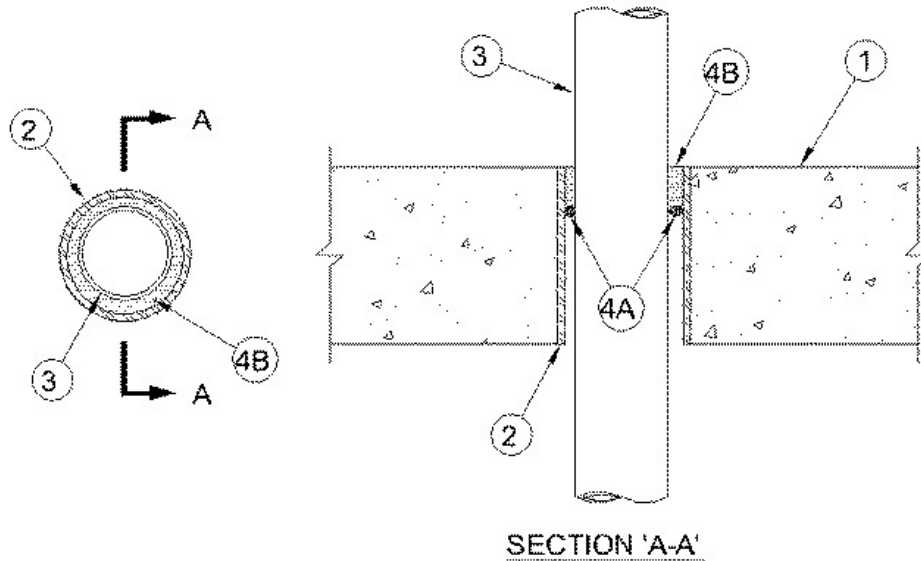


F Ratings — 2 and 3 Hr (See Item 4)
T Ratings — 1/2 and 1-1/2 Hr (See Item 4)
L Rating at Ambient — Less than 1 CFM/sq ft
L Rating at 400° F — Less than 1 CFM/sq ft



1. **Floor or Wall Assembly** — Min 4-1/2 in. (114 mm) thick reinforced normal weight (140-150 pcf or 2200-2400 kg/m³) concrete. Floor may also be constructed of any min 6 in. (152 mm) thick UL Classified hollow-core **Precast Concrete Units***. Wall may also be constructed of any UL Classified **Concrete Blocks***. Max diam of opening is shown in table below.

See **Concrete Blocks** (CAZT) and **Precast Concrete Units** (CFTV) categories in the Fire Resistance Directory for names of manufacturers.

2. **Steel Sleeve** — (Optional) - Nom 4 in. (102 mm) diam (or smaller - see table) Schedule 10 (or heavier) steel pipe cast or grouted into floor or wall assembly, flush with floor or wall surfaces.

3. **Through Penetrants** — One nonmetallic pipe to be installed either concentrically or eccentrically within the firestop system. The max diam of pipe, annular space, thickness of fill material, F and T Ratings shall be as specified in the table below. Provided no individual annular space surpasses the max identified in the table below, in order to maintain the required amount of fill material, the sum of the min and max annular space on both sides of pipe shall be equal to or greater than the max annular space for each individual pipe size shown in the table below. Pipe to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of nonmetallic pipes may be used:

A. **Polyvinyl Chloride (PVC) Pipe** — Nom 2 in. (51 mm) diam (or smaller) Schedule 40 solid or cellular core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

B. **Chlorinated Polyvinyl Chloride (CPVC) Pipe** — Nom 2 in. (51 mm) diam (or smaller) SDR13.5 CPVC pipe for use in closed (process or supply) piping systems.

C. **Rigid Nonmetallic Conduit+** — Nom 2 in. (51 mm) diam (or smaller) Schedule 40 PVC conduit installed in accordance with the National Electrical Code (NFPA No. 70).

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

A. **Packing Material** — Foam backer rod firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall to accommodate the required thickness of fill material.

B. **Fill, Void or Cavity Material* - Sealant** — Fill material applied within the annulus, flush with top surface of floor or with both surfaces of wall as shown in the table below. When floor is constructed of hollow-core precast concrete units, fill material shall be installed symmetrically on both sides of floor, flush with both floor surfaces.

Nom Opening/ Steel Sleeve Diam, In. (mm)	Max Diam of Pipe, In. (mm)	Annular Space, In. (mm)	Min Thickness of Sealant, In. (mm)	F-Rating, Hr	T-Rating Hr
2 (51)	1 (25)	0 to 7/8 (0 to 22)	1/2 (13)	3	1-1/2

3 (76)	1-1/2 (38)	0 to 1-3/16 (0 to 30)	1 (25)	2	1/2
3 (76)	2 (51)	0 to 5/8 (0 to 16)	2 (51)	2	2
4 (102)	2 (51)	0 to 1-7/8 (0 to 48)	2 (51)	2	0

RECTORSEAL — FlameSafe® FS1900, [Metacaulk 1000](#), [Metacaulk 350i](#), Biostop 350i or Biostop 500+

*,+ 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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