

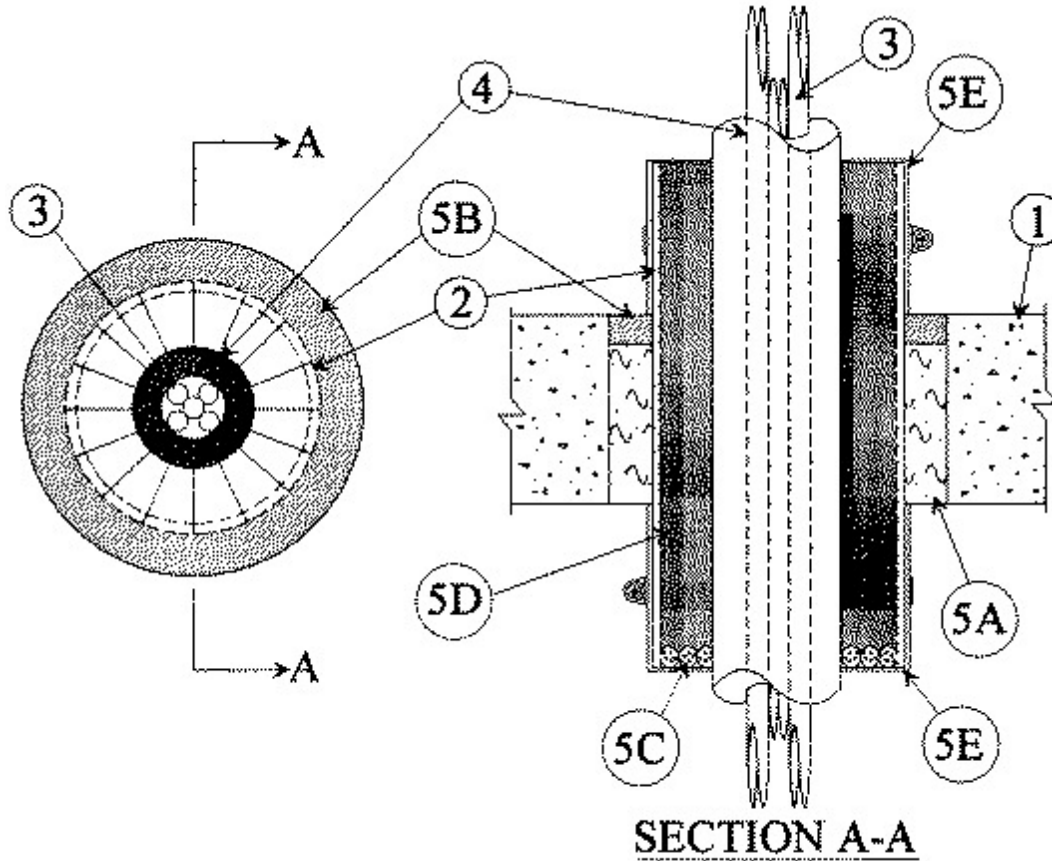


### System No. C-AJ-8047

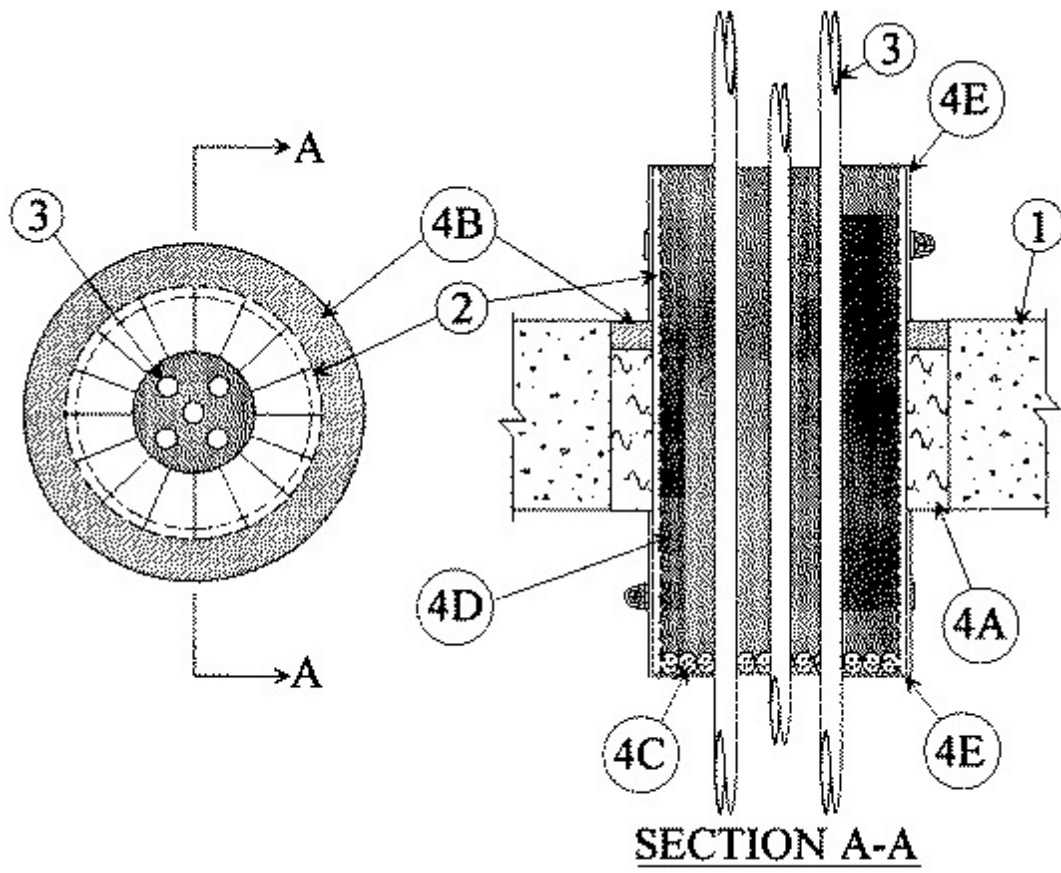
