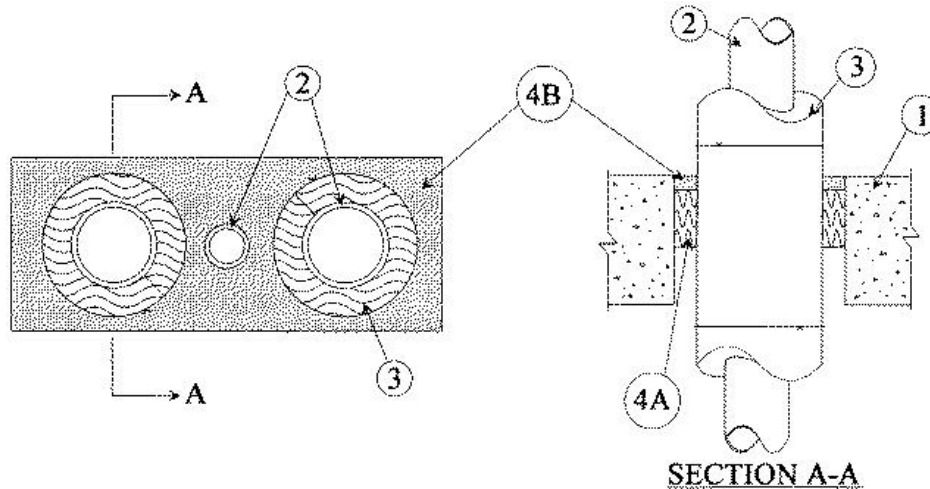


F Rating — 3 Hr
T Ratings — 0 and 1 Hr (See Items 2 and 3)



1. **Floor or Wall Assembly** — Min 4-1/2 in. thick reinforced lightweight or normal weight (100-150 pcf) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks***. Max area of opening is 96 sq in. with max dimension of 16 in. See **Concrete Blocks** (CAZT) category in the Fire Resistance Directory for names of manufacturers.

2. **Copper Tubing** — Nom 3 in. diam (or smaller) Type M (or heavier) copper tube. Tubing to be installed with a min clearance of 1 in. and a max clearance of 2-1/4 in. from the sides of the through opening (except as noted in Item 3). **When uninsulated copper tube is used, T rating is 0 hr.** Copper tubes larger than nom 1-1/2 in. diam are required to be provided with a pipe covering (Item 3). Copper tubing to be rigidly supported on both sides of floor or wall assembly.

3. **Pipe Covering Materials*** — Nom 1 in. thick unfaced mineral fiber pipe insulation having a nom density of 10.0 pcf (or heavier) and sized to the outside diam of tube. Pipe covering material required on copper tubes larger than nom 1-1/2 in. diam, optional on max 1-1/2 in. diam copper tubes. When pipe covering material is used, a min clearance of 1/2 in. and a max clearance of 2-1/4 in. shall be maintained between pipe covering material and sides of the through opening. A min clearance of 1 in. and a max clearance of 2-1/4 in. shall be maintained between adjacent insulated and/or uninsulated copper tubes. Pipe covering material secured to copper tube with min 18 AWG steel tie wires spaced max 6 in. OC. along length of copper tube with wires spaced max 3 in. from each side of butted end seams. **When pipe covering material is used on all copper tubes in the through opening, T rating is 1 hr.**

INDUSTRIAL INSULATION GROUP L L C — High Temperature Pipe Insulation 1200, High Temperature Pipe Insulation BWT or High Temperature Pipe Insulation Thermaloc

4. **Firestop System** — The firestop system shall consist of the following:

A. **Packing Material** — Min 2 in. thickness of min 4 pcf mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall as required to accommodate the required thickness of fill material.

B. **Fill, Void or Cavity Material* — Caulk** — Min 1/2 in. thickness of fill material applied within the annulus, flush with top surface of floor or with both surfaces of wall.

RECTORSEAL — [Metacaulk 950](#)

*,+ 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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