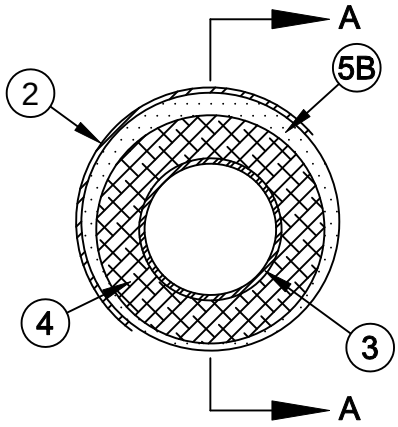
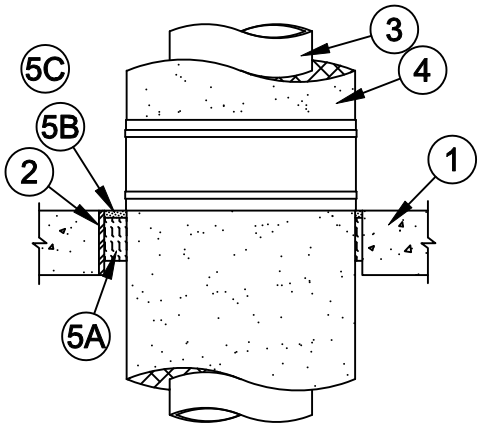
System No. C-AJ-5103

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating - 2 Hr	F Rating - 2 Hr
T Rating - 1 and 2 Hr (See Item 2)	FT Rating - 1 and 2 Hr (See Item 2)
L Rating At Ambient - Less Than 1 CFM/sq ft	FH Rating - 2 Hr
L Rating At 400 F - Less Than 1 CFM/sq ft	FTH Rating - 1 and 2 Hr (See Item 2)
W Rating - Class 1 (See Items 5C and 5D)	L Rating At Ambient - Less Than 1 CFM/sq ft
	L Rating At Ambient - Less Than 1 CFM/sq ft





Section A-A

1. **Floor or Wall Assembly -** Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks***. Max diam of opening is 24 in. (610 mm).

   See **Concrete Blocks** (CAZT) category in the Fire Resistance Directory for names of manufacturers.

2. **Steel Sleeve -** (Optional) - Nom 24 in. (610 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe sleeve Sleeve cast or grouted into concrete flush with floor or wall surfaces. Ends of steel pipe sleeve may project max 3 in. (76 mm) beyond floor or wall surfaces. When steel sleeve is used, T Rating is 1 Hr.

2A. **Sheet Steel Sleeve -** (Optional, Not Shown) - No. 26 ga (0.022 in. or 0.56 mm thick) sheet steel sleeve friction-fit, cast or grouted into floor or wall assembly, flush with floor or wall surfaces. Longitudinal seam to overlap a min 25 mm (1 in.). When steel sleeve is used, T Rating is 1 Hr.

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

   A. **Steel Pipe -** Nom 16 in. (406 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

   B. **Iron Pipe -** Nom 16 in. (406 mm) diam (or smaller) cast or ductile iron pipe.

   C. **Copper Pipe -** Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.

4. **Pipe Covering Materials* - Cellular Glass Insulation -** Nom 3 in. (76 mm) thick cellular glass units sized to the outside diam of the through-penetrant and supplied in nom 24 in. (610 mm) long half sections or nom 18 in. (457 mm) long segments. Pipe insulation installed on pipe in accordance with the manufacturer's instructions. The annular space between insulated pipe and periphery of unsleeved opening shall be min 0 in. (point contact) to max 2 in. (51 mm).

   When steel sleeve (Item 2) is used, the annular space between insulated pipe and steel sleeve shall be min 1/2 in. (13 mm) to max 2 in. (51 mm).

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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 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 -** Min 1/2 in. (13 mm) thickness of fill material applied within the annulus, flush with top surface of floor or with both surfaces of wall assembly. At the point contact location between insulated through penetrant and concrete, a min 3/8 in. (10 mm) diam bead of fill material shall be applied at the concrete/insulated through penetrant interface on the top surface of floor and on both surfaces of wall.

      SPECIFIED TECHNOLOGIES INC - SpecSeal Series SSS Sealant, SpecSeal LCI Sealant, SpecSeal Series SIL300 Sealant or SpecSeal Series SIL300SL.

      W Rating applies only when SpecSeal Series SIL300 or SpecSeal Series SIL300SL Sealants are used.

   C. **Metal Jacket -** Min 12 in. (305 mm) long jacket formed of min 0.010 in. (0.25 mm) thick aluminum sheet cut to wrap tightly around the pipe insulation with a min 2 in. (51 mm) lap and secured using bands and seals of similar material. Bands to be located within 2 in. (51 mm) of each end of the jacket and spaced max 10 in. (254 mm) OC. Jacket to be installed with edge abutting surface of fill material (Item 5B) on top surface of floor or on each side of wall. Metal jacket to be used in addition to any other jacketing material which may be required on the pipe covering.

   D. **PVC Jacket+ -** (Optional, Not Shown) - An additional PVC jacket, supplied in sheet form, shall be tightly wrapped around the the pipe covering prior to the installation of the metal jacket (Item 5C) with the longitudinal seam continuously sealed using the self-sealing lap tape or adhesive supplied with the jacket. The jacket is to be nom 48 in. (1.22 m) wide by nom 20 or 30 mil (0.5 or 0.8 mm) thick. The jacket shall extend downward into and/or through the opening from a point 36 to 40 in. (0.91 to 1.02 m) above the top surface of the floor assembly. **The PVC jacket must be used for the W Rating to apply. The W Rating applies only with floor assemblies.**

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