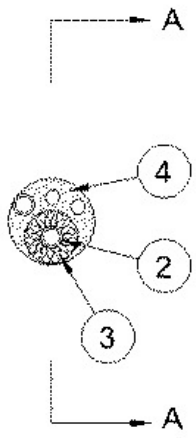
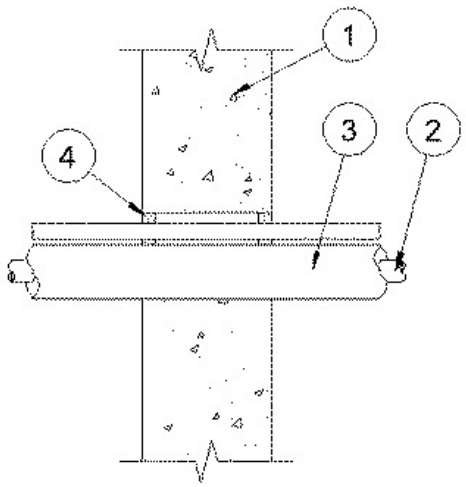
F Rating - 2 Hr
T Rating - 1 Hr





Section A-A

1. **Wall Assembly —** Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight 100-150 pcf (1600-2400 kg/m^3) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks***. Max diam of opening is 4 in. (101 mm).

2. **Metallic Penetrants —** A max of two pipes or tubes installed eccentrically or concentrically within the opening. Annular space between penetrants and periphery of opening to be min 0 in. (point contact) to max 1-7/8 in. (48 mm). Separation between penetrants to be min 0 in. (point contact) to max 1/2 in. (13 mm). Penetrants to be rigidly supported on both sides of the wall. The following types and sizes of penetrants may be used:

A. **Copper Tubing —** Nom 1 in. (25 mm) diam (or smaller) Type L (or heavier) copper tubing.

B. **Copper Pipe —** Nom 1 in. (25 mm) diam (or smaller) Regular (or heavier) copper pipe.

C. **Steel Pipe —** Nom 1 in. (25 mm) (or smaller) Schedule 5 (or heavier) steel pipe.

D. **Iron Pipe —** Nom 1 in. (25 mm) (or smaller) cast or ductile iron pipe.

3. **Cables —** Max of two cable lengths installed eccentrically or concentrically within the opening. Annular space between penetrants and periphery of opening to be min 0 in. (point contact) to max 1 7/8 in. (48 mm). Separation between penetrants to be min 0 in. (point contact) to max 1/2 in. (13 mm). Penetrants to be rigidly supported on both sides of the wall. The following types and sizes of penetrants may be used:

A. **Cables —** Max 8/C No. 12 AWG multiconductor power and control cable with XLPE or PVC insulation and PVC jacket.

4. **Tube Insulation-Plastics+ —** Nom 3/4 in. (19 mm) thick (or less) acrylonitrile butadiene/polyvinyl chloride (AB/PVC) flexible foam furnished in the form of tubing. The tube insulation may be installed on a max of one pipe or tube. Annular space between the tube insulation and periphery of opening to be min 0 in. (point contact) to max 1-1/4 in. (32 mm). Space between insulated and uninsulated penetrants to be 0 in. (point contact) to max 1/4 in. (6 mm).

See Plastics (QMFZ2) category in the Plastics 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.

5. **Fill, Void or Cavity Materials* - Caulk —** Min 5/8 in. (16 mm) thickness of caulk applied within annulus, flush with both surfaces of wall assembly.
RECTORSEAL — MC 150+

*,+ 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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