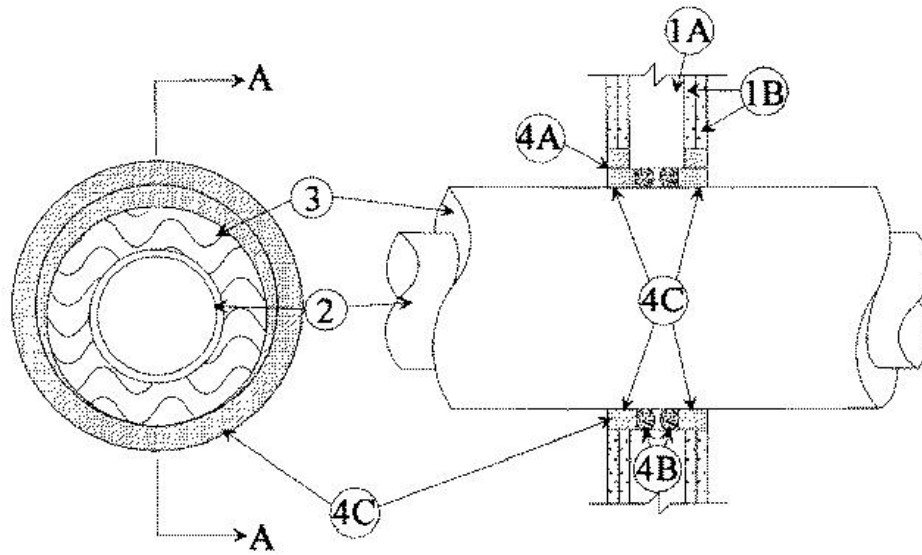
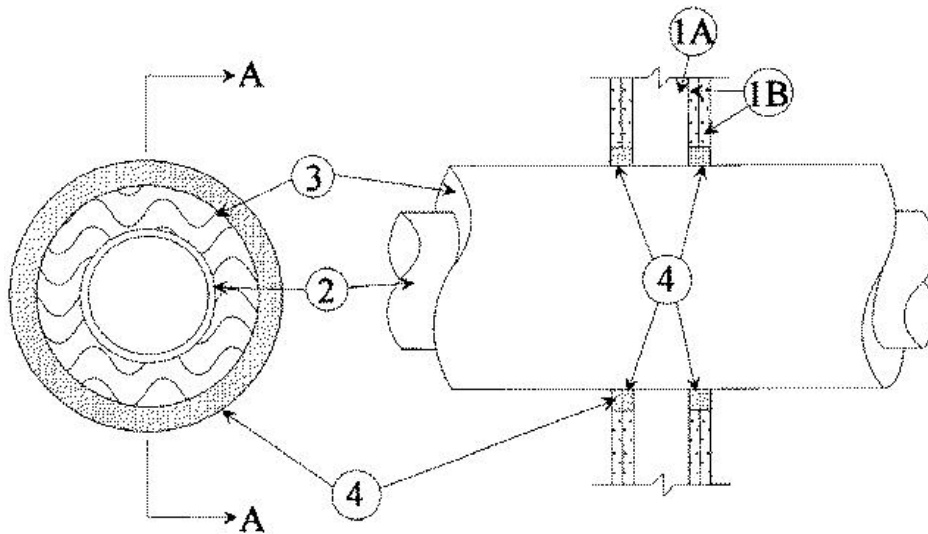


F Rating — 2 Hr
T Rating — 1 Hr (See Item 2)



CONFIGURATION A



CONFIGURATION B

1. Wall Assembly — The fire-rated gypsum wallboard/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.

B. **Gypsum Board*** — Two layers of nom 5/8 in. thick gypsum wallboard, as specified in the individual Wall and Partition Design. Max diam of opening is 21-3/4 in.

2. Through-Penetrant — One metallic pipe or tubing installed either concentrically or eccentrically within the firestop system. Pipe or tubing to be rigidly supported on both sides of wall assembly. The following types of pipe or tubing may be used:

A. **Steel Pipe** — Nom 16 in. diam (or smaller) Schedule 30 (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.

The sizes and types of pipes and the type and thickness of pipe coverings (Item 3) used are as shown in the following table:

Nom Pipe Diam	Pipe Type	Insulation Type	Nom Insulation Thkns In.
1/2 to 6	copper or steel	fiberglass or mineral wool	1 & 1-1/2
6-1/2 to 16	steel	mineral wool	1 & 1-1/2

Firestop Configuration A

3. **Pipe Covering*** — Nom 1 or 1-1/2 in. thick hollow cylindrical heavy density (min 7.0 pcf) mineral fiber units jacketed on the outside with an all service jacket. Longitudinal joints sealed with metal fasteners or factory-applied self-sealing lap tape. Transverse joints secured with metal fasteners or with butt tape supplied with the product. The annular space shall be min 1/2 in. to max 1-3/8 in.

See **Pipe and Equipment Covering — Materials** (BRGU) category in the Building Materials Directory for names of manufacturers. Any pipe covering 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 maybe used.

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

A. **Metallic Sleeve** — Cylindrical sleeve fabricated from min 0.018 in. thick (No. 28 gauge) galv sheet steel and having a min 1 in. lap along the longitudinal seam. Length of steel sleeve to be equal to thickness of wall. The inside diam of sleeve shall be 1 to 1-1/2 in. larger than the outside diam of pipe covering. Sleeve is secured with two min No. 18 AWG steel tie wires located 1 to 2 in. from each end of sleeve. A min 1/2 in. annular space is required between the sleeve and the pipe covering. The annular space between the steel sleeve and the periphery of the opening shall be a min 0 in. (point contact) to a max 1-3/8 in.

B. **Packing Material** — Polyethylene backer rod friction-fitted into annular space between the penetrating item and the sleeve on both sides of the wall and recessed a 1-1/4 in. from each end of the sleeve.

C. **Fill, Void or Cavity Material* — Caulk** — Min 1-1/4 in. thickness of fill material applied within the annular space between the steel sleeve and the periphery of the opening, flush with both surfaces of wall. Min 1-1/4 in. thickness of fill material applied within the annular space between the steel sleeve and the pipe covering, flush with both surfaces of wall.

RECTORSEAL — [Metacaulk 835+](#)

Firestop Configuration B

3. **Pipe Covering*** — Nom 1 or 1-1/2 in. thick hollow cylindrical heavy density (min 7.0 pcf) mineral fiber units jacketed on the outside with an all service jacket. Longitudinal joints sealed with metal fasteners or factory-applied self-sealing lap tape. Transverse joints secured with metal fasteners or with butt tape supplied with the product. The annular space shall be min 1/2 in. to max 1-3/8 in.

See **Pipe and Equipment Covering — Materials** (BRGU) category in the Building Materials Directory for names of manufacturers. Any pipe covering 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 maybe used.

4. **Fill, Void or Cavity Material* — Caulk** — Min 1-1/4 in. thickness of fill material applied within the annular space, flush with both surfaces of wall.

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*,+ 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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