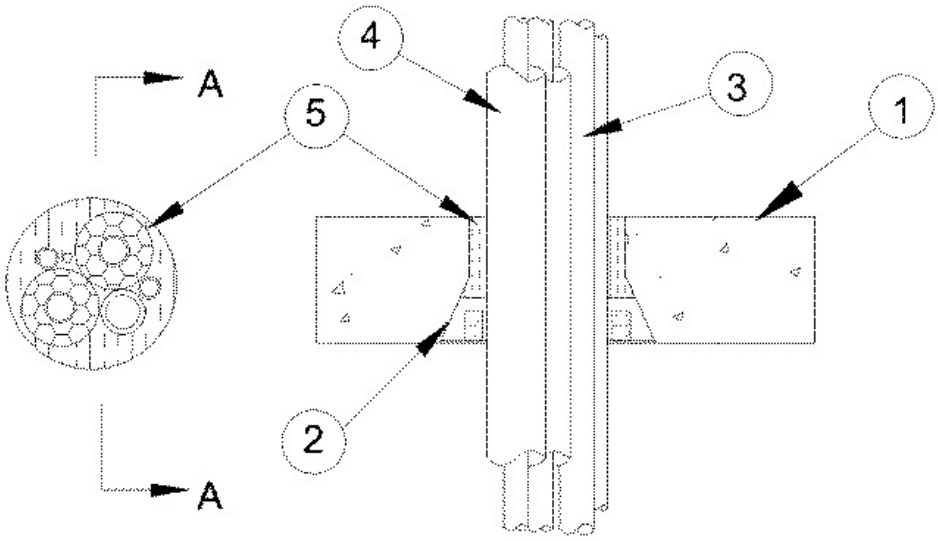
F Ratings — 2 and 3 Hr (See Item 1)
T Ratings — 0 and 1/4 Hr (See Item 1)



Section A-A

1. **Floor Assembly —** Min 2-1/2 in. (64 mm) or min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100~~1~~50 pcf or 1600-2400 kg/m^3) concrete.
The F Rating of the firestop system is 2 and 3 Hr for min 2-1/2 in. (64 mm) and min 4-1/2 in. (114 mm) thick concrete, respectively. The T Rating of the firestop system is 0 and 1/4 Hr for min 2-1/2 in. (64 mm) and min 4-1/2 in. (114 mm) thick concrete, respectively.

2. **Firestop Device* —** Cast in place firestop device permanently embedded during concrete placement in accordance with accompanying installation instructions. The device may project up to a max of 3-1/2 in. above top surface of floor or trimmed flush with top surface of floor in min 4-1/2 in. (114 mm) floors. The device shall extend a min of 1-1/2 in. (38 mm) above the top surface of floor or may project up to a max of 5-1/2 in. (140 mm) above top surface of floor in min 2-1/2 in. (64 mm) floors. The devices are provided in two sizes, nom 2-1/2 in. (64 mm) and nom 4 in. (102 mm) sizes.
RECTORSEAL — Biostop or Rectorseal Cast -in- Place Firestop Device

3. **Through Penetrants —** Pipes, tubing or cable to be bundled within the opening. The annular space between penetrants shall be min 0 in. (point contact). The space between penetrants and periphery of opening shall be min 1/2 in. (13 mm). Penetrants to be rigidly supported on both sides of floor assembly. The following types and sizes of penetrants may be used:

A. **Metallic Pipes —** A max of four pipes or tubes installed within opening. The following types and sizes of metallic pipes, conduits or tubing may be used:

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

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

B. **Polyvinyl Chloride (PVC) Pipe —** A max of one nom 1 in. (25 mm) diam (or smaller) Schedule 40 solid core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

C. **Cables —** A max of two, max 8/C No. 18 AWG (or smaller) thermostat cables; XLPE or PVC insulation with XLPE or PVC jacket.

4. **Tube Insulation-Plastics+ —** Max 1 in. (25 mm) thick acrylonitrile butadiene/polyvinyl chloride (AB/PVC) flexible foam furnished in the form of tubing. Tubing may or may not be provided on all or any copper tubes or pipes.
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. **Packing Material —** Min 3 in. (76 mm) thickness of min 4 pcf (64 kg/m^3) mineral wool batt insulation firmly packed into the

annular space as a permanent form. The packing material is to be installed flush with the top surface of the floor in min 4-1/2 in. (114 mm) floor. In min 2-1/2 in. (64 mm) floor, the firestop device (Item 2) shall extend a min of 2 in. (51 mm) above the top surface of floor and the packing material is to be recessed 1-1/2 in. (38 mm) below the top surface of the floor and extend upward a min of 1-1/2 in. (38 mm) above the top surface of the floor.

*,+ Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.