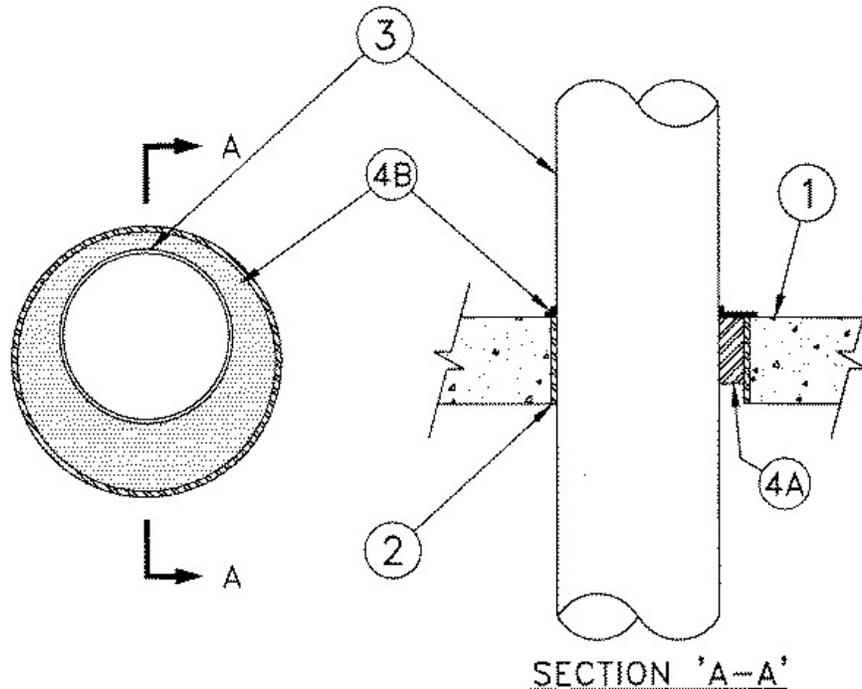


F Rating — 3 Hr  
 T Rating — 0 Hr  
 L Rating At Ambient — Less Than 1 CFM/sq ft (See Item 3)  
 L Rating At 400 F — Less Than 1 CFM/sq ft (See Item 3)



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 **Concrete Blocks\***. Max diam of opening is 15-1/2 in. (394 mm).

See **Concrete Block** (CAZT) category in the Fire Resistance Directory for names of manufacturers.

2. **Metallic Sleeve** — (Optional) - Nom 16 in. (406 mm) diam (or smaller) Schedule 10 (or heavier) steel sleeve cast or grouted into floor or wall assembly, flush with floor or wall surfaces.

3. **Through Penetrants** — One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The annular space between the pipe, conduit or tubing and the periphery of the opening shall be min 0 in. (0 mm, point contact) to max 2-3/8 in. **L Ratings apply only when the min annular space between the through penetrant and the edge of the opening is equal to or greater than 1/4 in. (6 mm).** Pipe, conduit or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

A. **Steel Pipe** — Nom 12 in. (305 mm) diam (or smaller) Schedule 30 (or heavier) steel pipe.

B. **Iron Pipe** — Nom 12 in. (305 mm) diam (or smaller) cast or ductile iron pipe.

C. **Conduit** — Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing or nom 6 in. diam (or smaller) steel conduit.

D. **Copper Tubing** — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.

E. **Copper Pipe** — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.

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. Packing material to be installed flush with top surface of floor or with both surfaces of wall assembly. At the point contact location between through penetrant and concrete, packing material forced into interstices between through penetrant and concrete to maximum extent possible.

B. **Fill, Void, or Cavity Materials\* - Sealant** — Min 1/8 in. (3.2 mm) wet thickness of fill material brush or

spray applied to completely cover the mineral wool packing material and to lap a min of 1/2 in. (13 mm) onto the top surface of the floor or onto both surfaces of the wall around the periphery of the through opening. An additional min 1/8 in. (3.2 mm) wet thickness of fill material applied to lap a min of 1/2 in. (13 mm) onto the through penetrant on the top surface of the floor or on both surfaces of the wall .

**RECTORSEAL** — FlameSafe FS3000, [Metacaulk 1200, 1500](#) or Biostop 750, 800 Spray

\*,+ 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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