January 15, 1999

F Rating — 3 Hr.

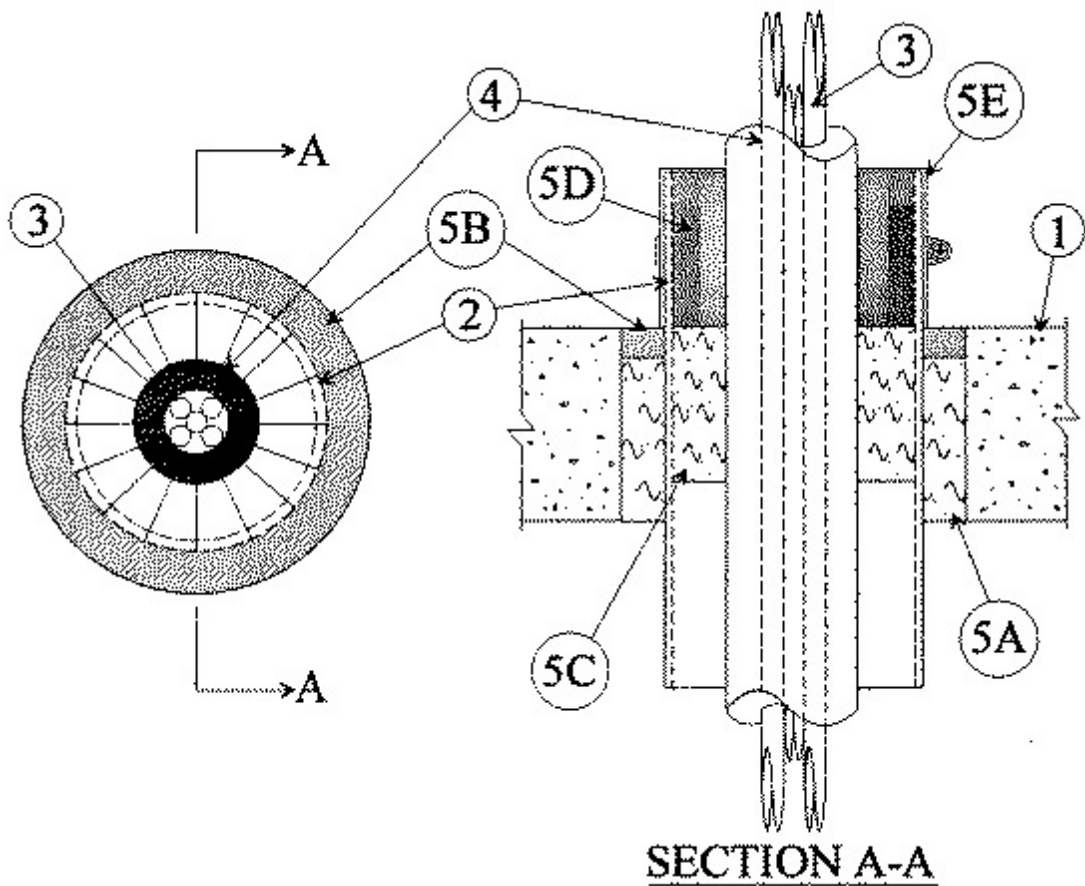
T Ratings — 0 and 2 Hr.



