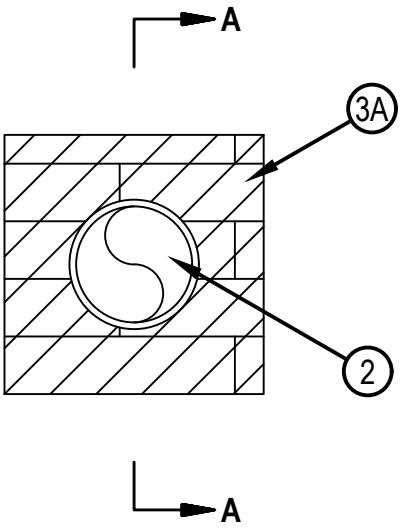
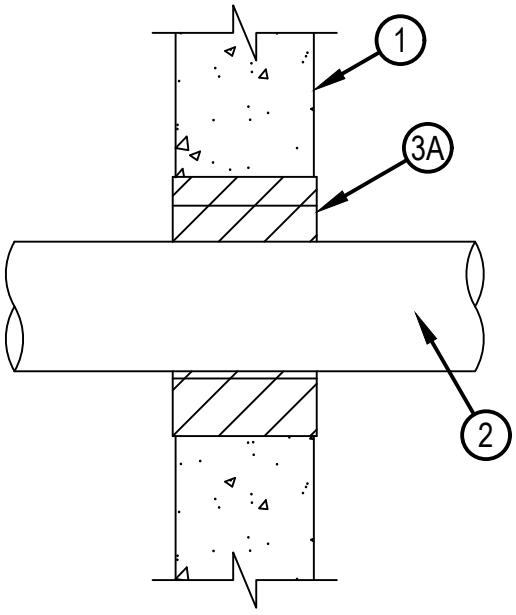
Classified by
Underwriters Laboratories, Inc.
to UL 1479 and CAN/ULC-S115

System No. W-J-1321

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings — 2 Hr	F Ratings — 2 Hr
T Rating —0 Hr	FT Rating —0 Hr
L Rating (Without Movement) at Ambient — 5 CFM/sq ft	FH Ratings —2 Hr
L Rating (Without Movement) at 400°F — 2 CFM/sq ft	FTH Rating —0 Hr
M Rating (Movement) — See Item 3B - Table 1	L Rating at Ambient (Without Movement) — Less Than 26.1 L/s/m²
	L Rating at 204°C (Without Movement) — Less Than 10.4 L/s/m²
L Rating (With Movement) at Ambient — 5.2 CFM/sq ft	L Rating (With Movement) at Ambient — 26.5 L/s/m²
L Rating (With Movement) at 400°F — 1.03 CFM/sq ft	L Rating (With Movement) at 204°C — 5.3 L/s/m²





SECTION A-A

Hilti Firestop Systems

System No. W-J-1321

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1. Wall Assembly — Min 5 in. (127 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 area of opening is 81 in2 (522.6 cm2) with max dimension of 9 in. in. (228.6mm). See Concrete Blocks (CAZT) in the Fire Resistance Directory for names of manufacturers.
2. Through Penetrants — One metallic pipe or conduit installed concentrically within the firestop system. Annular space between penetrant and periphery of opening to be min 0 in. (point contact) to max 2.5 in. (63.5 mm). Penetrant to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic penetrants may be used:
   A. Steel Pipe — Nom 4 in. (102 mm) diam (or smaller) Schedule 40 (or heavier) steel pipe.
   B. Conduit — Nom 4 in. (102 mm) diam (or smaller) rigid steel conduit or steel electrical tubing.
   C. Copper Tubing — Nom 4 in. (102 mm) diam (or smaller) Type L (or heavier) copper tubing
   D. Copper Pipe — Nom 4 in. (102 mm) diam (or smaller) Regular (or heavier) copper pipe.
   E. Aluminum Pipe — Nom 2 in. (51 mm) diam (or smaller) Schedule 10 (or heavier) aluminum pipe for use in closed (process or supply) systems or vented (drain, waste or vent) systems.
   F. Aluminum Conduit — Nom 2 in. (51 mm) diam (or smaller) or rigid aluminum conduit.
3. Firestop System — The firestop system shall consist of the following:
   A. Fill, Void or Cavity Material* — Fire block installed with 5 in. (127 mm) dimension projecting through and centered in opening. For walls thicker than 5 in. (127 mm), fire block installed with long dimension passing through and centered in opening. Blocks to be firmly packed and completely fill the entire opening around the penetrant.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CFS-BL Firestop Block
   B. Fill, Void or Cavity Material* — (Not Shown) Fill material to be forced into any voids/openings between blocks, around penetrants, and between blocks and periphery of opening to the max extent possible on both surfaces of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE MAX Intumescent Sealant

The M Rating for the firestop system is dependent on the variables as noted in the Table 1 below.

Movement Direction	Penetrant Item	Nominal Penetrant Diam,	Annular Space	Movement
Y	All	4 in. (102 mm)	Max 2.5 in. (64 mm)	50%
Z	All	4 in, (102 mm)	2.5 in.(64 mm)	2.23 in(56.6 mm)

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