

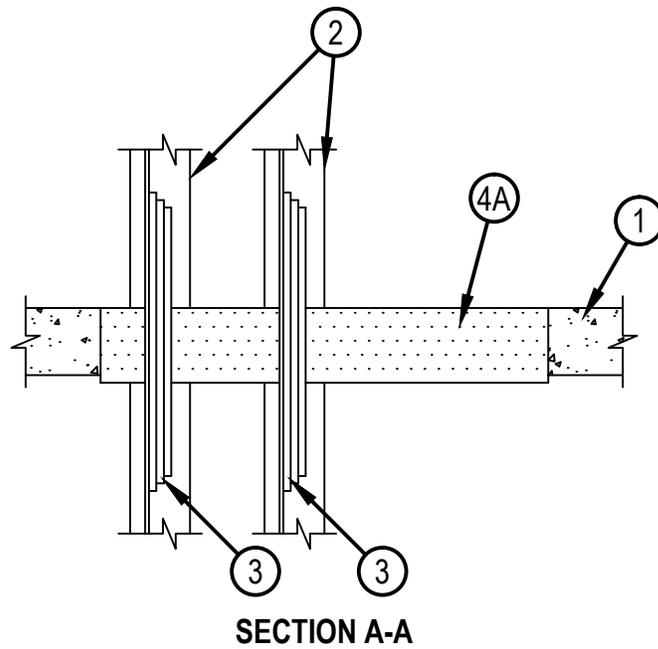
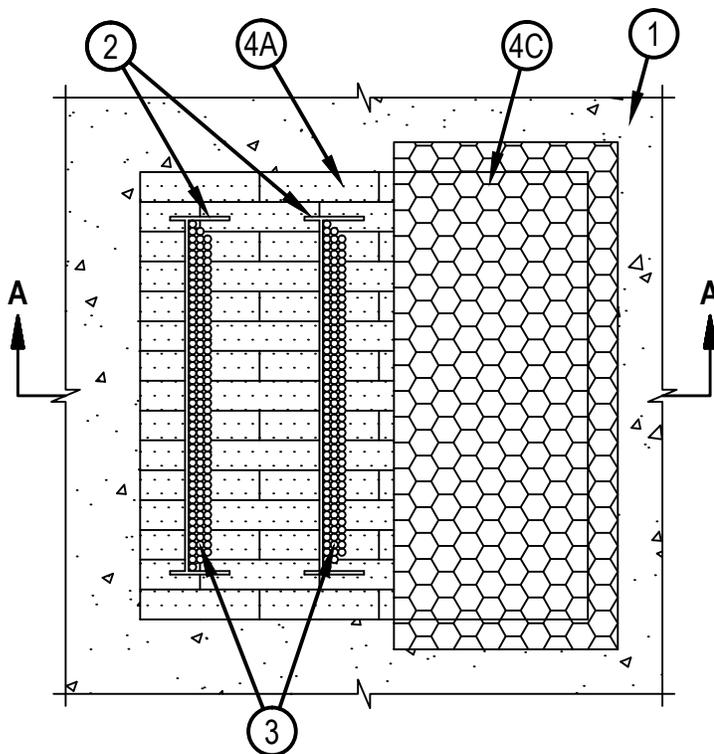


Classified by  
Underwriters Laboratories, Inc.  
to UL 1479 and CAN/ULC-S115

# System No. C-AJ-4093

CAJ 4093

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 — Less Than 5 CFM/sq ft	FH Rating — 3 Hr
L Rating At 400 F — Less Than 2 CFM/sq ft	FTH Rating — 0 Hr
	L Rating At Ambient — Less Than 5 CFM/sq ft
	L Rating At 400 F — Less Than 2 CFM/sq ft



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/m<sup>3</sup>) concrete. Wall may also be constructed of any UL Classified solid or filled Concrete Blocks\*. Max area of opening is 900 in<sup>2</sup> (5806 cm<sup>2</sup>) with max dimension of 30 in. (762 mm).

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

2. Cable Tray\* — Max 24 in. (610 mm) wide by max 4 in. (102 mm) deep open-ladder cable tray with channel-shaped side rails formed of 0.065 in. (1.651 mm) to 0.10 in. (2.54 mm) thick aluminum or 0.060 in. (1.65 mm) thick galv steel and with 1-1/2 in. (38 mm) wide by 1 in. (25 mm) channel shape rungs spaced 9 in. (228 mm) OC or a 0.029 in. (0.74 mm) thick steel solid back, respectively. The annular space between the cable trays shall be min 5 in. (127 mm) to max 12 in. (305 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.



Hilti Firestop Systems

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3. 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.
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 and centered within the opening. 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\* — (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 CP 618 Putty.
  - C. Wire Mesh — When the annular space exceeds 12 in. (305 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. or 1.5 mm) galv steel wire. The wire is cut to fit within max 2 in. (51 mm) of the penetrating items 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. (32 mm) by 1-1/2 in. (38 mm) diam fender washers spaced max 8 in. (203 mm) OC.
  - C1. Wire Mesh — — (As an alternate to Item 4C) When the annular space exceeds 12 in. (305 mm) to the periphery, a nom 1 in. (25 mm) hexagonal wire fencing shall be used to keep the fire blocks in place. The wire fencing is fabricated from min No. 20 SWG (0.036 in. or 0.9 mm) or heavier galv steel wire. The wire is cut to fit within max 2 in. (51 mm) of the penetrating items 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. (32 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.

