C-AJ-8056



ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 3 Hr	F Rating — 3 Hr
T Rating — 0 Hr	FT Rating — 0 Hr
L Rating At Ambient — 5 CFM/sq ft	FH Rating — 3 Hr
L Rating At 400 F — 2 CFM/sq ft	FTH Rating — 0 Hr
	L Rating At Ambient — 5 CFM/sq ft
	L Rating At 400 F — 2 CFM/sq ft



1. Floor or Wall Assembly — 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 1296 in. sq (8361 cm²) with max dimension of 36 in. (914 mm). See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.
2. Cable Tray* — Max 18 in. (457 mm) wide by max 6 in. (152 mm) deep open-ladder or solid-back cable tray with channel-shaped side rails formed of 0.060 in. (1.52 mm) thick aluminum or steel and with 1-1/2 in. (38 mm) wide by 1 in. (25 mm) channel shape rungs spaced 9 in. (229 mm) OC or a 0.029 in. (0.74 mm) thick steel solid back, respectively. One cable tray to be installed in the opening. The max annular space between the cable tray and adjacent penetrants is 9 in. (229 mm) and between the cable tray and periphery of the opening shall be min 1-1/2 in. (38 mm) to max 4-1/2 in. (114 mm). Cable tray to be rigidly supported on both sides of floor or wall assembly.
3. Cables — Aggregate cross-sectional area of cables in cable tray to be max 30 percent of the cross-sectional area of the cable tray based on a max 3 in. (76 mm) cable loading depth within the cable tray. Any combination of the following types and sizes of copper conductor or fiber optic cables may be used:
 - A. 7/C No. 12 AWG with polyvinyl chloride (PVC) insulation and PVC jacket.
 - B. 300 pair - No. 24 AWG cable with PVC insulation and jacket.
 - C. 1/C, 350 kcmil with cross-linked polyethylene (XLPE) insulation and jacket.
 - D. 1/C, 500 kcmil with thermo plastic insulation and polyvinyl chloride (PVC) jacket.
 - E. Twenty four fiber optic cable with PVC sub unit and jacket



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4. Through-Penetrants — One or more pipe, conduit or tube to be installed within the opening. The total number of through-penetrants is dependent on the size of the opening and types and sizes of the penetrants. Any combination of the penetrants described below may be used provided that the following parameters relative to the annular spaces and the spacings between the pipes are maintained. The space between pipes, conduits or tubing and between the periphery of the opening and the pipes or conduits shall be min 1 in. (25 mm) to max 4-1/2 in. (114 mm). Pipe, conduit or tube 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. Nom 6 in. (152 mm) diam (or smaller) rigid galv steel conduit.
 - B. Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing.
 - C. Nom 4 in. (102 mm) diam (or smaller) Regular (or heavier) copper pipe.
 - D. Nom 4 in. (102 mm) diam (or smaller) Type L (or heavier) copper tube.
 - E. Nom 6 in. (152 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
 - F. Nom 6 in. (152 mm) diam (or smaller) cast or ductile iron pipe.
5. Pipe Covering — Nom 1-1/2 in. (38 mm) thick hollow cylindrical heavy density (min 3.5 pcf) 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.
- See Pipe and Equipment Covering and 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 may be used.
6. Cables — Max 2 in. (51 mm) diam tight bundle of cables centered in opening and rigidly supported on both surfaces of floor and wall. Any combination of the following types and sizes of cables may be used:
- A. 7/C No. 12 AWG with polyvinyl chloride (PVC) insulation and PVC jacket.
 - B. 25 pair - No. 24 AWG cable with PVC insulation and jacket.
 - C. 2/C No. 10 AWG with PVC insulation and jacket.
 - D. 3/C No. 8 AWG aluminum clad cable with cross-linked polyethylene (XLPE) insulation and PVC jacket.
 - E. Type RC - 62 A/U coaxial cable with air core and PVC jacket.
 - F. 24 fiber optic cable with PVC sub unit and outer jacket.
7. 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 and centered within the thickness of the floor or wall. Blocks to be firmly packed and completely fill the entire area and thickness of opening. Either one or a combination of the block types specified below may be used.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS 657 -Fire Block or CFS-BL Firestop Block
 - B. Fill, Void or Cavity Material* — (Not Shown) Fill material to be forced into interstices of cables and between cables and cable trays to max extent possible on both surfaces of the penetration.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-One Sealant, FS-ONE MAX Intumescent Sealant, or CP618 Firestop Putty Stick (L Rating applies only when FS-One Sealant is used.)
 - C. Wire Mesh (Not Shown) — When the annular space exceeds 4-1/2 in. (114 mm) to the periphery, a nom 2 in. sq (51 mm sq.) wire fencing shall be used to keep the fire blocks in place. The wire fencing is fabricated from min No. 16 SWG (0.060 in.) (1.52 mm) galv steel wire. The wire is cut to fit the contour of the penetrating item with a min 3 in. (76 mm) lap beyond the periphery of the opening. Wire fencing secured to top surface of floor and both surfaces of 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.

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

