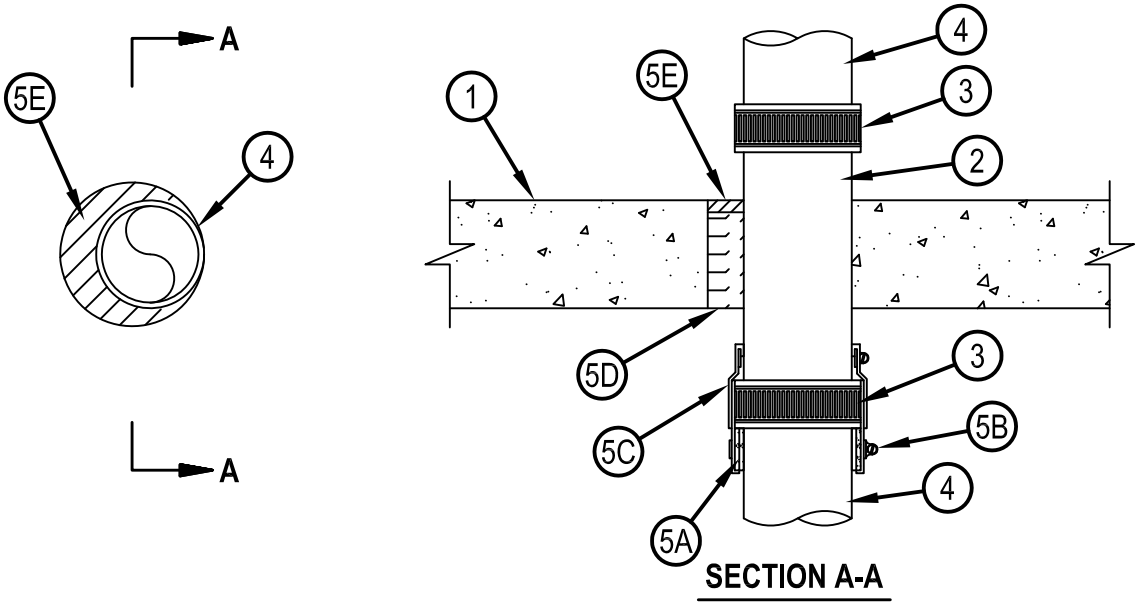
Classified by
Underwriters Laboratories, Inc.
to UL 1479

System No. F-A-2154

F Rating — 2 Hr
T Ratings — 0 and 1-1/2 Hr (See Item 2)



SECTION A-A

1. Floor Assembly — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete. Floor may also be constructed of any 6 in. thick UL Classified hollow core Precast Concrete Units. Max diam of opening is 6-1/4 in. (159 mm). See Precast Concrete Units* (CFTV) category in the Fire Resistance Directory for names of manufacturers.
2. Metallic Pipe — Nom 4 in. (102 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe or cast/ductile iron pipe installed eccentrically or concentrically within opening. Pipe to terminate 1-1/2 to 12 in. (38 to 305 mm) below bottom surface of floor and a min 1-3/4 in. (44 mm) above top surface of floor. An annular space of min 0 in. (point contact) to max 1-1/2 in. (38 mm) is required within the firestop system. Pipe to be rigidly supported on both sides of the floor assembly.
   The hourly T Rating of the firestop system is 1-1/2 hr except that when the metallic pipe terminates more than 2-1/2 in. (64 mm) from bottom surface of floor, the T Rating is 0 hr.
3. Compression Coupling — Nonmetallic pipe (Item 4) to be secured to metallic pipe with compression type high pressure pipe coupling with elastomeric gasket and a stainless steel jacket with stainless steel band clamps.
4. Nonmetallic Pipe — Nom 4 in. (102 mm) diam (or smaller) pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems. The following types and sizes of nonmetallic pipes may be used:
   A. A. Polyvinyl Chloride (PVC) Pipe — Nom 4 in. (102 mm) diam (or smaller) Schedule 40 solid core or cellular core PVC pipe.
   B. Chlorinated Polyvinyl Chloride (CPVC) Pipe — Nom 4 in. (102 mm) diam (or smaller) SDR 13.5 CPVC pipe.
   C. Acrylonitrile Butadiene Styrene (ABS) Pipe — Nom 4 in. (102 mm) diam (or smaller) Schedule 40 solid core or cellular core ABS pipe.

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

A. Fill, Void or Cavity Material* — Wrap Strip — Nom 3/16 in. (5 mm) thick intumescent material supplied in 1- 3/4 in. (44 mm) wide strips. Wrap strip to be located around nonmetallic pipe at bottom of opening and butted up against the compression coupling (Item 3). Two layers of wrap strip to be continuously wrapped around nonmetallic pipe with ends butted and held in position using tape.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 648E Wrap Strip

B. Steel Collar — Steel collar fabricated from coils of precut min 0.016 in. (0.4 mm) thick (No. 28 gauge) galv steel available from fill material manufacturer. Collar shall be min 1-3/4 in. (44 mm) deep with 1 in. (25 mm) wide by 2 in. (51 mm) long anchor tabs. In addition, collars contain preformed retainer tabs 1/2 in. (13 mm) wide by 3/16 in. (5 mm) long, located opposite the anchor tabs. Collar, with anchor tabs upward (unbent), shall be tightly wrapped over the wrap strip, overlapping min 1 in. (25 mm) at seam and compressed with a min 1/2 in. (13 mm) wide by 0.028 in. (0.7 mm) thick stainless steel band at collar mid-height.

C. Hanger Straps — Hanger straps to be fabricated out of min 0.016 in. (0.41 mm) thick (28 gauge) sheet steel. Hanger straps to be min 1-1/2 in. (38 mm) wide tapering to 1/4 in. (6 mm) and of sufficient length so when attached to anchor tabs they lap onto metallic pipe above the compression coupling a min of 1 in. (25 mm) For nom max 2 in. (51 mm) (and smaller) penetrants, two hangers are required. For nom 2-1/2 to 4 in. (64 to 102 mm) penetrants, three hangers are required. Hangers to be secured to collar assembly by inserting 1/4 in. (6 mm) end into opening in collar anchor tab and bending 180°. The hangers shall be tightly compressed around the metallic pipe below the floor, directly above the compression coupling with a min 1/2 in. (13 mm) stainless steel hose clamp.

D. Packing Material — Min 4 in. (102 mm) thickness of min 4 pcf (64 kg/m3) mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor to accommodate the required thickness of fill material. For hollow core floors, min thickness of packing material is 5-1/2 in. (140 mm) and packing material is installed flush with bottom surface of floor and recessed from top surface of floor to accommodate the required thickness of fill material.

E. Fill, Void or Cavity Material* — Min 1/2 in. (13 mm) thickness of sealant applied within annulus, flush with top surface of floor. In addition, a min 1/4 in. (6 mm) bead of sealant applied at point contact location.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE Sealant or FS-ONE MAX Intumescent Sealant

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