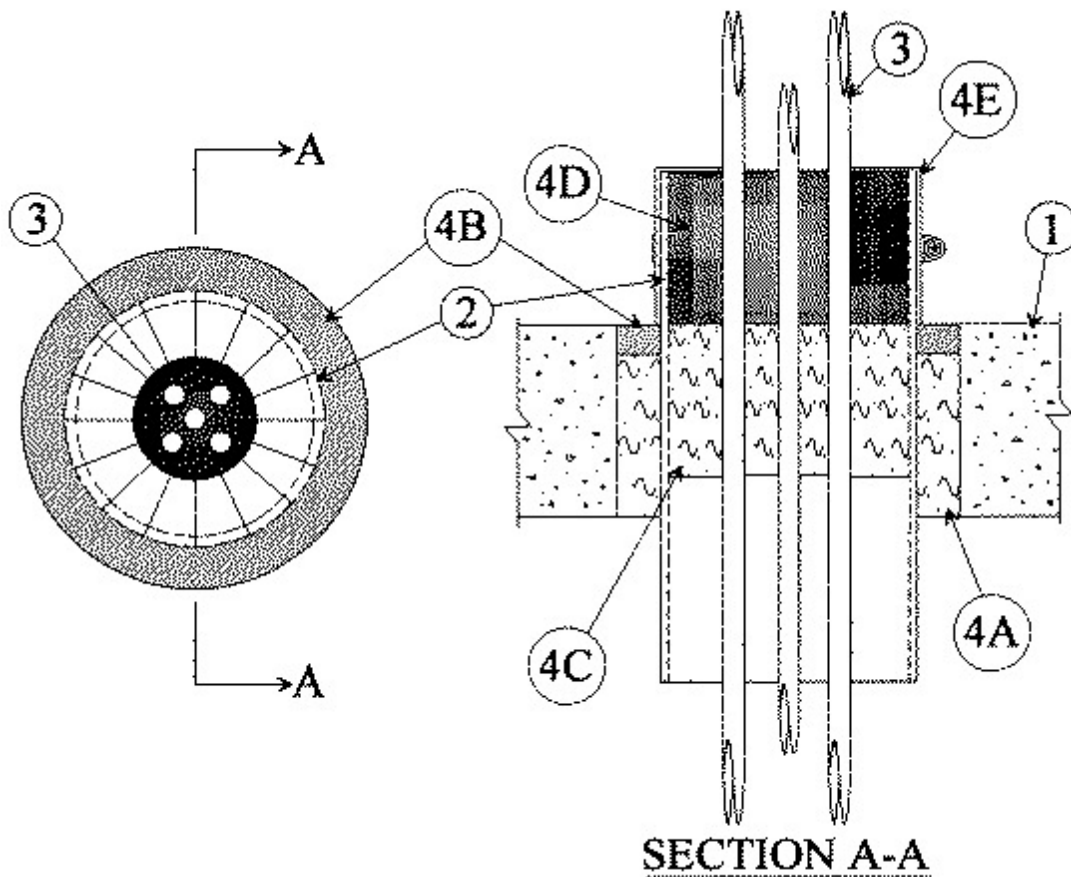
### FIRESTOP CONFIGURATION A



**FIRESTOP CONFIGURATION B**



**FIRESTOP CONFIGURATION C**



## FIRESTOP CONFIGURATION D

**1. Floor or Wall Assembly** — Min 4-1/2 in. thick reinforced lightweight or normal weight (100-150 pcf) concrete floor or min 5-1/4 in. thick reinforced lightweight or normal weight concrete wall. Wall may also be constructed of any UL Classified **Concrete Blocks\***. Max diam of opening is 8 in.

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

**2. Metallic Sleeve** — Nom 6 in. diam (or smaller) Schedule 10 (or heavier) steel pipe. In floors, sleeve installed with nom 4 in. projecting below and above floor. In walls, sleeve installed to project min 4 in. beyond each surface of the wall. One sleeve to be centered within the firestop system. A nom annular space of 3/4 in. is required between the metallic tube and the periphery of the opening. Sleeve to be rigidly supported on both sides of floor or wall assembly. The T Rating of the system is dependent on the firestop configuration as shown below. Reference the descriptions of the configurations for additional details.

