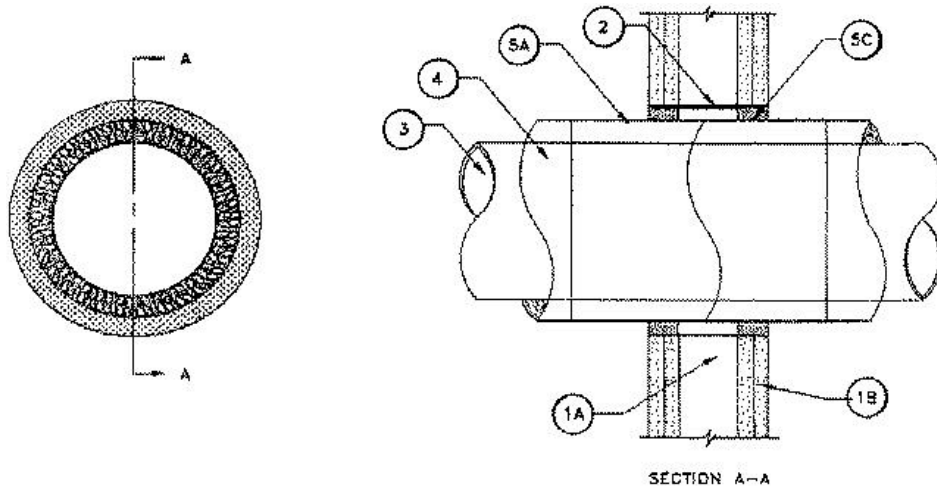


**F Ratings — 1 & 2 Hr (See Item 1)**  
**T Rating — 0 & 1-1/2 Hr (See Item 1)**



**1. Wall Assembly** — The fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

**A. Studs** — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. OC. When steel studs are used and the diam of opening exceeds the width of the stud cavity, the opening shall be framed on all sides using lengths of studs installed between the vertical studs and attached to the studs at each end. The framed opening in the wall shall be 4 to 6 in. wider and 4 to 6 in. higher than the diam of the metallic sleeve (Item 2) such that a clearance of 2 to 3 in. is present between the sleeve and the framing on all four sides.

**B. Gypsum Board\*** — Two layers of nom 5/8 in. thick gypsum board, as specified in the individual Wall and Partition Design. Max diam of opening is 14-1/2 in. for wood stud walls and 30 in. for steel stud walls.

**The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed. The T Rating is 0 hr when installed in 1 hr wall assembly or when optional metallic sleeve (Item 2) is used. The T Rating is 1-1/2 hr when installed in 2 hr wall assembly and optional sleeve is not used.**

**2. Metallic Sleeve (Optional)** — Nom 30 in. diam (or smaller) Schedule 40 (or thinner) steel pipe cast into wall assembly with joint compound and installed flush with wall surfaces.

**3. Through Penetrants** — One metallic pipe or tubing to be positioned within the firestop system. Pipe or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes or tubing may be used:

**A. Steel Pipe** — Nom 20 in. diam (or smaller) Schedule 10 (or heavier) steel pipe.

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

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

**4. Pipe Covering\*** — 1 to 3 in. thick hollow cylindrical heavy density (min 3.5 pcf) glass fiber units jacketed on the outside with an all service jacket. Longitudinal joints sealed with metal fasteners of factory-applied self-sealing lap tape. Transverse joints secured with metal fasteners or with butt tape supplied with the product. Pipe covering to terminate 6 in. from each side of the assembly.

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

**A. Pipe Covering Materials\*** — Nom 1 to 3 in. thick unfaced mineral fiber pipe insulation sized to the outside diam of pipe or tube and extending 6 in. beyond each surface of the wall surface. Pipe insulation secured with min 18 AWG steel wire 3 in. beyond each surface of the wall assembly. When steel sleeve is not used, the annular space shall be min 1/4 in. to max 3 in., or when sleeve is used, min 1 in. to max 2-1/4 in.

**INDUSTRIAL INSULATION GROUP L L C** — High Temperature Pipe Insulation 1200, High Temperature Pipe Insulation BWT or High Temperature Pipe Insulation Thermaloc.

**B. Sheathing Material\*** — All service jacket material shall be wrapped around the outer circumference of the pipe covering material (Item 4A) with kraft side exposed. Longitudinal joints sealed with metal fasteners or self-sealing lap tape. See **Sheathing Material (BVDV)** category in the Building Materials Directory for names of manufacturers. Any sheathing

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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.

**C. Fill, Void or Cavity Material\* — Sealant** — Min 5/8 in. or 1-1/4 in. thickness of fill material applied within the annulus flush with both surfaces of wall, for 1 or 2 hr walls, respectively.

**RECTORSEAL** — [Metacaulk 950](#)

\*,+ 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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