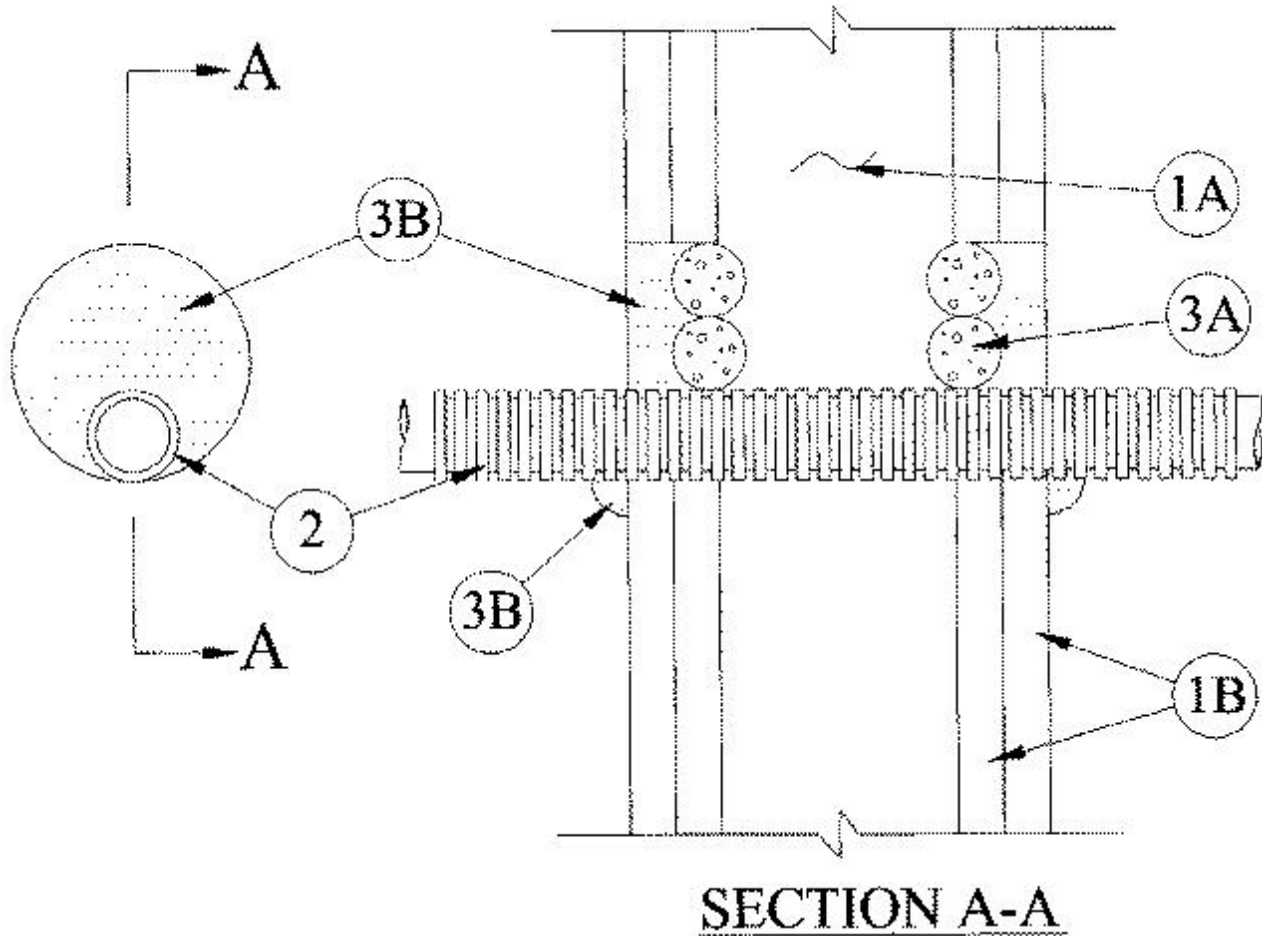


System No. W-L-2191

December 03, 1999

F Ratings — 1 and 2 Hr (See Item 1)

T Ratings — 1, 1-3/4 and 2 Hr (See Item 1)



1. Wall Assembly — The 1 or 2 hr 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 shall consist of either wood or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 3-1/2 in. wide and spaced max 24 in. OC.

B. Gypsum Board* — Min 5/8 in. thick, 4 ft wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers and orientation shall be as specified in the individual U300 or U400 Wall and Partition Design. Max diam of opening is 4 in.

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 hourly T Rating of the firestop system is 1 hour when installed in 1 hr rated wall assemblies. When installed in 2 hr rated wall assemblies, the T Rating is 1-3/4 hr when the diam of the opening is greater than 2-1/16 in. larger than the outside diam of the penetrant and 2 hr when the diam of the opening is less than or equal to 2-1/16 in. larger than the outside diam of the penetrant.

2. Nonmetallic Penetrant — One nonmetallic penetrant to be installed either concentrically or eccentrically within the firestop system. The annular space between nonmetallic penetrant and periphery of opening shall be min 0 in. (point contact) to max 2-1/16 in. Through-penetrant shall be rigidly supported on both sides of wall assembly. The following types

and sizes of nonmetallic penetrants may be used:

A. **Electrical Nonmetallic Tubing (ENT)+** — Nom 1 in. diam (or smaller) **Electrical Nonmetallic Tubing**. ENT installed in accordance with Article 331 of the National Electrical Code (NFPA No. 70).

See **Electrical Nonmetallic Tubing** (FKHU) category in the Electrical Construction Material Directory for names of manufacturers.

B. **Optical Fiber Raceways+** — Nom 1 in. diam (or smaller) **Optical Fiber Raceways**. Optical fiber raceways installed in accordance with Article 770 of the National Electrical Code (NFPA No. 70).

See **Optical Fiber Raceways** (QAZM) category in the Electrical Construction Material Directory for names of manufacturers.

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

A. **Packing Material** — In 2 hr rated wall assemblies, foam backer rod firmly packed into opening as a permanent form. Packing material to be recessed from both surfaces of wall as required to accommodate the required thickness of fill material.

B. **Fill, Void or Cavity Material*— Caulk** — Min 1/2 in. thickness of fill material applied within the annulus, flush with both surfaces of wall. At point contact location, a min 3/8 in. diam bead of fill material shall be applied to the wall/penetrant interface on both surfaces of the wall.

RECTORSEAL — Biostop 500+ Caulk

*Bearing the UL Classification Mark