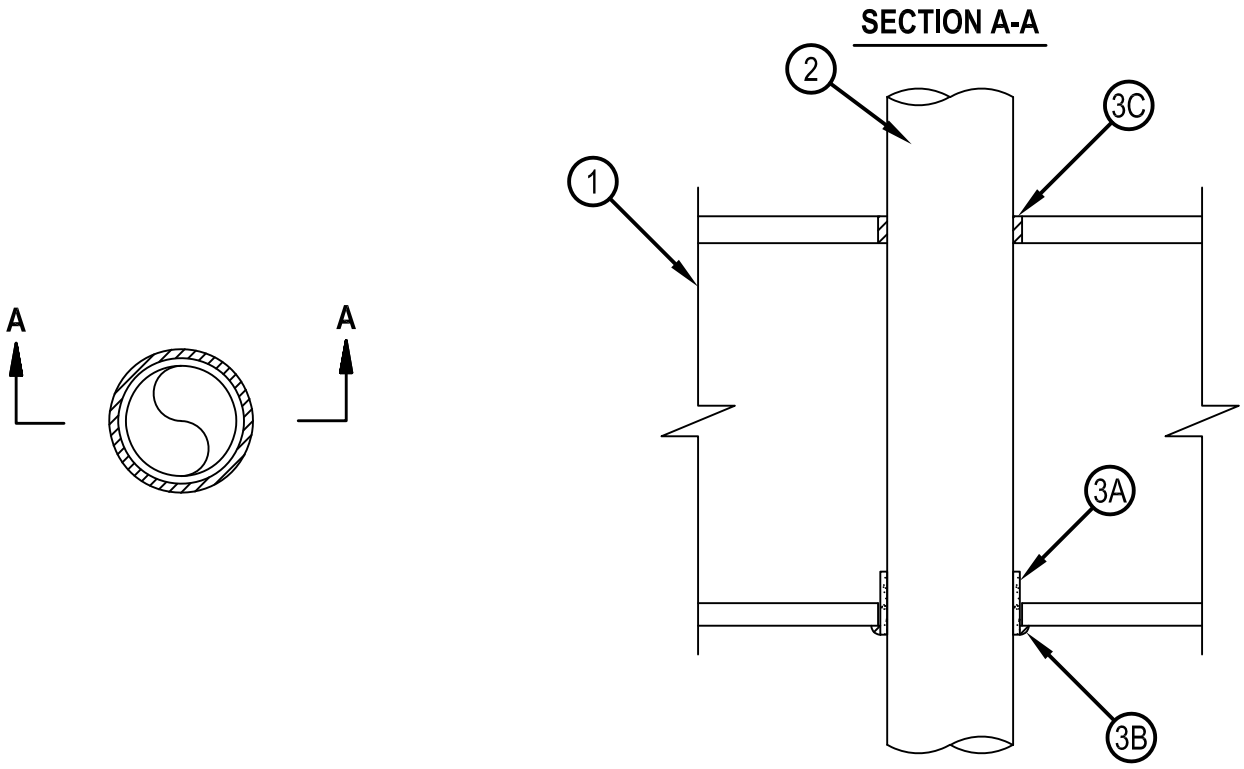
Classified by
Underwriters Laboratories, Inc.
to UL 1479

System No. F-C-2335

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



1. Floor-Ceiling Assembly — The 1 hr fire-rated solid or trussed lumber joist floor-ceiling assembly shall be constructed of the materials and in the manner specified in the individual L500 Series Floor-Ceiling Designs in the UL Fire Resistance Directory. The general construction features of the floor-ceiling assembly are summarized below:
   A. Flooring System — Lumber or plywood subfloor with finish floor of lumber, plywood or Floor Topping Mixture* as specified in the individual Floor-Ceiling Design. Max diam of opening shall be 4 in. (102 mm).
   B. Wood Joists* — Nom 10 in. (254 mm) deep (or deeper) lumber, steel or combination lumber and steel joists, trusses or Structural Wood Members* with bridging as required and with ends firestopped.
   C. Gypsum Board* — Min 5/8 in. (16 mm) thick as specified in the individual Floor-Ceiling Design. Gypsum board secured to wood joists or furring channels as specified in the individual Floor-Ceiling Design. Max diam of opening shall be 4 in. (102 mm).

1.1 Chase Wall — (Optional, not shown) The through penetrant may be routed (Item 2) through a fire rated or non-rated single, double or staggered wood stud/gypsum wallboard chase wall constructed to include the following construction details:
   A. Studs — Nom 2 by 6 in. (51 by 152 mm) or double nom 2 by 4 in. (51 by 102 mm) lumber studs.
   B. Sole Plate — Nom 2 by 6 in. (51 by 152 mm) or parallel 2 by 4 in. (51 by 102 mm) lumber plates, tightly butted. Max diam of opening is 4 in. (102 mm).
   C. Top Plate — The double top plate shall consist of two nom 2 by 6 in. (51 by 152 mm) or two sets of parallel 2 by 4 in. (51 by 102 mm) lumber plates, tightly butted. Max diam of opening is 4 in. (102 mm).
   D. Gypsum Board* — One layer of min 1/2 in. (13 mm) gypsum board.

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2. Through Penetrants — One non-metallic pipe or conduit to be installed concentrically or eccentrically within the opening. The annular space between the pipe, conduit or tubing and the periphery of opening shall be min 3/16 in (4.8 mm). to max 5/16 in. (8 mm). Pipe or conduit to be rigidly supported on both sides of floor-ceiling assembly. The following types and sizes of non-metallic pipes or conduit may be used:
   A. Polyvinyl Chloride (PVC) Pipe — Nom 3 in. (76 mm) diam (or smaller) Schedule 40 cellular core or solid core PVC pipe for use in vented (drain, waste or vent) or closed (process or supply) piping systems.
   B. Chlorinated Polyvinyl (CPVC) Pipe — Nom 3 in. (76 mm) diam (or smaller) SDR13.5 CPVC pipe for use in vented (drain, waste or vent) or closed (process or supply) piping systems.
   C. Rigid Nonmetallic Conduit+ — Nom 3 in. (76 mm) diam (or smaller) PVC conduit installed in accordance with the National Electrical Code (NFPA 70).
   D. Acrylonitrile Butadiene Styrene (ABS) Pipe — Nom 3 in. (76 mm) diam (or smaller) Schedule 40 cellular or solid core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.
   The T Rating is 1/2 Hr for penetrants with a nom diam of 2 in (51 mm) or smaller. The T Rating is 0 Hr for penetrants with a nom diam greater than 2 in. (51 mm).
3. Firestop System — The firestop system shall consist of the following:
   A. Fill, Void or Cavity Material* - Wrap Strip — One layer of wrap wrapped around pipe with ends tightly butted and held in place with supplied tape. Wrap strip slid into the annular space such that the bottom edge of the wrap strip extends 1/4 in. (6 mm) from the bottom surface of ceiling board or at the underside of the top plate.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 648S - 1.5"(38 mm) US, CP 648S - 2"(51 mm) US, CP 648S - 3"(76 mm).
   B. Fill, Void or Cavity Material* - Sealant — Min 1/4 in. (6 mm) bead applied around periphery of wrap strip, at the wrap strip gypsum board interface or at the underside of the top plate.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-One Sealant
   C. Fill, Void or Cavity Material* - Sealant — Min 3/4 in (19 mm) depth applied within the annulus, flush with the top surface of the floor or the top surface of the sole plate.
   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.

+Bearing the UL Listing Mark.