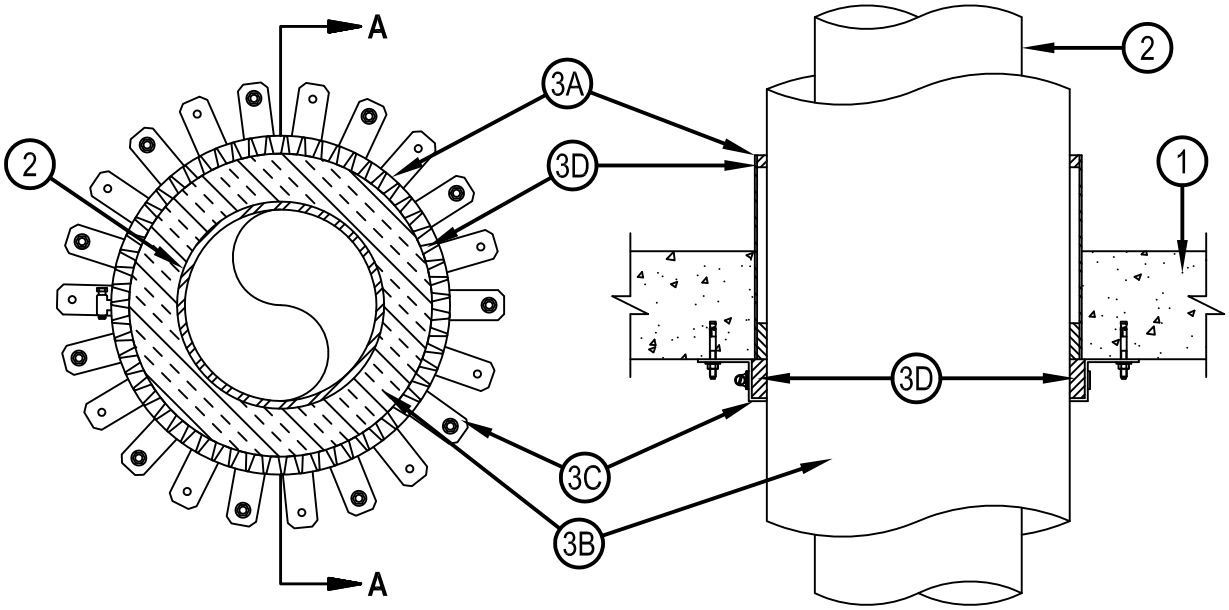
System No. F-A-5009

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 2 Hr	F Rating — 2 Hr
T Rating — 0 Hr	FT Rating — 0 Hr
	FH Rating — 2 Hr
	FTH Rating — 0 Hr



SECTION A-A

1. Floor Assembly — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete. Max diam of opening is 15 in. (381 mm).
2. Through-Penetrants — 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 10 in. (254 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

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

A. Metallic Sleeve — Cylindrical sleeve fabricated from min 0.028 in. (0.7 mm) thick (No. 24 gauge) galv sheet steel and having a min 1 in. (25 mm) lap along the longitudinal seam. Length of steel sleeve to be 1 in. (25 mm) to 4 in. (102 mm) more than the overall thickness of the wall or floor such that, when installed in opening, the bottom end of the sleeves is flush with bottom surface of floor. Sleeve installed by coiling the sheet steel to a diam smaller than the through opening, inserting the coil through the openings and releasing the coil to let it uncoil against the opening in the concrete floor.

B. Pipe Covering* — Max 2 in. (51 mm) thick hollow cylindrical heavy density (min 3.5 pcf) glass fiber units jacketed on the outside with an all service jacket. 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 shall be min 1/4 in. (6 mm) to max 1/2 in. (13 mm).

See Pipe and Equipment Covering — Materials (BRGU) category in the Building Materials Directory for the 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.

C. Steel Collar — Collar fabricated from precut 0.017 in. (0.43 mm) thick (28 MSG) galv sheet steel available from the sealant manufacturer. Collar shall be nom 2 in. deep with min 1-1/4 in. (32 mm) wide by 2 in. (51 mm) long anchor tabs for securement to floor surface. Retainer tabs, 1/4 in. (6 mm) wide by 3/4 in. (19 mm) long and located opposite the anchor tabs are folded 90 degrees toward pipe surface to maintain the annular space around the pipe and to retain the fill material. Collar secured to surface of floor with 1/4 in. (6 mm) diam by min 1-1/2 in. (38 mm) long steel expansion bolts, or equivalent, in conjunction with steel nuts and min 3/4 in. (19 mm) diam steel washers. A nom 1/2 in. (13 mm) wide stainless steel hose clamp secured to collar at mid-depth.

D. Fill, void or Cavity Material* — Sealant — Min 1-1/2 in. (38 mm) thickness of fill material applied within the annulus flush with the bottom of the floor. Min 1/2 in. (13 mm) thickness of fill material applied within the annulus flush with the top of the metallic sleeve. Additional fill material applied to completely fill the collar.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS611A, FS-ONE Sealant or FS-ONE MAX Intumescent Sealant.

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