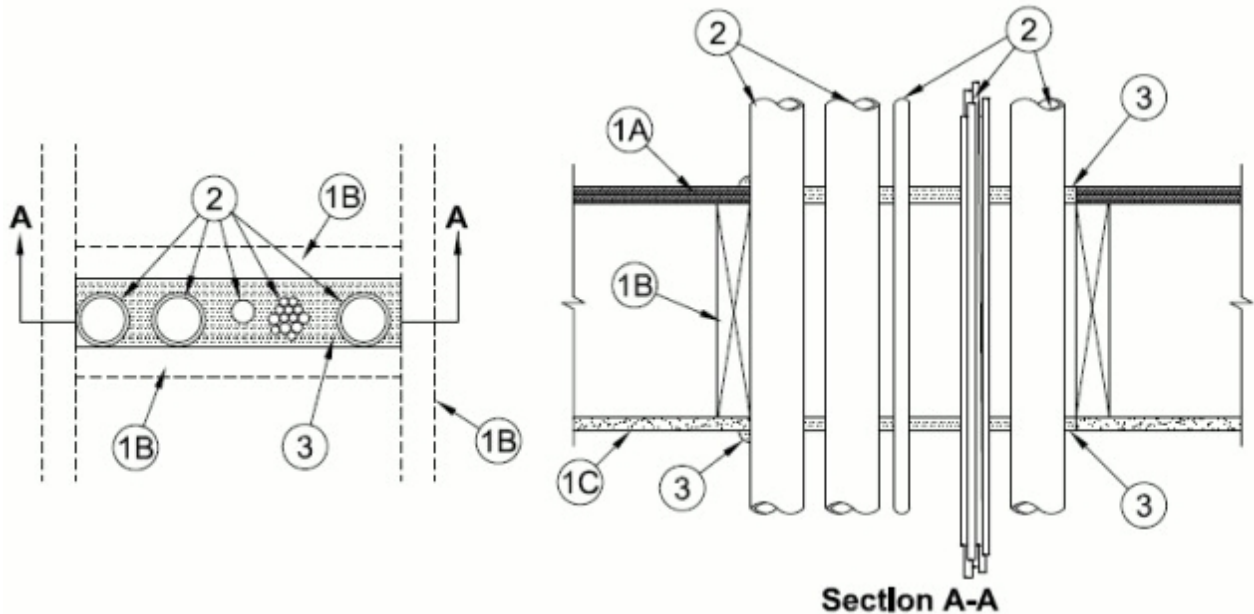


System No. F-C-8050

June 07, 2017

F Rating — 1 Hr

T Rating - 1 Hr



1. Floor-Ceiling Assembly — The 1 hr fire-rated wood joist floor-ceiling assembly shall be constructed of the materials and in the manner specified in the individual L500 Designs in the UL Fire Resistance Directory, as 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 area of rectangular opening cut in flooring is 43-1/2 sq in. (0.028 m²) with a max width dimension of 3 in. (76 mm) and with a max length dimension of 14-1/2 in. (368 mm). Longer dimension of rectangular opening to be perpendicular to wood joist direction.

B. Wood Joists — Nom 2 by 10 in. (51 by 254 mm) lumber joist spaced max 16 in. (406 mm) OC with bridging as required and with ends firestopped. Opening to be framed with 2 by 10 in. (51 by 254 mm) lumber perpendicular to the joists.

C. Gypsum Board* — Thickness, type, number of layers and fasteners as required in the individual Floor-Ceiling Design. Max area of rectangular opening cut in gypsum board ceiling is 43-1/2 sq in. (0.028 m²) with a max width dimension of 3 in. (76 mm) and with a max length dimension of 14-1/2 in. (368 mm).

1A. Chase Wall — (Optional, Not Shown) - The through penetrants (Item 2) may be routed through a 1 hr fire rated single, double or staggered wood stud/gypsum board chase wall. Depth of chase wall stud cavity to be min 1/2 in. (13 mm) greater than width of opening cut in sole and top plates to accommodate the through penetrants. 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 4 in. (51 by 102 mm), 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 4 in. (51 by 102 mm), 2 by 6 in. (51 by 152 mm) or parallel 2 by 4 in. (51 by 102 mm) lumber plates, tightly butted. Max area of rectangular opening cut in sole plate is 43-1/2 sq in. (0.028 m²) with a max width dimension of 3 in. (76 mm) and with a max length dimension of 14-1/2 in. (368 mm).