### Firestop Configuration A — T Rating- 2 Hr

**3. Through Penetrants** — Beverage line consisting of max nine 3/8 in. diameter polyethylene tubes and/or max two 3/8 in. diameter Type L copper tubes tightly bundled together and centered within the metallic sleeve. Beverage line to be rigidly supported on both sides of floor or wall assembly.

**4. Tube Insulation — Plastics+** — Nom 3/4 in. thick acrylonitrile butadiene/polyvinyl chloride (AB/PVC) flexible foam furnished in the form of tubing installed around through penetrants (Item 3). A nom annular space of 1-5/16 in. is required between the tube insulation and the metallic sleeve (Item 2).

See **Plastics+** (QMFZ2) category in the Recognized Component Directory for names of manufacturers. Any Recognized Component tube for insulation material meeting the above specifications and having a UL 94 Flammability Classification of 94-5VA may be used.

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

**A. Packing Material** — Min 3-3/4 in. thickness of min 4.0 pcf mineral wool batt insulation firmly packed into opening outside of metallic sleeve (Item 2) as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall as required to accommodate the required thickness of fill material.

**B. Fill, Void or Cavity Material\* — Sealant** — Min 3/4 in. thickness of fill material applied within the annulus, outside of metallic sleeve (Item 2), flush with top surface of floor or with both surfaces of wall.

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C. **Packing Material** — Foam backer rod firmly packed into metallic sleeve as a permanent form. Packing material to be recessed within sleeve 4 in. below bottom of floor.

D. **Fill, Void or Cavity Material\* — Sealant** — Min 12 in. thickness of fill, material applied within the sleeve on top surface of packing material.

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E. **Steel Collar** — Collar fabricated from coils of precut min. 0.016 in. thick (No. 28 gauge) galv steel available from the fill material manufacturer. Collar shall be nom 2 in. deep with 1 in. wide by 1-1/4 in. long anchor tabs on 4 in. centers. In addition, the collar contains retainer tabs, 3/4 in. wide, located opposite the anchor tabs. The collar shall be wrapped around the sleeve and overlapped min 5-3/4 in. The retaining tabs are folded 90 degrees towards the tube insulation (Item 4) to retain the sealant (Item 5D). Collar secured to sleeve with one 1/2 in. wide stainless steel hose clamp located at center of collar. Collars are installed on both sides of sleeve.

**Firestop Configuration B — T Rating 0 Hr.**

3. **Through Penetrants** — A max of nine 3/8 in. diameter polyethylene tubes and/or max of two 3/8 in. diameter Type L copper tubes installed within the opening. The space between tubes shall be min 1/2 in. The space between tubes and periphery of opening shall be min 1/2 in. Tubes to be rigidly supported on both sides of floor or wall assembly.

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

A. **Packing material** — Min 3-3/4 in. thickness of min 4.0 pcf mineral wool batt insulation firmly packed into opening outside of metallic sleeve (Item 2) as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall as required to accommodate the required thickness of fill material.

B. **Fill, Void or Cavity Material\* — Sealant** — Min 3/4 in. thickness of fill material applied within the annulus, outside of metallic sleeve (Item 2), flush with top surface of floor or with both surfaces of wall.

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C. **Packing Material** — Foam backer rod firmly packed into metallic sleeve as a permanent form. Packing material to be recessed within sleeve 4 in. below bottom of floor.

D. **Fill, Void or Cavity Material\* — Sealant** — Min 12 in. thickness of fill material applied within the sleeve, on top surface of packing material.

**RECTORSEAL** — Metacaulk 1000

E. **Steel Collar** — Collar fabricated from coils of precut min 0.016 in. thick (No 28 gauge) galv steel available from the fill material manufacturer. Collar shall be nom 2 in. deep with 1 in. wide by 1-1/4 in. long anchor tabs on 4 in. centers for securement. In addition, the collar contains retainer tabs, 3/4 in. wide, located opposite the anchor tabs. The collar shall be wrapped around the sleeve and overlapped min 5-3/4 in. The retaining tabs are folded 90 degrees towards the through penetrants (Item 3) to retain the sealant (Item 4D). Collar secured to sleeve with one 1/2 in. wide stainless steel hose clamp located at center of collar. Collars are installed on both sides of sleeve.

**Firestop Configuration C — T Rating 2 Hr.**

3. **Through Penetrants** — Beverage line consisting of max nine 3/8 in. diameter polyethylene tubes and/or max two 3/8 in. diameter Type L copper tubes tightly bundled together and centered within the metallic sleeve. Beverage line to be rigidly supported on both sides of floor or wall assembly.

