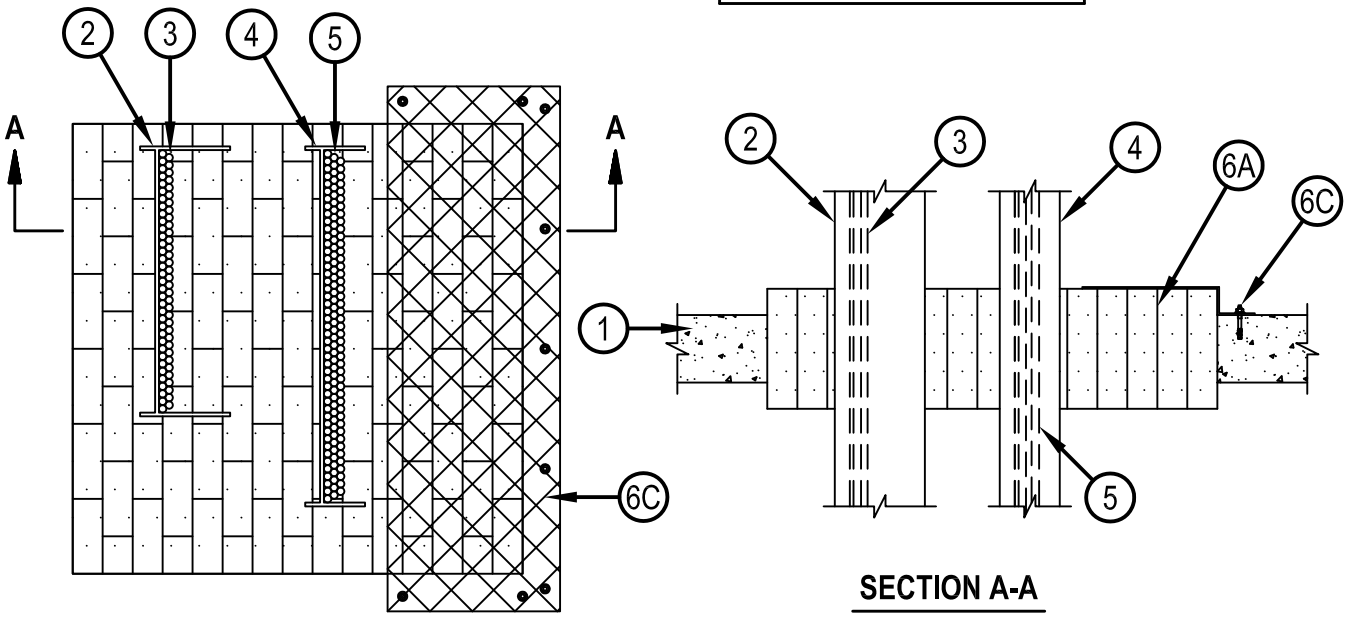
Classified by
Underwriters Laboratories, Inc.
to UL 1479 and CAN/ULC-S115

System No. C-AJ-4034

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



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 900 in. sq (5806 cm2) with max dimension of 30 in. (762 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. (31 mm) deep open-ladder cable tray with channel-shaped side rails formed of 0.065 in. (1.65 mm) thick aluminum or 0.060 in. (1.52 mm) thick galv steel and with 1-1/2 in. (38 mm) wide by 1 in. (25 mm) channel shape rungs spaced 9 in. (229 mm) OC. The annular space between the cable trays shall be 5 in. (127 mm). The annular space between the cable tray and the periphery of the opening shall be min 1-1/2 in. (38 mm) to max 10-1/2 in. (267 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 20 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.

4. Cable Tray* — Max 24 in. (610 mm) wide by max 4 in. (102 mm) deep open-ladder or solid-back cable tray with channel-shaped side rails formed of 0.10 in. (2.54 mm) thick aluminum or 0.060 in.(1.52 mm) thick galv 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. The annular space between the cable trays shall be 5 in. (127 mm). The annular space between the cable tray and the periphery of the opening shall be min 1-1/2 in. (38 mm) to max 13-1/2 in. (343 mm). Cable tray to be rigidly supported on both sides of floor or wall assembly.

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5. Cables — Aggregate cross-sectional area of cables in cable tray to be max 40 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.
6. Firestop System — The firestop system shall consist of the following:
   A. Fill, Void or Cavity Material* — Fire blocks installed with long dimension passed through and centered within the opening. Blocks to be firmly packed and completely fill the entire area and thickness of opening. Either one or a combination of the blocks 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* — 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 or FS-ONE MAX Intumescent Sealant.
   C. Wire Mesh — When the annular space exceeds 5 in. (127 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.) (1.53 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.