

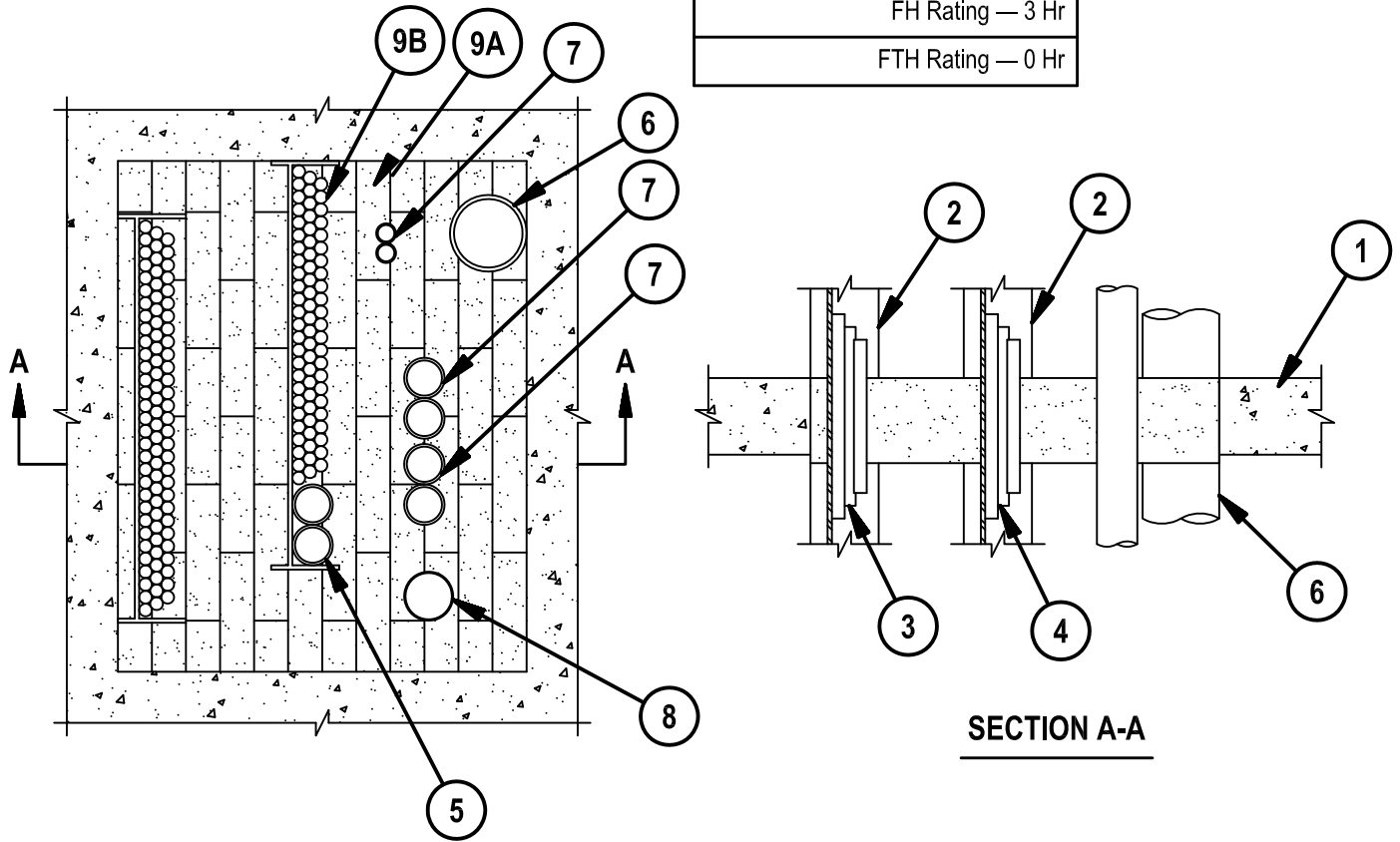


Classified by  
Underwriters Laboratories, Inc.  
to UL 1479 and CAN/ULC-S115

## System No. C-AJ-8210

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 3 Hr	F Rating — 3 Hr
T Rating — 0 Hr	FT Rating — 0 Hr
	FH Rating — 3 Hr
	FTH Rating — 0 Hr

CAJ 8210



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. 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 floor or concrete wall. Wall may also be constructed of any UL solid or filled Classified Concrete Blocks\*. Max area of 720 sq in. (0.46 m<sup>2</sup>) 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 of two max 24 in (610 mm) wide by 4 in. (102 mm) deep open-ladder cable tray with channel-shaped side rails formed of 0.10 in. (2.5 mm) thick aluminum or 0.060 in. (.5 mm) thick steel and with 1 in. (25 mm) wide by 1 in. (25 mm) deep tubular channel-shaped rungs spaced 9 in. (229 mm) OC. The annular space between the periphery of the opening shall be min 0 in. (point contact) to max 3 in. (76 mm). Annular space between cable trays shall be 5 in. (127 mm) max. Cable tray to be rigidly supported on both sides of floor assembly.
3. Cables — Aggregate cross-sectional area of cables in cable tray to be max 45 percent of the cross-sectional area of the cable tray. Any combination of the following types and sizes of copper conductor cables may be used:
  - A. 1/C, 750 kcmil (or smaller) power cable with polyvinyl chloride (PVC) insulation and jacket.
  - B. 300 pair - No. 24 AWG telephone cable with PVC insulation and jacket.
  - C. 24 fiber optic cable with PVC outer and subunit jacket.
  - D. 3/C No. 12 AWG copper conductor steel clad cable with PVC insulation.



