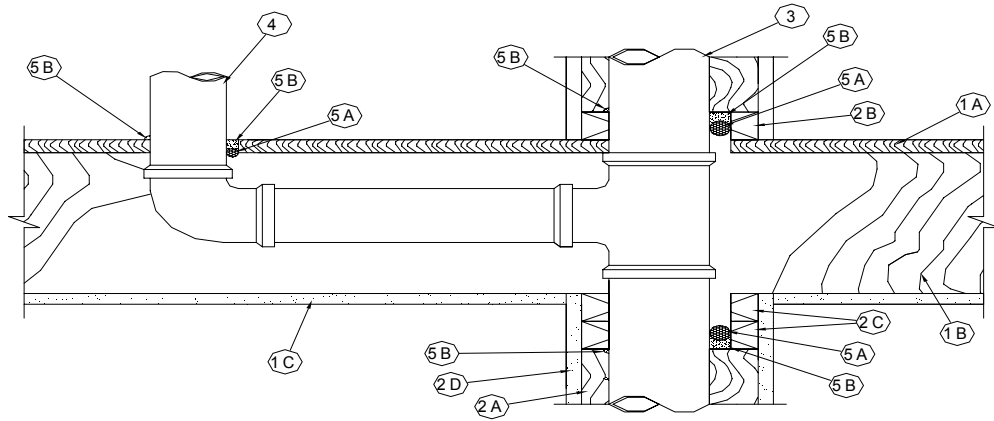
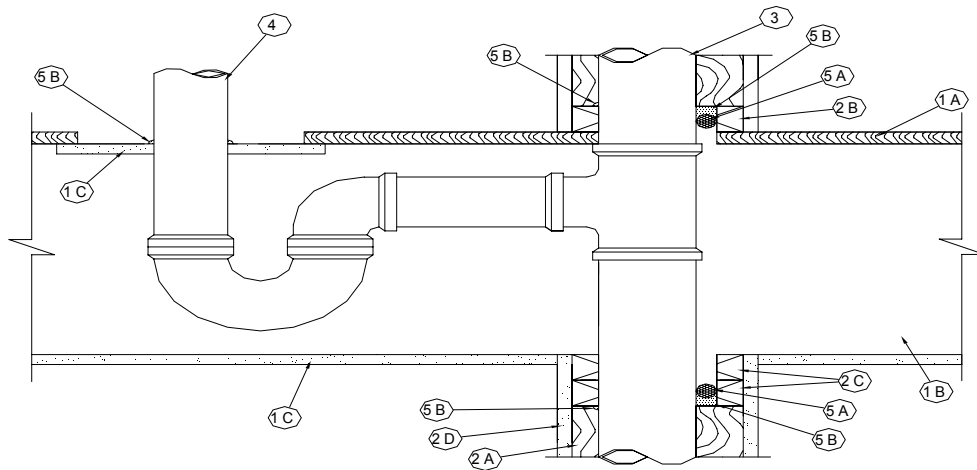


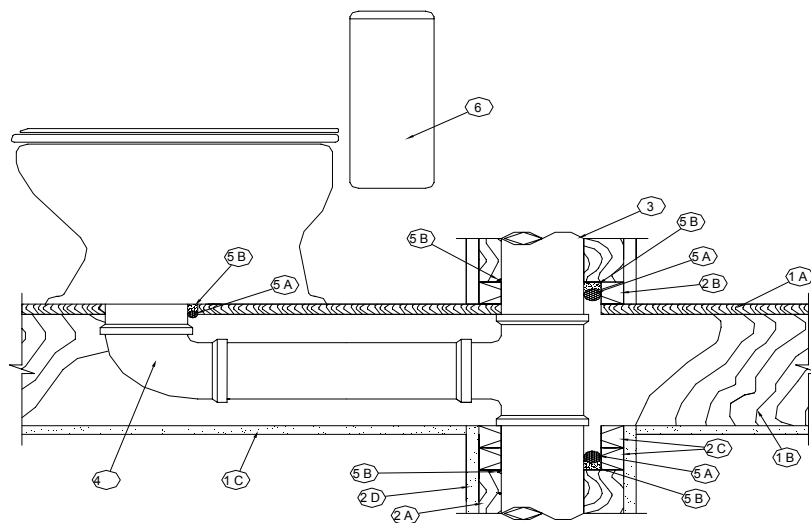
Through-penetration Firestop Systems
UL System No. F-C-2347
F Rating - 1 Hr
T Rating - 1 Hr



CONFIGURATION A



CONFIGURATION B



CONFIGURATION C

UL System F-C-2347 continued...

