



### System No. C-AJ-2509

March 09, 2011

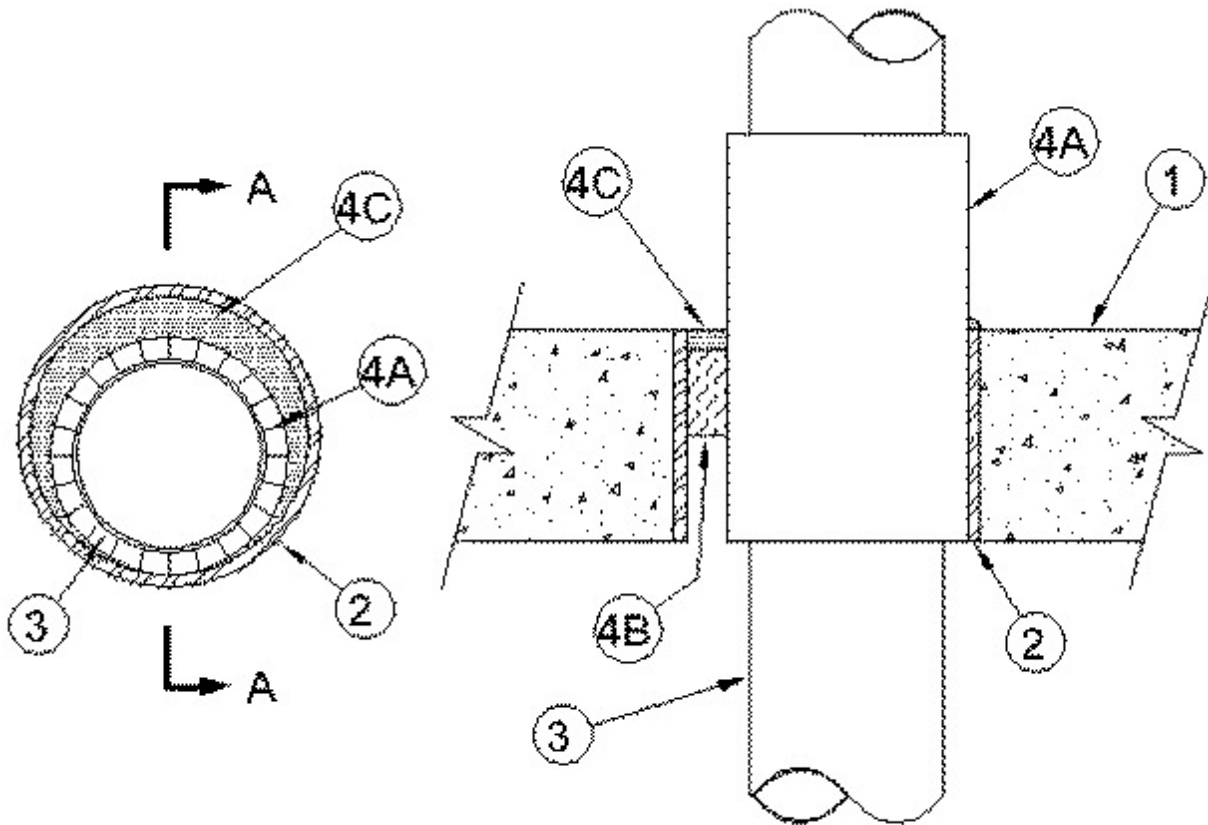
F Rating — 3 Hr

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

L Rating at Ambient — Less than 1 CFM/sq ft

L Rating at 400° F — Less than 1 CFM/sq ft

W Rating — Class 1 (See Item 4C)



SECTION 'A-A'

1. **Floor or Wall Assembly** — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400kg/m<sup>3</sup>) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks**\*. Floor may also be constructed of any min 6 in. (152 mm) thick UL Classified hollow-core **Precast Concrete Units**\*. Max diam of opening is 11 in. (279 mm). If the firestop system is installed within a hollow-core precast concrete unit, max diam of opening shall be 7 in. (178 mm).

See **Concrete Block (CAZT)** and **Precast Concrete Units (CFTV)** categories in the Fire Resistance Directory for names of manufacturers.

1A. **Steel Deck/Floor Assembly** — (Not Shown) — As an alternate to Item 1, the floor assembly may consist of a fluted steel deck/concrete floor assembly. The floor assembly shall be constructed of the materials and in the manner described in the individual Floor-Ceiling Design in the UL Fire Resistance Directory and shall include the following construction features:

A. **Steel Floor and Form Units\*** — 1-1/2 to 3 in. (38 to 76 mm) deep galv fluted units.

**B. Concrete** — Min 4-1/2 in. (114 mm) thick reinforced concrete, as measured from the top plane of the floor units.

**2. Metallic Sleeve** — (Optional) - Nom 11 in. (279 mm) diam (or smaller) Schedule 10 (or heavier) steel sleeve cast or grouted into floor or wall assembly, flush with floor or wall surfaces.