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4. Cables — Aggregate cross-sectional area of cables in cable tray to be max 30 percent of the cross-sectional area of the cable tray. Any combination of the following types and sizes of copper conductor cables may be used:
  - A. 1/C, 750 kcmil (or smaller) power cable with polyvinyl chloride (PVC) insulation and jacket.
  - B. 100 pair - No. 24 AWG telephone cable with PVC insulation and jacket.
  - C. 7/C No. 12 AWG cable with PVC insulation and jacket.
  - D. 3/C (with ground) No. 12 AWG copper conductor non-metallic sheathed cable with PVC insulation and jacket.
5. Optical Fiber/Communication Cable Raceways+ — Nom 2 in. (51 mm) diam (or smaller) optical fiber raceway, formed from PVC. Raceway to be installed in accordance with the National Electrical Code (NFPA No. 70). Max two raceways placed into cable tray.  
See Optical Fiber/Communication Cable Raceways (QAZM) category in the Electrical Construction Materials Directory for names of manufacturers.
6. Metallic Penetrants - One metallic pipe or tubing to be installed within the firestop system — The min annular space between the copper tube or pipe and the periphery of the opening shall be 0 in. (point contact). The min space between adjacent penetrants shall be 2 in. (51 mm). Tube or pipe to be rigidly supported on both sides of floor assembly. The following types and sizes of metallic pipe or tubing may be used:
  - A. Steel Pipe — Nom 8 in. (203 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
  - B. Iron Pipe — Nom 8 in. (203 mm) diam (or smaller) cast or ductile iron pipe.
  - C. Conduit — Nom 6 in. (152 mm) diam (or smaller) rigid steel conduit.
  - D. Conduit — Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic conduit.
  - E. Copper Tubing — Nom 4 in. (102 mm) diam (or smaller) Type L (or heavier) copper tubing.
  - F. Copper Pipe — Nom 4 in. (102 mm) diam (or smaller) Regular (or heavier) copper pipe.
7. Conduit — Max 2 in. (51 mm) diam (or smaller) steel electrical metallic tubing (EMT) or steel conduit. The annular space between the EMT and the periphery of the opening shall be min 2 in. (51 mm). The min space between adjacent penetrants shall be 1-1/2 in. (38 mm) except that a max of two EMT or conduit may be installed at point contact with one another. EMT or conduit to be rigidly supported on both sides of floor assembly.
8. Cable — 1800 pair - No. 24 AWG 01 ARMM telephone cable with PVC insulation and jacket. The annular space between the cable and the periphery of the opening shall be min 3-1/2 in. (89 mm). The min space between adjacent penetrants shall be 1-1/2 in. (38 mm). Cable to be rigidly supported on both sides of floor assembly.
9. Firestop System — The firestop system shall consist of the following:
  - A. Fill, Void or Cavity Material\* - Fire Blocks — Blocks installed with 5 in. (127 mm) dimension projecting through opening flush with top surface of floor or centered in wall. Blocks to be firmly packed to fill the opening area.  
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CFS-BL Firestop Block
  - B. Fill, Void or Cavity Material\* — Fill material to be forced into interstices of cables, between cables and cable tray and in voids between blocks and between blocks and the periphery of the opening to the max extent possible on both surfaces of wall or floor.  
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE Sealant, FS-ONE MAX Intumescent Sealant, CP618 Firestop Putty Stick or CP 620 Fire Foam
  - C. Wire Mesh — (Not Shown) When the annular space exceeds 12 in. (305 mm) to the periphery, a nom 2 by 2 in. (51 by 51 mm) wire fencing shall be used to keep the blocks in place. The wire fencing shall be 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 item with a min 3 in. (76 mm) overlap beyond the periphery of the opening. Wire fencing secured to top surface of floor and both surfaces of the wall assembly by means of 1/4 in. (6 mm) diam by 1 in. (25 mm) long steel 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.
  - C1. Wire Mesh — (Not Shown, Alternate to Item 9C) - 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 blocks in place. The wire fencing shall be fabricated from 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 item with a min 3 in. (76 mm) overlap beyond the periphery of the opening. Wire fencing secured to top surface of floor and both surfaces of the wall assembly by means of 1/4 in. (6 mm) diam by 1 in. (25 mm) long steel 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.



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