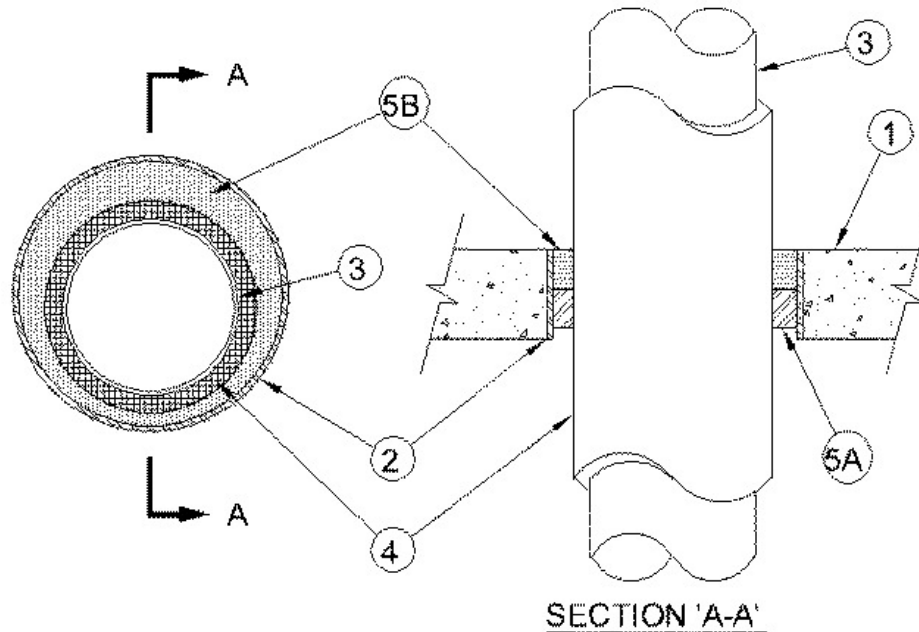


ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 2 Hr	F Rating — 2 Hr
T Rating — 3/4 and 1 Hr (See Item 5)	FT Rating — 3/4 and 1 Hr (See Item 5)
L Rating At Ambient — Less Than 1 CFM/ft ²	FH Rating — 2 Hr
L Rating At 400 F — Less Than 1 CFM/ft ²	FTH Rating — 3/4 and 1 Hr (See Item 5)
W Rating - Class 1 (Sees Item 4A and 5B)	L Rating At Ambient — Less Than 5.1 L/s/m ² (See Item 3)
	L Rating At 204 C — 5.1 L/s/m ² (See Item 3)



1. Floor or Wall Assembly — Min 4-1/2 in. (114 mm) thick reinforced light weight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete floor or min 6 in. thick reinforced light weight or normal weight concrete wall. Floor may also be constructed of any min 6 in. thick UL Classified hollow core **Precast Concrete Units***. When precast concrete units are used, the max diam of opening is 7 in. Wall may also be constructed of any UL Classified Concrete Units*. Max diam of opening is 29-1/2 in. (749 mm).

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

2. Metallic Sleeve — (optional) - Nom 30 in. (762 mm) diam (or smaller) Schedule 10 (or heavier) steel sleeve cast or grouted into floor or wall assembly, flush with floor or wall surfaces.

3. Through Penetrants — One metallic pipe or tubing to be installed either concentrically or eccentrically within the firestop system. Pipe or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes or tubing may be used:

A. **Steel Pipe** — Nom 24 in. (610 mm) diam (or smaller) Schedule 20 (or heavier) steel pipe.

B. **Iron Pipe** — Nom 24 in. (610 mm) diam (or smaller) cast or ductile iron pipe.

C. **Copper Tubing** — Nom 4 or 6 in. (102 or 152 mm) diam (or smaller) Type L (or heavier) copper tubing. See table below.

