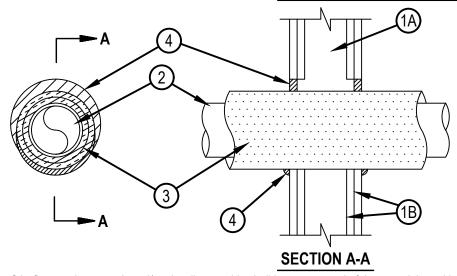


System No. W-L-5381

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings — 1 and 2 Hr (See Item 1)	F Ratings — 1 and 2 Hr (See Item 1)
T Ratings — 1 and 2 Hr (See Item 1)	FT Ratings — 1 and 2 Hr (See Item 1)
L Rating At Ambient — 4 CFM/Sq Ft	FH Ratings — 1 and 2 Hr (See Item 1)
L Rating At 400°F — Less Than 1 CFM/Sq Ft	FTH Ratings — 1 and 2 Hr (See Item 1)
•	L Rating At Ambient — 20.2 L/s/m²
	L Rating At 204°C — Less Than 5.1 L/s/m²



- 1. Wall Assembly —The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
 - A. Studs —Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 3-5/8 in. (92 mm) wide and spaced max 24 in. (610 mm) OC.
 - B. Gypsum Board* —Min 5/8 in. (16 mm) thick with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Design. Max diam of opening is 9-1/2 in. (241 mm). The hourly F, T, FH and FTH Ratings of the firestop system are equal to the hourly fire rating of the wall assembly in which it is installed.
- 2. Through Penetrants —One metallic pipe or tubing to be installed within the firestop system. Pipe or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes or tubing may be used:
 - A. Steel Pipe —Nom 4 in. (102 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
 - B. Iron Pipe —Nom 4 in. (102 mm) diam (or smaller) cast or ductile iron pipe.
- 3. Pipe Covering Material* Nom 0.5 in. (12.7 mm) flexible sheet material. Pipe covering shall be continuously wrapped around the penetrant for a minimum three layers, with a min 2 in. (51 mm) overlap at the seam in the final layer. Seam to be sealed with FSK or foil tape. Pipe covering to be secured in position using min No. 18 AWG steel tie wire located within 1 in. (25 mm) of wall and spaced max 6 in. (152 mm) OC. The annular space between pipe covering and periphery of opening shall be min 0 in. (point contact) to max 1-5/8 in. (41 mm).
 - HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC CFP-ES Endo-Shield
- 4. Fill, Void or Cavity Material* Sealant —Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point contact location between pipe covering and gypsum board, a min 1/2 in. (13 mm) diam bead of fill material shall be applied at the pipe covering/gypsum board interface on both surfaces of wall.
 - HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC 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.