1. **Floor Assembly** - The 1 hr fire rated wood truss or combination wood and steel truss Floor-Ceiling assembly shall be constructed of the materials and in the manner described in the individual L500 Series Design 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. Dia. of opening shall be 1 in. (25 mm) larger than the nom. dia. of nonmetallic pipe (Items 3 and 4).
 - B. **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 ends firestopped.
 - C. **Gypsum Board*** - Nom. 4 ft (122 cm) wide by 5/8 in. (16 mm) thick, attached as described in the individual Floor-Ceiling Design. One piece of gypsum board, min. 2 in. (51 mm) longer and wider than cutout in the flooring, screw-attached to bottom of flooring concentric with cutout by means of 1 in. (25 mm) long Type S steel screws spaced max 4 in. (102 mm) OC. Max. dia. of opening in gypsum wallboard patch is nom. 3 in. (76 mm).
2. **Chase Wall** - The through penetrant (Item No. 3) shall be routed through a 1 hr fire-rated single, double or staggered wood studs/gypsum board chase wall 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. Dia. of opening shall be 1 in. (25 mm) larger than the nom. dia. of nonmetallic pipe (Item 3).
 - 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. Dia. of opening shall be 1 in. (25 mm) larger than the nom dia. of nonmetallic pipe (Item 3).
 - D. **Gypsum Board*** - Thickness, type, number of layers and fasteners shall be as specified in individual Wall and Partition Design.
3. **Through Penetrant** - One nonmetallic pipe to be installed within the firestop system. Pipe to be rigidly supported on both sides of floor-ceiling assembly. The annular space between pipe and periphery of opening shall be min 0 in. (point contact) to max 1/2 in. (13 mm). The following types and sizes of nonmetallic pipes and fittings may be used:
 - A. **Polyvinyl Chloride (PVC) Pipe** - Nom. 4 in. (102 mm) dia. (or smaller) Schedule 40 solid core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.
 - B. **Chlorinated Polyvinyl Chloride (CPVC) Pipe** - Nom. 4 in. (102 mm) dia. (or smaller) SDR13.5 CPVC pipe for use in closed (process or supply) piping system.
 - C. **Cellular Core Polyvinyl Chloride (ccPVC) Pipe** - Nom 4 in. (102 mm) dia. (or smaller) Schedule 40 cellular core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.
 - D. **Acrylonitrile Butadiene Styrene (ABS) Pipe** - Nom. 4 in. (102 mm) dia. (or smaller) Schedule 40 solid core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.
 - E. **Cellular Core Acrylonitrile Butadiene Styrene (ccABS) Pipe** - Nom. 4 in. (102 mm) dia. (or smaller) Schedule 40 cellular core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.
 - F. **Crosslinked Polyethylene (PEX) Tubing** - Nom 2 in. (51 mm) dia. (or smaller) SDR 9 PEX tubing for use in closed (process or supply) piping systems.
 - G. **Rigid Nonmetallic Conduit+** - Nom. 4 in. (102 mm) dia. (or smaller) Schedule 40 PVC conduit installed in accordance with Article 347 of the National Electrical Code (NFPA No. 70).

UL System F-C-2347 continued...

4. **Branch Piping** - (Optional) One nonmetallic pipe with or without p-trap to be connected to through penetrant (Item 3) and installed within opening in subfloor or wallboard plate. The annular space between pipe and periphery of opening shall be min. 0 in. (point contact) to max. 1/2 in. (13 mm). The following types and sizes of nonmetallic pipes, fittings and flanges may be used:
- A. **Polyvinyl Chloride (PVC) Pipe** - Nom. 3 in. (76 mm) (Configurations A and B) or 4 in. (102 mm) (Configuration C) dia. (or smaller) Schedule 40 solid core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.
 - B. **Chlorinated Polyvinyl Chloride (CPVC) Pipe** - Nom. 3 in. (76 mm) dia. (or smaller) SDR13.5 CPVC pipe for use in closed (process or supply) piping systems.
 - C. **Cellular Core Polyvinyl Chloride (ccPVC) Pipe** - Nom. 3 in. (76 mm) (Configurations A and B) or 4 in. (Configuration C) dia. (or smaller) Schedule 40 cellular core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.
 - D. **Acrylonitrile Butadiene Styrene (ABS) Pipe** - Nom. 3 in. (76 mm) (Configurations A and B) or 4 in. (102 mm) (Configuration C) dia. (or smaller) Schedule 40 solid core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.
 - E. **Cellular Core Acrylonitrile Butadiene Styrene (ccABS) Pipe** - Nom 3 in. (76 mm) (Configurations A and B) or 4 in. (102 mm) (Configuration C) dia. (or smaller) Schedule 40 cellular core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping system.
 - F. **Crosslinked Polyethylene (PEX) Tubing** - Nom. 2 in. (51 mm) dia. (or smaller) SDR 9 PEX tubing for use in closed (process or supply) piping systems.
5. **Firestop System** - The firestop system shall consist of the following:
- A. **Packing Material** - (Optional) Foam backer rod firmly packed into opening in plywood floor and sole and top plates as a permanent form. Packing material to be recessed from top surface of subfloor or sole plate, and bottom surface of top plate to accommodate the required thickness of fill material.
 - B. **Fill, Void or Cavity Materials* - Caulk** - Min. 1/2 in. (13 mm) thickness of caulk applied within annular space around perimeter of through penetrant (Item 3), flush with top surface of floor or sole plate and flush with bottom surface of lower top plate. Min. 1/2 in. (13 mm) thickness of caulk applied within annular space around perimeter of branch piping (Item 4), flush with top surface of floor. Min. 1/4 in. (6 mm) dia. bead applied at the interface of floor or plates with pipes, at all point contact locations. For Configuration B only, min. 1/2 in. (13 mm) thickness of fill material applied around branch drain pipe, flush with top surface of gypsum board.
A/D FIRE PROTECTION SYSTEMS INC - A/D FIREBARRIER Intumescent Sealant or A/D FIREBARRIER Acrylic Sealant
6. **Water Closet** - (Configuration C Only) Floor mounted vitreous china water closet.

*Bearing the UL Classification Mark

+Bearing the UL Listing Mark