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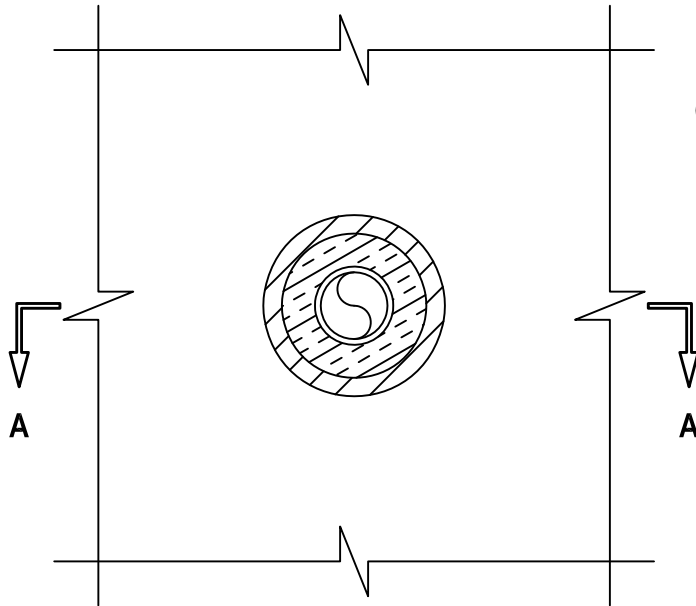
## System No. F-C-5086

F Rating — 1 Hr

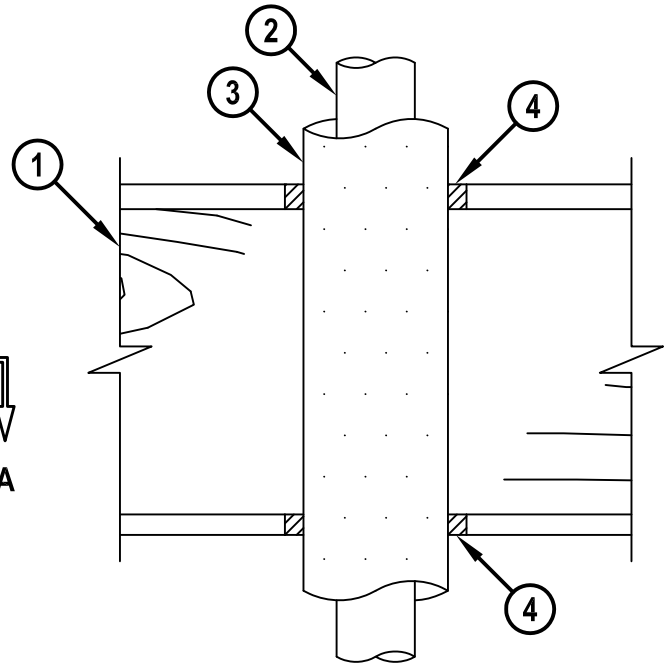
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**BOTTOM VIEW**



**SECTION A-A**



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 5-1/2 in. (140 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\* — Nom 4 ft (1.22 m) wide by 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.

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 diameter of opening cut in sole and top plates to accommodate the through penetrant (Item 2). 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), 2 by 8 in. (51 by 203 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 2 by 8 in. (51 by 203 mm) lumber plates or double nom 2 by 4 in. (51 by 102 mm) lumber plates tightly butted together. Circular opening to be centered in sole plate. Sole plate to be min 1 in. (25mm) wider than diam of opening. Max diam of opening in sole plate is 5-1/2 in. (140 mm).
- C. Top Plate — The double top plate shall consist of two nom 2 by 4 in. (51 by 102 mm), 2 by 6 in. (51 by 152 mm) or 2 by 8 in. (51 by 203 mm) lumber plates or double nom 2 by 4 in. (51 by 102 mm) lumber plates tightly butted together. Circular opening to be centered in top plate. Top plate to be min 1 in. (25mm) wider than diam of opening. Max diam of opening in top plate is 5-1/2 in. (140 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 nonmetallic pipe to be installed concentrically within the opening. Pipe to be rigidly supported on both sides of floor-ceiling assembly. The following type and sizes of nonmetallic pipe may be used:  
Chlorinated Polyvinyl Chloride (CPVC) — Nom 2 in. (51 mm) diam (or smaller) SDR 13.5 CPVC pipe for use in closed (process or supply) piping system.



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3. Pipe Covering — Nom 1 in. (25 mm) thick hollow cylindrical heavy density (min 3.5 pcf or 56 kg/m<sup>3</sup>) glass fiber units, jacketed on the outside with an all service jacket. Longitudinal joints sealed with metal fasteners or factory-applied SSL tape. Transverse joints secured with metal fasteners or with butt tape supplied with the product. The annular space between the insulated pipe and the periphery of the opening shall be min 1/8 in. (3mm) to max 1 in. (25 mm).

See Pipe and Equipment Covering-Materials (BRGU) category in the Building Materials Directory for names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.

4. Fill, Void or Cavity Material\* — Sealant — Min 3/4 in. (19 mm) thickness of sealant applied within the annulus flush with the top surface of the floor or sole plate and min 5/8 in. (16 mm) thickness of sealant applied within the annulus flush with the bottom surface of gypsum board or lower top 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.



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