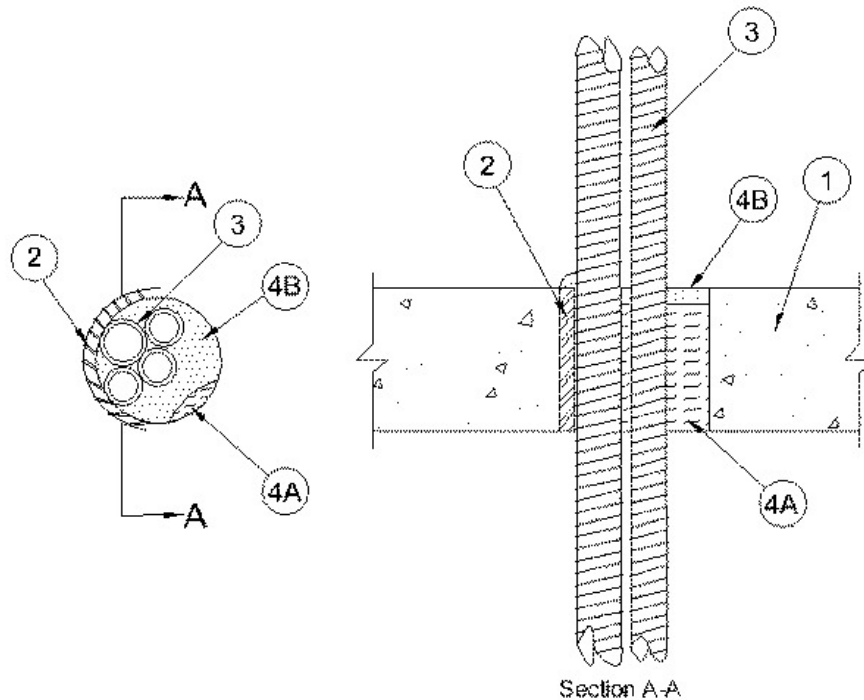


ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 2 and 3 Hr (See Item 3)	F Rating — 2 and 3 Hr (See Item 3)
T Rating — 0 Hr	FT Rating — 0 Hr
	FH Rating — 2 and 3 Hr (See Item 3)
	FTH Rating — 0 Hr
L Rating at Ambient - Less than 1 CFM/sq ft	L Rating at Ambient - Less than 1 CFM/sq ft
L Rating at 400° F - Less than 1 CFM/sq ft	L Rating at 400° F - Less than 1 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 floor or min 5 in. (127 mm) thick reinforced lightweight or normal weight wall. Wall may also be constructed of any UL Classified **Concrete Blocks**\*. Floor may also be constructed of any min 6 in. (152 mm) thick UL Classified hollow-core **Precast Concrete Units**\*. The max diam of the opening is dependent upon the type of through penetrant (Item 3) used. If flexible steel conduit is installed within the opening, the max diam of the opening is 6 in. (152 mm) If flexible aluminum conduit is installed within the opening, the max diam of the opening is 4 in. (102 mm).

See **Concrete Block** (CAZT) and Precast Concrete Units (CFTV) categories in the Fire Resistance Directory for names of manufacturers.

**2. Steel Sleeve** — (Optional) Nom 6 in. (152 mm) diam (or smaller) Schedule 10 (or heavier) steel sleeve cast or grouted into floor or wall assembly, flush with floor or wall surfaces. The max diam of the steel sleeve is dependent upon the type of through penetrant used. If flexible steel conduit is used, the max diam of the steel sleeve is 6 in. (152 mm). If flexible aluminum conduit is used, the max diam of the steel sleeve is 4 in. (102 mm).

**3. Through Penetrants** — One or more nom 1-1/2 in. (38 mm) diam (or smaller) flexible steel conduit or one or more nom 1 in. (25 mm) diameter (or smaller) flexible aluminum conduit bundled together and installed within the opening. Max diam of through penetrant bundle shall not exceed 4 in. (102 mm) and 2-1/2 in. (64 mm) for flexible steel conduit and flexible aluminum conduit, respectively. The space between the through penetrants shall be a min 0 in. (0 mm, point contact) to a max 1/4 in. (6 mm). The annular space between the through penetrants and periphery of opening shall be min 0 in. (0 mm, point contact) to max 2 in. (51 mm) for flexible steel conduit. The annular space between the through penetrants and periphery of opening shall be min 0 in. (0 mm, point contact) to max 1-1/2 in. (38 mm) for flexible aluminum conduit. Through penetrants to be rigidly supported on both sides of floor or wall assembly.

See **Flexible Metal Conduit** (DXUZ) category in the Electrical Construction Materials Directory for names of manufacturers.

The F Rating of the firestop system is dependent upon the type of through penetrant used. If flexible aluminum conduit is used, the F Rating of the firestop system is 2 hr. If flexible steel conduit is used, the F Rating of the firestop system is 3 hr.

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

A. **Packing Material** — Min 4 in. (102 mm) thickness of min 4 pcf (64 kg/m<sup>3</sup>) mineral wool batt insulation firmly packed into opening as a permanent form. Additional packing material shall be forced into interstices of flexible aluminum conduit to max extent possible. Packing material to be recessed from top surface of floor or from both surfaces of wall and hollow-core precast concrete units 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. At the point contact location between penetrating items and concrete, a min 3/8 in. (10 mm) diam bead of fill material shall be applied at the concrete/penetrating item interface on the top surface of floor and on both surfaces of wall or hollow-core precast concrete units. Additional sealant shall be forced into interstices of through penetrants to max extent possible.

**RECTORSEAL** — FS900+ Sealant, FS 1900 Sealant, [Metacaulk MC 150+](#) or Biostop BF [150+](#)

\*,+ 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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