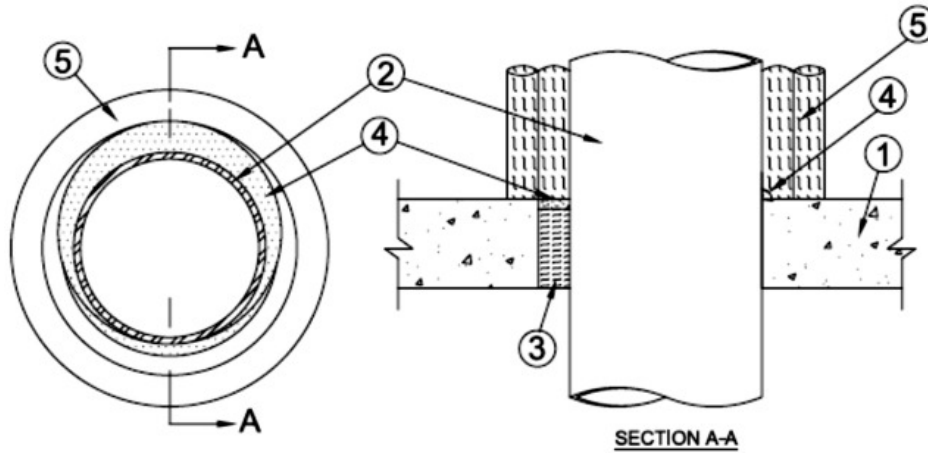


F Rating — 3 Hr  
 T Rating — 2 and 3 Hr (See Item 5)  
 L Rating at Ambient — Less than 1 CFM/ft<sup>2</sup>  
 L Rating at 400° F — Less than 1 CFM/ft<sup>2</sup>



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 12 in. (305 mm). See **Concrete Blocks** (CAZT) category for names of manufacturers.

2. **Through Penetrant** — One metallic pipe or conduit to be installed either concentrically or eccentrically within the firestop system. The annular space between the through penetrant and the periphery of opening shall be min 0 in. (point contact) to a max of 1-7/8 in. (48 mm). Through penetrant to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipe or conduit may be used:

- A. **Steel Pipe** — Nom 10 in. (254 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
- B. **Iron Pipe** — Nom 10 in. (254 mm) diam (or smaller) cast or ductile iron pipe.
- C. **Steel Conduit** — Nom 6 in. (152 mm) diam (or smaller) rigid steel conduit or nom 4 in. (102 mm) diam (or smaller) electrical metallic tubing (EMT).
- D. **Copper Tube** — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tube.
- E. **Copper Pipe** — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.

3. **Packing Material** — Min 4 in. (102 mm) thickness of min 4 pcf mineral wool firmly packed into opening as a permanent form. Packing material to be recessed min 1/2 in. (13 mm) from top of concrete in floor or from both ends of wall to accommodate the required thickness of fill material (Item 4).

4. **Fill, Void or Cavity Material\*** — **Caulk** — Fill material applied to a min depth of 1/2 in. (13 mm) flush with top surface of floor or with both surfaces of wall.. A min 1/4 in. (6 mm) bead of fill material to be applied at area of point contact.

**RECTORSEAL** — [Metacaulk 1000](#)

5. **Duct Wrap Material\*** — Two layers of nom 2 in. (51 mm) thick fiberglass duct wrap, min 1 pcf (16 kg/m<sup>3</sup>), tightly wrapped around penetrant and tightly butted to the top surface of the floor or both sides of wall to extend above floor or past both sides of wall as shown in the table below. All longitudinal seams of both layers of duct wrap are sealed with foil tape.

**When duct wrap is used, T Rating is dependent on the criteria shown in the table below.**

Max Pipe Size, in. (mm)	Pipe/Tube Type	Min insulation height, in. (mm)	Min insulation height, in. (mm)	T Rating
		Inner Layer	Outer Layer	
4 (102)	steel, iron or conduit	12 (305)	12 (305)	3
4 (102)	copper	24 (610)	12 (305)	3
6 (152)	all	24 (610)	12 (305)	2

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10 (254)	Steel or Iron	24 (610)	24 (610)	2
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See **Batts and Blankets** (BKNV) category in the Building Materials Directory for names of manufacturers. Any batts and blankets material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.

\*,+ 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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