

System No. F-E-2009

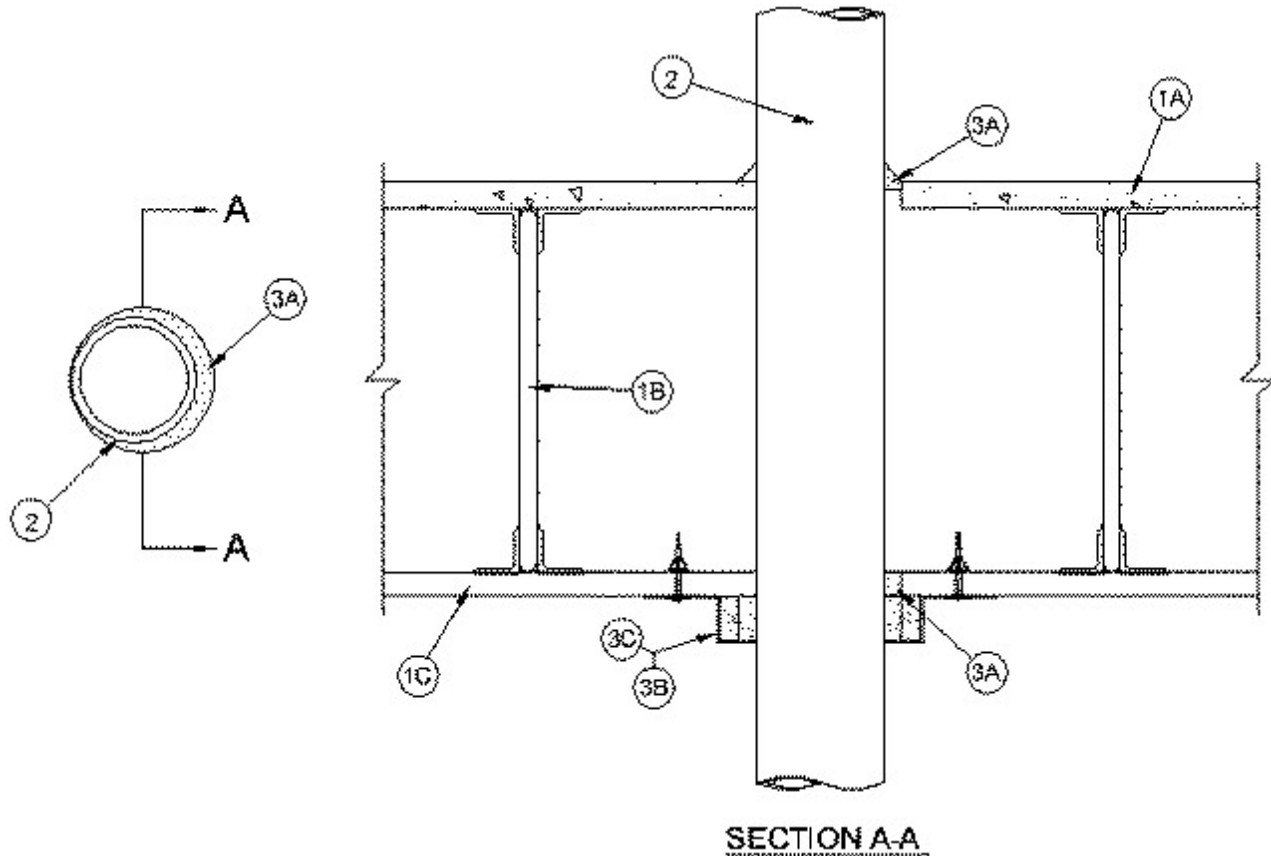
August 31, 2016

F Rating — 1 Hr

T Ratings — 0 and 1 Hr (See Item 2)

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

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



1. Floor-Ceiling Assembly — The 1 hr fire-rated concrete and steel joist Floor-Ceiling assembly shall be constructed of the materials and in the manner described in the individual G500 Series Design in the UL Fire Resistance Directory, as summarized below:

A. Concrete Floor — Normal weight or lightweight (100-150 pcf or 1600-2400 kg/m³) concrete over metal lath or steel deck as specified in the individual G500 Series Design. Max diam of floor opening is 5 in. (127 mm).

