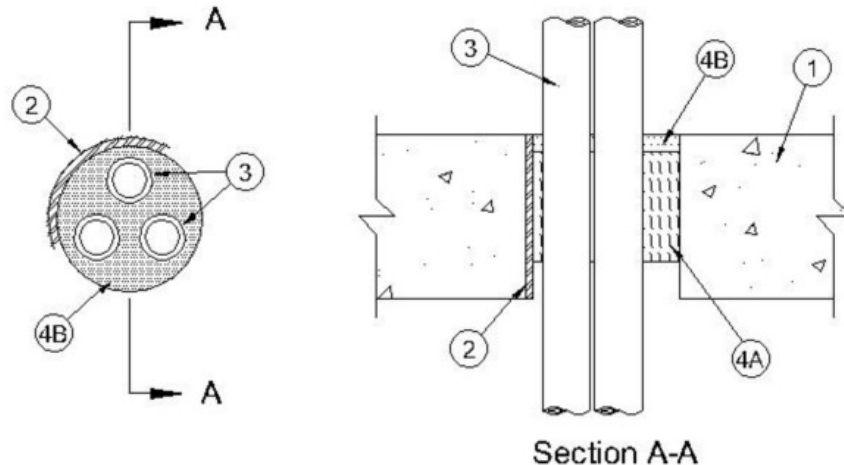


F Rating — 1-1/2 Hr
T Rating — 1 Hr
L Rating At Ambient — Less Than 1 CFM/sq ft
L Rating At 400 F — Less Than 1 CFM/sq ft



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/m³) concrete floor. Floor may also be constructed of any min 6 in. (152 mm) thick hollow-core **Precast Concrete Units***. Wall may also be constructed of any UL Classified **Concrete Blocks***. Max diam of opening is 6 in. (152 mm).

See **Concrete Blocks** (CAZT) or **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 pipe cast or grouted into floor or wall assembly, flush with floor or wall surfaces.

3. **Through Penetrant — Cross Linked Polyethylene (PEX) Tubing** — Nom 1 in. (25 mm) diam (or smaller) SDR9 PEX tubing for use in closed (process or supply) piping systems. One or more tubes to be installed eccentrically or concentrically within the firestop system. The annular space between the tubes and the periphery of the opening shall be min 1/8 in. (3 mm) to max 2 in. (51 mm). The space between the tubes shall be min 1/8 in. (3 mm). Tubing to be rigidly supported on both sides of the floor or wall assembly.

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/m³) mineral wool batt insulation compressed and tightly packed into opening. Packing material recessed from top surface of solid concrete floor to accommodate fill material. Packing material recessed from both surfaces of hollow core precast concrete unit floors and from both surfaces of walls.

B. **Fill, Void or Cavity Material* — Sealant** — Min 1/2 in. (13 mm) thickness of fill material installed within annulus, flush with top surface of solid concrete floor or with both surfaces of walls or hollow-core precast concrete unit floors. Fill material shall be forced into interstices between penetrants to max extent possible. When steel sleeve (Item 2) is used, fill material to cover edge of steel sleeve and to lap min 1/2 in. (13 mm) onto top surface of floor or both surfaces of wall.

RECTORSEAL — FlameSafe FS1900 Series Sealant, [Metacaulk 1000](#), [Metacaulk 350i](#), Biostop 350i or Biostop 500+

*,+ 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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