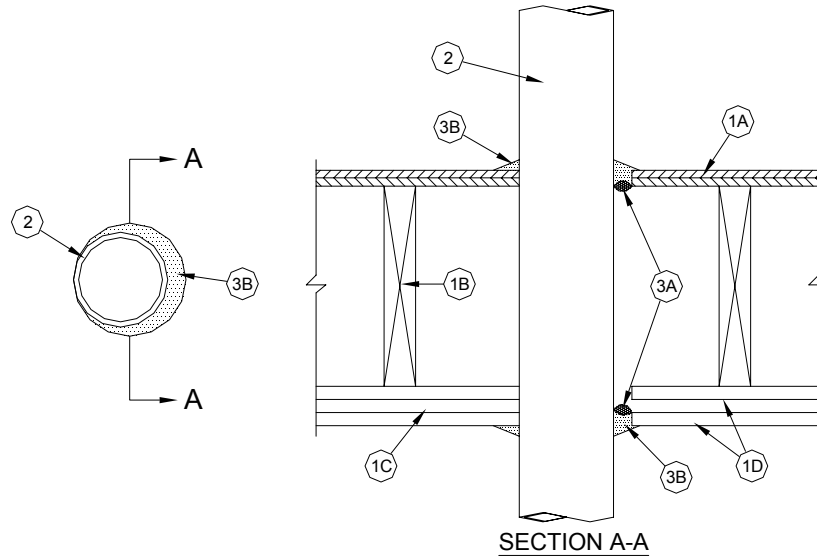


Through-penetration Firestop Systems
UL System No. F-C-1149
F Ratings - 1 and 2 Hr (See Item 1)
T Rating - 1/4 Hr
L Rating at Ambient - Less Than 1 CFM/Sq Ft



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 2 hr fire-rated wood joist floor-ceiling assembly shall be constructed of the materials and in the manner specified in Design Nos. L505, L511 or L536 in the UL Fire Resistance Directory. **The F Rating of the firestop system is equal to the hourly fire rating of the floor-ceiling assembly.** 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. dia. of opening is 7/8 in. (22 mm) larger than outside dia. of penetrant.
- B. **Wood Joists** - For 1 hr fire-rated floor-ceiling assemblies, 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. For 2 hr fire-rated floor-ceiling assemblies, nom 2 by 10 in. (51 by 254 mm) lumber joists spaced 16 in. (406 mm) OC with nom 1 by 3 in. (25 by 76 mm) lumber bridging and with ends firestopped.
- C. **Furring Channels** - In 2 hr fire-rated assemblies, resilient galv steel furring installed perpendicular to wood joists between first and second layers of gypsum board (Item 1D). Furring channels spaced max 24 in. (610 mm) OC.
- D. **Gypsum Board*** - Nom. 4 ft (122 cm) wide by 5/8 in. (16 mm) thick as specified in the individual Floor-Ceiling Design. First layer of gypsum board secured to wood joists or furring channels as specified in the individual Floor-Ceiling Design. Second layer of gypsum board (2 hr fire-rated assembly) screw-attached to furring channels as specified in the individual Floor-Ceiling Design. Max. dia. of opening is 7/8 in. (22 mm) larger than outside dia. of penetrant.

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- 1.1 **Chase Wall** - (Optional, not shown) - The through penetrants (Item No. 2) may be routed through a fire-rated single, double or staggered wood stud/gypsum wallboard chase wall having a fire rating consistent with that of the floor-ceiling assembly. The chase wall shall be constructed of the materials and in the manner specified in the individual U300 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
 - 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. dia. of opening is 3 in. (76 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. dia. of opening is 3 in. (76 mm).
 - D. **Gypsum Board*** - Thickness, type, number of layers and fasteners shall be as specified in individual Wall and Partition Design.
2. **Through Penetrants** - One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The space between pipes, conduits or tubing and periphery of opening shall be min. 0 in. (point contact) to max. 7/8 in. (22 mm). Pipe, conduit or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:
 - A. **Steel Pipe** - Nom 8 in. (203 mm) dia. (or smaller) Schedule 40 (or heavier) steel pipe.
 - B. **Iron Pipe** - Nom. 8 in. (203 mm) dia. (or smaller) cast or ductile iron pipe.
 - C. **Conduit** - Nom. 4 in. (102 mm) dia. (or smaller) steel electrical metallic tubing or nom 6 in. dia. (or smaller) steel conduit.
 - D. **Copper Tubing** - Nom. 4 in. (102 mm) dia. (or smaller) Type L (or heavier) copper tubing.
 - E. **Copper Pipe** - Nom. 4 in. (102 mm) dia. (or smaller) Regular (or heavier) copper pipe.
3. **Firestop System** - The firestop system shall consist of the following:
 - A. **Packing Material** - (Optional) - Foam backer rod firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or sole plate and bottom surface of ceiling or lower top plate as required to accommodate the required thickness of fill material.
 - B. **Fill, Void or Cavity Material* - Caulk** - Min. 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with top surface of the floor or sole plate and bottom surface of the ceiling or lower top plate. Additional fill material to be installed such that a min. 1/2 in. (13 mm) crown is formed around the penetrating item and lapping 1-1/4 in. (32 mm) beyond the periphery of the opening.

A/D FIRE PROTECTION SYSTEMS INC - A/D FIREBARRIER Intumescent Sealant

*Bearing the UL Classification Mark