C. Top Plate — The double top plate shall consist of two nom 2 by 4 in. (51 by 102 mm), 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 area of rectangular opening cut in top plate is 43-1/2 sq in. (0.028 m²) with a max width dimension of 3 in. (76 mm) and with a max length dimension of 14-1/2 in. (368 mm).

D. Gypsum Board* — Thickness, type, number of layers and fasteners shall be as specified in the individual Wall and Partition Design.

2. Through Penetrants — One or more metallic or nonmetallic pipes, conduits, tubing or cables to be installed either concentrically or eccentrically within the opening. Min separation between penetrants to be 1 in. (25 mm). Annular space between the penetrants and the periphery of the opening shall be min 0 in. (point contact) to max 1 in. (25 mm). Penetrants to be rigidly supported on both sides of floor-ceiling assembly. The following types and sizes of through penetrants may be used:

A. Metallic Penetrants — The following types and sizes of metallic pipes, conduits or tubes may be used:

A1. **Steel Pipe** — Nom 2 in. (51 mm) diam (or smaller) Schedule 5 (or heavier) steel pipe.

A2. **Iron Pipe** — Nom 2 in. (51 mm) diam (or smaller) cast or ductile iron pipe.

A3. **Copper Pipe or Tubing** — Nom 2 in. (51 mm) diam (or smaller) Type L (or heavier) copper tube or Regular (or heavier) copper pipe.

A4. **Conduit** — Nom 2 in. (51 mm) diam (or smaller) rigid steel conduit or electrical metallic tubing (EMT).

B. Nonmetallic Penetrants — The following types and sizes of nonmetallic pipes, conduits or tubes may be used:

B1. **Polyvinyl Chloride (PVC) Pipe** — Nom 2 in. (51 mm) diam (or smaller) Schedule 40 solid or cellular core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

B2. **Chlorinated Polyvinyl Chloride (CPVC) Pipe** — Nom 2 in. (51 mm) diam (or smaller) SDR11 CPVC pipe for use in closed (process or supply) piping systems.

B3. **Rigid Nonmetallic Conduit (RNC)+** — Nom 2 in. (51 mm) diam (or smaller) Schedule 40 PVC conduit installed in accordance with the National Electrical Code (NFPA 70).

B4. **Cross Linked Polyethylene (PEX) Tubing** — Nom 1 in. (25 mm) diam (or smaller) SDR 9 PEX tubing for use in closed (process or supply) piping systems.

C. Cables — The following types of cables may be used:

C1. Max 100 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with PVC insulation and jacketing.

C2. Max 3/C No. 3/0 AWG (or smaller) aluminum or copper conductor SER cable with PVC insulation and jacketing.

C3. Max 3/C with ground No. 8 AWG (or smaller) Type NM (Romex) nonmetallic sheathed cable with PVC insulation and jacketing.

C4. Max 7/C No. 12 AWG (or smaller) power/control cables with PVC insulation and jacketing.

C5. Max 4 pair No. 24 AWG (or smaller) copper conductor data cable with PVC insulation and jacketing.

C6. Max RG/U coaxial cable with copper conductor and fluorinated ethylene insulation and jacket.

C7. Max 4 pair No. 18 AWG (or smaller) copper conductor instrumentation cable with PVC insulation and jacketing.

C8. Fiber optic cable with PVC insulation and jacketing.

C9. Through-Penetrating Products* — Max 4/C with ground No. 2/0 AWG (or smaller) aluminum or copper conductor, aluminum or steel jacketed Metal-Clad+ or Armored-Clad+ cable.

3. Fill, Void or Cavity Material* - Sealant — Min 3/4 in. (19 mm) thickness of fill material applied within the annulus, flush with the top surface of the floor or chase wall sole plate. Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with bottom surface of gypsum board ceiling or chase wall top plate. Min 1/4 in. (6 mm) diam bead of fill material applied at point contact location on the top surface of floor or chase wall sole plate and at the penetrant/ceiling or penetrant/chase wall top plate interface.

RECTORSEAL — Metacaulk 1000, Metacaulk 350i, Metacaulk MC 150+, Biostop 500+, Biostop 350i, Biostop BF 150+, FlameSafe1900 or FlameSafe900+

*** 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