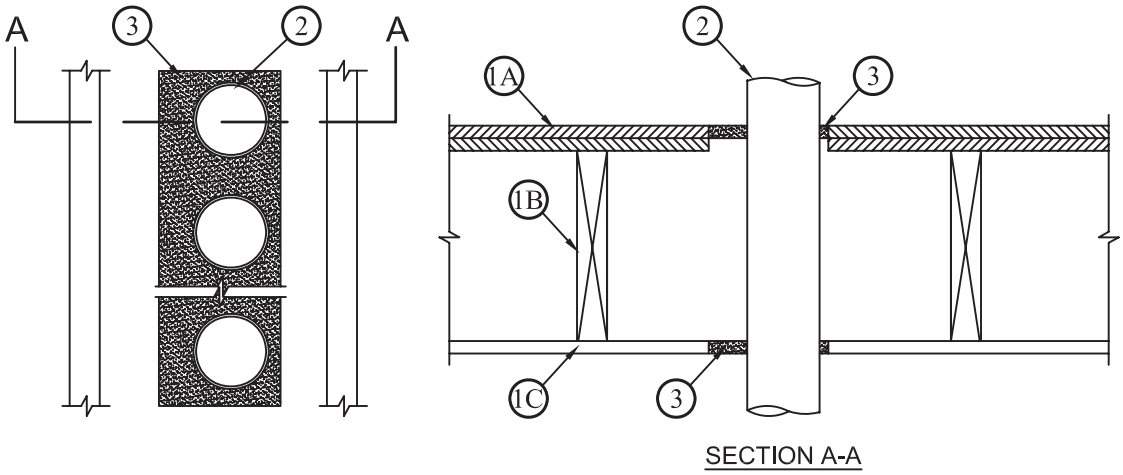
System No. F-C-1159

September 25, 2008
F Rating – 1 Hr
T Rating – 0 or 1/2 Hr (See Item 2)



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 details 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 area of opening is 288 in^2 (1471 cm^2) with max dimension of 48 in. (1219 mm). The longer dimension of rectangular opening to be parallel to the wood joist direction and opening center between joists.
   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 (122 cm) wide by 5/8 in. (16 mm) thick as specified in the individual Floor-Ceiling Design. Max area of opening is 288 in^2 (1471cm^2) with max dimension of 48 in. (1219 mm). The longer dimension of rectangular opening to be parallel to the wood joist direction and opening center between joists.
2. **Through Penetrants** – One or more metallic pipes, conduits or tubes installed concentrically or eccentrically within opening. Annular space between penetrants and periphery of opening to be min 0 in. (0 mm) (point contact) to max 2 in. (51 mm). Space between penetrants to be min 1/4 in. (6 mm) to max 2 in. (51 mm). Penetrants to be rigidly supported on both sides of floor-ceiling. The following types and sizes of penetrants may be used:
   A. **Steel Pipe** – Nom 4 in. (102 mm) diam (or smaller) Schedule 5 (or heavier) steel pipe.
   B. **Iron Pipe** – Nom 4 in. (102) diam (or smaller) cast or ductile iron pipe.
   C. **Conduit** – Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing (EMT) or nom 4 in. rigid steel conduit.
   D. **Copper Tubing** – Max three lengths of Nom 4 in. (102mm) diam (or smaller) Type L (or heavier) copper tubing.
   E. **Copper Pipe** – Max three lengths of Nom 4 in. (102 mm) diam (or smaller) Regular (or heavier) copper pipe.

   The T Rating of the firestop system is dependent upon the max nom diam and type of through penetrant used within the firestop system as shown in the table below:

Type of Through Penetrant	Max Nom Diam. In. (mm)	T Rating Hr
Copper Tube, CU Pipe	4 (102)	1/2
Conduit steel pipe, EMT, Iron pipe	4 (102)	1/2
Conduit steel pipe, EMT, Iron pipe	2 (51)	1

3. Fill, Void or Cavity Materials* – Caulk or Sealant – Min 3/4 in. (19 mm) thickness of caulk applied within annulus, flush with top surface of floor. Min 5/8 in. (16 mm) thickness of caulk applied within annulus, flush with bottom surface of ceiling. Min 1/4 in. (6 mm) diam bead of caulk applied at point contact locations at penetrant/floor on top surface of floor and at penetrant/ceiling interface.

   3M COMPANY
   3M FIRE PROTECTION PRODUCTS – IC 15WB+, CP 25WB+ or FB-3000 WT

*Bearing the UL Classification Marking