

System No. F-C-8035

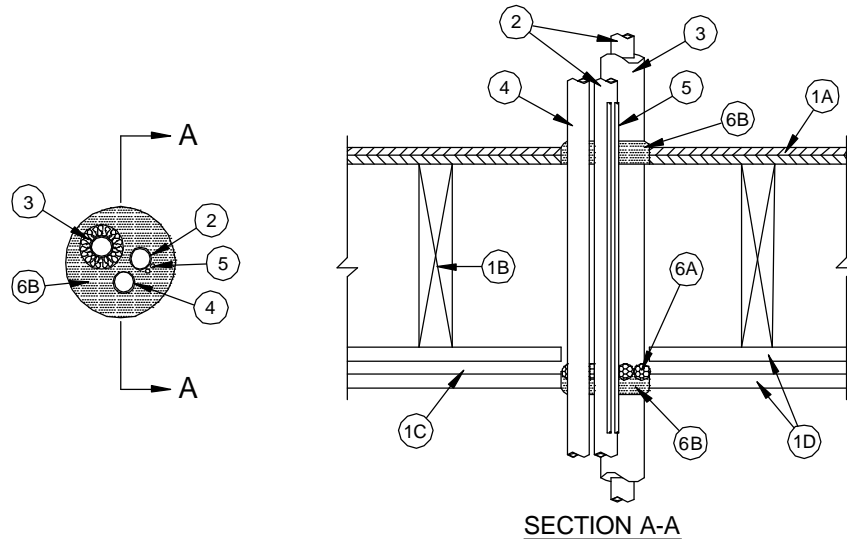
August 2008

F Ratings — 1 and 2 Hr (See Item 1)

T Ratings — 1 and 2 Hr (See Item 1)

L Rating at Ambient — 16 CFM/Sq Ft

(UL/cUL)



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 No. L505, L511 or L536 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 floor opening is 5 in. (127 mm).
- 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. In 1 hr fire-rated assemblies, resilient galv steel furring installed perpendicular to wood joists between gypsum board and wood joists as specified in the individual Floor-Ceiling Design. 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 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 diam of ceiling opening is 5 in. (127 mm).

The F and T Ratings of the firestop system are equal to the hourly rating of the floor-ceiling assembly in which the firestop system is installed.

- 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 board 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 diam of opening is 5 in. (127 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 5 in. (127 mm).
- D. **Gypsum Board*** — Thickness, type, number of layers and fasteners shall be as specified in individual Wall and Partition Design.
2. **Through Penetrants** — A max of two metallic pipes, conduits or tubing to be installed concentrically or eccentrically within opening. Pipes, conduits or tubing to be spaced min 1/4 in. (6 mm) to max 3/4 in. (19 mm) apart. The space between the pipes, conduits or tubing and the periphery of the opening shall be min 1/4 in. (6 mm) to max 1-1/2 in. (38 mm). Penetrants to be rigidly supported on both sides of floor-ceiling assembly. The following types and sizes of metallic pipe, conduits or tubing may be used:
 - A. **Steel Pipe** — Nom 1 in. (25 mm) diam (or smaller) Schedule 5 (or heavier) steel pipe.
 - B. **Conduit** — Nom 1 in. (25 mm) diam (or smaller) steel electrical metallic tubing or steel conduit.
 - C. **Copper Tubing** — Nom 1 in. (25 mm) diam (or smaller) Type L (or heavier) copper tubing.
 - D. **Copper Pipe** — Nom 1 in. (25 mm) diam (or smaller) Regular (or heavier) copper pipe.
3. **Tube Insulation-Plastics+** — Nom 1/2 in. (13 mm) thick acrylonitrile butadiene/polyvinyl chloride (AB/PVC) flexible foam furnished in the form of tubing. Tube insulation to be installed on a max of one metallic pipe or tubing. The annular space between the insulated penetrant and the periphery of the opening shall be min 1/4 in. (6 mm) to max 1-1/2 in. (38 mm). The annular space between the insulated penetrant and the metallic or nonmetallic pipes (Items 2 and 4) shall be min 1/4 in. (6 mm) to max 3/4 in. (19 mm).

See **Plastics** (QMFZ2) category in the Recognized Component Directory for names of manufacturers. Any Recognized Component tube insulation material meeting the above specifications and having a UL 94 Flammability Classification of 94-5A may be used.
4. **Nonmetallic Pipes** — One nonmetallic pipe or conduit to be installed within the firestop system. Pipe or conduit to be spaced min 1/4 in. (6 mm) to max 3/4 in. (19 mm) from the insulated and non-insulated through penetrants (Items 2 and 3). The space between the pipe or conduit and the periphery of the opening shall be min 1/4 in. (6 mm) to max 1-1/2 in. (38 mm). Pipe or conduit to be rigidly supported on both sides of floor-ceiling assembly. One of the following types and sizes of nonmetallic through penetrants may be used:
 - A. **Polyvinyl Chloride (PVC) Pipe** — Nom 1 in. (25 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. **Chlorinated Polyvinyl Chloride (CPVC) Pipe** — Nom 1 in. (25 mm) diam (or smaller) SDR13.5 CPVC pipe for use in closed (process or supply) piping systems.
5. **Cables** — A maximum of two 4 pair No. 24 AWG (or smaller) cables with PVC insulation. Cables to be spaced min 0 in. (point contact) to max 3/4 in. (19 mm) from the other penetrants. The annular space between the cables and the periphery of the opening shall be min 1/4 in. (6 mm) to max 1-1/2 in. (38 mm). Cables to be rigidly supported on both sides of the floor-ceiling assembly.
6. **Firestop System** — The firestop system consists of the following items:
 - A. **Packing Material** — (Optional) Foam backer rod firmly packed into opening as a permanent form and recessed from bottom surface of ceiling or lower top plate to accommodate required thickness of fill material.
 - B. **Fill, Void or Cavity Material* - Caulk** — Min 3/4 in. (19 mm) thickness of fill material applied within the annulus, flush with top surface of the floor or sole plate. Min 3/4 in. (19 mm) thickness (2 hr fire-rated assembly) or min 5/8 in. (16 mm) thickness (1 hr fire-rated assembly) of fill material applied within the annulus, flush with bottom surface of the ceiling or lower top plate. Additional fill material to be forced into annular space between through penetrants to a min 3/4 in. thickness. Fill material to be installed such that a min 3/16 in. (5 mm) crown is formed around each through penetrant.

TREMCO INC — TREMstop Intumescent Acrylic, FyreCaulk, or TREMstop IA+

*Bearing the UL Classification Mark



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