4. **Tube Insulation — Plastics+** — Nom 3/4 in. thick acrylonitrile butadiene/polyvinyl chloride (AB/PVC) flexible foam furnished in the form of tubing installed around through penetrants (Item 3). A nom annular space of 1-5/16 in. is required between the tube insulation and the metallic sleeve (Item 2).

See **Plastics+** — (QMFZ2) category in the Recognized Component Directory for names of manufacturers. Any Recognized Component tube insulation material meeting the above specifications and having a UL 94 Flammability Classification of 94-5VA may be used.

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

**A. Packing Material** — Min 3-3/4 in. thickness of min 4.0 pcf mineral wool batt insulation firmly packed into opening outside of metallic sleeve (Item 2) as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall as required to accommodate the required thickness of fill material.

**B. Fill, Void or Cavity Material\* — Sealant** — Min 3/4 in thickness of fill material applied within the annulus, outside of metallic sleeve (Item 2), flush with top surface of floor or with both surfaces of wall.

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**C. Packing Material** — Min 4 in. thickness of min 4.0 pcf mineral wool batt insulation firmly packed into sleeve as a permanent form. Packing material to be installed within sleeve flush with top surface of floor or both surfaces of wall.

**D. Fill, Void or Cavity Material\* — Sealant** — Min 4 in. thickness of fill material applied within the sleeve, on top surface of packing material. In walls, fill material applied within the sleeve over both surfaces of packing material.

**RECTORSEAL** — Metacaulk 1000

**E. Steel Collar** — Collar fabricated from coils of precut min 0.016 in. thick (No. 28 gauge) galv steel available from the fill material manufacturer. Collar shall be nom 2 in. deep with 1 in. wide by 1-1/4 in. long anchor tabs on 4 in. centers. In addition, the collar contains retainer tabs, 3/4in. wide, located opposite the anchor tabs. The collar shall be wrapped around the sleeve and overlapped min 5-3/4 in. The retaining tabs are folded 90 degrees towards the tube insulation (Item 4) to retain the sealant (Item 5D). Collar secured to sleeve with one 1/2 in. wide stainless steel hose clamp located at center of collar. Collars are installed on top surface of sleeves installed in floors or both ends of sleeve installed in walls.

#### **Firestop Configuration D — T Rating 0 Hr.**

**3. Through Penetrants** — A max of nine 3/8 in. diameter polyethylene tubes and/or max of two 3/8 in. diameter Type L copper tubes installed within the opening. The space between tubes shall be min 1/2 in. THE space between tubes and periphery of opening shall be min 1/2 in. Tubes to be rigidly supported on both sides of floor or wall assembly.

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

**A. Packing Material** — Min 3-3/4 in. thickness of min 4.0 pcf mineral wool batt insulation firmly packed into opening outside of metallic sleeve (Item 2) as a permanent form. Packing material to be recessed from top surface of floor required thickness of fill material.

**B. Fill, Void or Cavity Material\* — Sealant** — Min 3/4 in. thickness of fill material applied within the annulus, outside of metallic sleeve (Item 2), flush with top surface of floor or with both surfaces of wall.

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**C. Packing Material** — Min 4 in. thickness of fill min 4.0 pcf mineral wool batt insulation firmly packed into sleeve as a permanent form. Packing material to be installed within sleeve flush with top surface of floor or both surfaces of wall.

**D. Fill, Void or Cavity Material\* — Sealant** — Min 4 in. thickness of fill material applied within the sleeve, on top surface of packing material. In walls, fill material applied within the sleeve over both surfaces of packing material.

**RECTORSEAL** — Metacaulk 1000

**E. Steel Collar** — Collar fabricated from coils of precut min 0.016 in. thick (No. 28 gauge) galv steel available from the fill material manufacturer. Collar shall be nom 2 in. deep with 1 in. wide by 1-1/4 in. long anchor tabs on 4 in. centers. In addition, the collar contains retainer tabs, 3/4 in. wide, located opposite the anchor tabs. The collar shall be wrapped around the sleeve and overlapped min 5-3/4 in. The retaining tabs are folded 90 degrees towards the through penetrants (Item 3) to retain the sealant (Item 4D). Collar secured to sleeve with one 1/2 in. wide stainless steel hose clamp located at center of collar. Collars are installed on top surface of sleeves installed in floors or both ends of sleeve installed in walls.

\*Bearing the UL Classification Mark