D. **Copper Pipe** — Nom 4 or 6 in. (102 or 152 mm) diam (or smaller) Regular (or heavier) copper pipe. See table below.

4. Pipe Covering* — Nom 2 in. (51 mm) thick hollow cylindrical glass fiber units, of min 4.5 pcf (72 kg/m³) density, jacketed on the outside with an all service jacket. Annular space between pipe covering and periphery of opening to be min 1/2 in. (13 mm) to max 1 in. (25 mm). Longitudinal joints sealed with metal fasteners or factory-applied self-sealing lap tape. Transverse joints secured with metal fasteners or with butt tape supplied with the product. The annular space between insulated pipe and periphery of the opening is specified in the table below.

See **Pipe and Equipment Covering - Materials (BRGU)** category in the Building Materials Directory for names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.

4A. **PVC Jacket+** — (Optional) An additional PVC jacketing (Item 4,B), supplied in sheet form, shall be tightly wrapped around the all service jacket on the pipe covering with the longitudinal seam continuously sealed using the adhesive supplied with the jacket. The jacket is to be nom 48 in. (1219 mm) wide by nom 20 or 30 mil (0.5 or 0.8 mm) thick. The jacket shall be installed at a point 36 in. (914 mm) to 40 in. (1016 mm) above the top surface of the floor assembly and shall extend downward into and/or through the opening.

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 94-5VA may be used.

The PVC jacket is required for all fiberglass pipe coverings for the W Rating to apply.

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

A. **Packing Material** — Min 2 in. (51 mm) thickness of min 4 pcf (64 kg/m³) mineral wool batt insulation or nom 1 in. diam foam backer rod (see table below) 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 manufactured by:

B. **Fill, Void, or Cavity Materials* - Sealant** — Min 1, 1-3/4 or 2 in. (25, 44 or 51 mm) thickness (see table below) of fill material applied within the annulus, flush with top surface of floor or with both surfaces of wall.

Type of Pipe	Nom Pipe Diam, in. (mm)	Annular Space, in. (mm)	Type of Sealant	Type of Packing Material	Thickness of Sealant, in. (mm)	F Rating Hr.	T Rating Hr.
Steel and Iron Pipe	24 (610)	5/8 to 1-1/4 (16 to 32)	FS1900, Metacaulk 1000 , Metacaulk 350i , Biostop 350i or Biostop 500+	Mineral Wool	2 (51)	2	3/4
Copper Tube and Pipe	4 (102)	5/8 to 1-1/4 (16 to 32)	FS1900, Metacaulk 1000 , Metacaulk 350i , Biostop 350i or Biostop 500+	Mineral Wool	2 (51)	2	3/4
Steel and Iron Pipe	24 (610)	5/8 to 1-1/4 (16 to 32)	FS900+, FlameSafe FS 1900, Metacaulk MC 150+ , Metacaulk 1000 , Metacaulk 350i , Biostop BF 150+ , Biostop 350i or Biostop 500+	Mineral Wool	2 (51)	2	1
Copper Tube and Pipe	6 (152)	5/8 to 1-1/2 (16 to 38)	FS900+, FlameSafe FS 1900, Metacaulk MC 150+ , Metacaulk 1000 , Metacaulk 350i , Biostop BF 150+ , Biostop 350i or Biostop 500+	Mineral Wool	1 (25)	2	1

Steel and Iron Pipe	12 (203)	5/8 to 1-1/2 (16 to 38)	FS900+, FlameSafe FS 1900, Metacaulk MC 150+ , Metacaulk 1000 , Metacaulk 350i , Biostop BF 150+ , Biostop 350i or Biostop 500+	Mineral Wool	1 (25)	2	1
Steel and Iron Pipe	12 (203)	1/2 to 3/4 (13 to 19)	FS1900, Metacaulk 1000 , Metacaulk 350i , Biostop 350i or Biostop 500+	Foam Backer Rod	1-3/4 (44)	2	3/4

RECTORSEAL — FS900+, FlameSafe FS 1900, [Metacaulk MC 150+](#), [Metacaulk 1000](#), [Metacaulk 350i](#), Biostop BF [150+](#), Biostop 350i or Biostop 500+

W Rating applies only when [Metacaulk MC 150+](#), [Metacaulk 1000](#), Biostop BF [150+](#), FlameSafe FS900+ or FlameSafe FS1900 is used.

*,+ 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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