B. Joists — Steel joists or **Structural Steel Members*** as specified in the individual G500 Series Design.

C. Gypsum Board* — Min 5/8 in. (16 mm) thick, screw-attached to furring channels as specified in the individual G500 Series Design. Max diam of ceiling is 5 in. (127 mm).

2. Through Penetrants — One nonmetallic pipe or conduit to be centered within the firestop system. The annular space between pipe or conduit and periphery of the opening to be a nom 1/4 in. (6 mm). Pipe or conduit to be rigidly supported on both sides of floor-ceiling assembly. The following types and sizes of nonmetallic pipes or conduits may be used:

A. Polyvinyl Chloride (PVC) Pipe — Nom 4 in. (102 mm) diam (or smaller) Schedule 40 solid core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

B. Rigid Nonmetallic Conduit+ — Nom 4 in. (102 mm) diam (or smaller) Schedule 40 solid core PVC conduit installed in accordance with the National Electrical Code (NFPA No. 70).

C. Chlorinated Polyvinyl Chloride (CPVC) Pipe — Nom 4 in. (102 mm) diam (or smaller) SDR 13.5 CPVC pipe for use in closed (process or supply) piping systems.

D. Acrylonitrile Butadiene Styrene (ABS) Pipe — Nom 4 in. (102 mm) diam (or smaller) Schedule 40 solid core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.

The T Rating of the firestop system is dependent upon the type of through penetrant used. If a PVC pipe, PVC conduit or CPVC pipe is used, the T Rating is 0 hr. If a ABS pipe is used, the T Rating is 1 hr.

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

A. Fill, Void or Cavity Material* — Sealant — Min 1/4 in. (6 mm) thickness of fill material applied within the annulus, flush with the top surface of the floor or sole plate. Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with bottom surface of ceiling. At point contact, min 3/8 in. (10 mm) diam bead of fill material applied at penetrant/floor and at penetrant/ceiling interface.

RECTORSEAL — FS1900 Sealant, Metacaulk 1000, Metacaulk 350i, Biostop 500+, Biostop 350i

B. Fill, Void or Cavity Material* — Wrap Strip — Nom 1/4 in. (6 mm) thick intumescent material faced on both sides with a plastic film, supplied in 1 in. (25 mm) wide strips. Two layers of wrap strips are individually wrapped around the through-penetrant with the ends butted and held in place with masking tape. Butted ends in successive layers shall be offset or aligned. The wrap strips are wrapped around through-penetrant on underside of gypsum board ceiling.

RECTORSEAL — FlameSafe Wrap Strip, Metacaulk Wrap Strip, Biostop Wrap Strip

C. Steel Collar — Collar fabricated from coils of precut 0.016 in. (0.41 mm) thick (28 MSG) galv sheet steel available from wrap strip manufacturer. Collar shall be nom 1 in. (25 mm) deep with min four 1 in. (25 mm) wide by 2 in. (51 mm) long anchor tabs for securement to underside of ceiling. Retainer tabs, 3/4 in. (19 mm) wide tapering down to 1/4 in. (6 mm) wide and located opposite the anchor tabs, are folded 90 degrees toward through-penetrant surface to maintain the annular space around the through-penetrant and to retain the wrap strips. Steel collar wrapped around wrap strips and through-penetrant with a 1-1/2 in. (38 mm) wide overlap along its perimeter joint and secured together by means of a min 1/2 in. (13 mm) wide by 0.028 in. (0.71 mm) thick stainless steel hose clamp installed at midheight of the collar. Collar secured to ceiling at each anchor tab with 3/16 in. (4.8 mm) diam by min 3 in. (76 mm) long toggle bolts in conjunction with min 1/4. by 1-1/4 in. (6 by 32 mm) diam steel fender washers.

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

+Bearing the UL Listing Mark