**3. Through Penetrants** — One nonmetallic pipe or conduit to be installed either concentrically or eccentrically within the firestop system. The annular space between the pipe or conduit and the periphery of the opening is dependent upon the nom diam of the pipe or conduit. If the nom diam of the pipe or conduit is 2 in. (51 mm) or less, the annular space shall be a min of 1/4 in. (6 mm) to a max 1-5/8 in. (41 mm). If the nom diam of the pipe or conduit is greater than 2 in. (51 mm) and equal to or less than 4 in. (102 mm), the annular space shall be a min of 1/2 in. (13 mm) to a max 1-5/8 in. (41 mm). If the nom diam of the pipe or conduit is greater than 4 in. (102 mm), the annular space shall be a min of 3/4 in. (19 mm) to a max 1-5/8 in. (41 mm). The pipe or conduit to be rigidly supported on both sides of floor or wall. The following types and sizes of pipes and conduits may be used:

**A. Polyvinyl Chloride (PVC) Pipe** — Nom 8 in. (203 mm) diam (or smaller) Schedule 40 cellular or solid core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

**B. Rigid Nonmetallic Conduit+** — Nom 8 in. (203 mm) diam (or smaller) Schedule 40 PVC conduit installed in accordance with the National Electrical Code, (NFPA No. 70).

**C. Chlorinated Polyvinyl Chloride (CPVC) Pipe** — Nom 8 in. (203 mm) diam (or smaller) SDR 13.5 CPVC pipe for use in closed (process or supply) piping systems.

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

**A. Firestop Device** — Galv steel sleeve lined with an intumescent material sized to fit the specific diam of the through penetrant. Device to be wrapped around outer circumference of through penetrant and installed through the annular space of the opening. The device may be secured together by means of min 1/2 in. (13 mm) wide by 0.028 in. (0.71 mm) thick stainless steel hose clamps or min 1/8 in. (3.2 mm) diam by 1/2 in. (13 mm) long steel pop rivets spaced max 4 in. (102 mm) OC. As an option, the device may be secured together by means of 3/4 in. (19 mm) wide by 0.007 in. (0.18 mm) thick glass cloth electrical tape continuously wrapped twice around the outer circumference of through penetrant, spaced a max 2 in. (51 mm) OC. The device shall be installed such that bottom edge is flush with or extends beyond the bottom surface of the floor. In floors 8 in. (203 mm) or less, the top edge of the device may be installed flush with the top surface and extend a max 3-1/2 in. (89 mm) below the bottom surface of the floor or the bottom edge of the device may be installed flush with the bottom surface of the floor. For installations in floors greater than 8 in. (203 mm), the bottom edge of the device may be installed flush with the bottom surface of the floor or extend a max 3-1/2 in. (89 mm) below the bottom surface of the floor. In walls having a nominal thickness of 8 in. (203 mm) or less, the device shall be centered within the wall and extend equally beyond each surface of the wall. In walls having a nominal thickness greater than 8 in. (203 mm), two devices shall be installed within the opening with ends butted and extending equally beyond each surface of the wall.

**RECTORSEAL** — FlameSafe® Intumescent Sleeve, Metacaulk Intumescent Sleeve or Biostop Intumescent Sleeve

**B. Packing Material** — Min 2 in. (51 mm) thickness of min 4 pcf (64 kg/m<sup>3</sup>) mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall to accommodate the required thickness of fill material. When the floor is constructed of hollow-core precast concrete units, packing material shall be recessed from both surfaces of floor to accommodate the required thickness of fill material.

**C. Fill, Void or Cavity Material\* - Sealant** — Min 1/2 in. (13 mm) thickness of fill material applied within the annulus, flush with top surface of floor or with both surfaces of wall. When the floor is constructed of hollow-core precast concrete units, fill material shall be installed symmetrically on both sides of floor, flush with both floor surfaces. A 1/2 in. (13 mm) thick bead of the sealant shall be applied at the point of contact of the firestop device and the edge of the opening at the top floor surface or both wall surfaces.

**RECTORSEAL** — FS 900+, FS 4000, MC 150+, Metacaulk 835+, BF-150+ or Biotherm 100 Sealant. T Rating is 1-3/4 hr when FS 900+ Sealant is used and 1-1/4 hr when FS 4000, MC 150+, Metacaulk 835+, BF-150+ or Biotherm 100 Sealants are used. W Rating applies when FS 4000 Sealant is used and when overlap seam of firestop device is filled with bead of FS 4000 Sealant and when a min 1/2 in. (13 mm) crown of FS 4000 Sealant is applied over the top edge of the firestop device.

\*Bearing the UL Classification Mark