

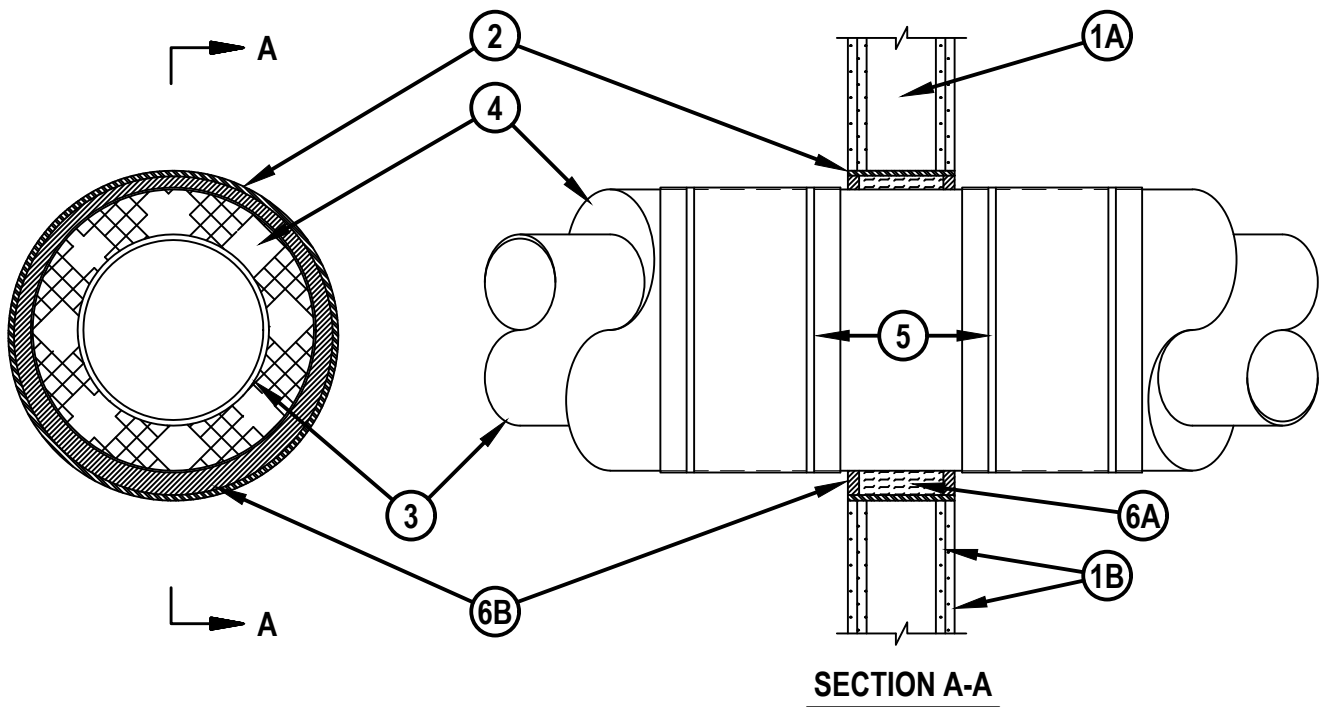


Classified by
Underwriters Laboratories, Inc.
to UL 1479 and CAN/ULC-S115

System No. W-L-5046

WL 5046

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 1 & 2 Hr (See Item 6)	F Rating — 1 & 2 Hr (See Item 6)
T Rating — 0 & 1 Hr (See Item 4)	FT Rating — 0 & 1 Hr (See Item 4)
	FH Rating — 1 & 2 Hr (See Item 6)
	FTH Rating — 0 & 1 Hr (See Item 4)



SECTION A-A

1. Wall Assembly — The fire-rated gypsum wallboard/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 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC.
 - B. Gypsum Board* — Nom 5/8 in. (16 mm) thick gypsum wallboard, as specified in the individual Wall and Partition Design. Max diam of opening is 14-1/2 in. (368 mm) for wood stud walls and 22 in. (559 mm) for steel stud walls.
2. Metallic Sleeve — Nom 22 in. (559 mm) diam (or smaller) Schedule 40 (or thinner) steel pipe cast into wall assembly with joint compound and installed flush with wall surfaces.



Hilti Firestop Systems

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3. Through Penetrants — One metallic pipe or tubing to be positioned within the firestop system. Pipe or tubing to be rigidly supported on both sides of wall assembly. The annular space shall be min 3/4 in. (19 mm) to max 3 in. (76 mm). The following types and sizes of metallic pipes or tubing may be used:
 - A. Steel Pipe — Nom 12 in. (305 mm) diam (or smaller) Schedule 40 (or heavier) steel pipe.
 - B. Copper Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.
 - C. Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.
4. Pipe Covering Materials* — Cellular Glass Insulation — Nom 1-1/2 in. (38 mm) or 3 in. (76 mm) thick cellular glass pipe insulation sized to the outside diam of the steel pipe or tube and installed in accordance with the manufacturer's instructions. T Rating is 0 hr when nom 1-1/2 in. (38 mm) thick pipe insulation is used in 1 hr and 2 hr fire-rated wall assembly. T Rating is 0 hr when nom 3 in. (76 mm) thick pipe insulation is used in 1 hr fire-rated wall assembly. T Rating is 1 hr when nom 3 in. (76 mm) thick pipe insulation is used in 2 hr fire-rated wall assembly.
5. Metal Jacket (Optional) — Min 12 in. (305 mm) long jacket formed of min 0.010 in. (.254 mm) thick steel or aluminum sheet cut to wrap tightly around the pipe insulation with a min 2 in. (51 mm) lap. Jacket secured with min 1/2 in. (13 mm) wide stainless steel hose clamps or bands located within 2 in. (51 mm) of each end of the jacket and spaced a max of 10 in. (254 mm) OC. Jacket to be installed with abutting surface of sealant (Item 6B) on both surfaces of wall. Metal jacket to be used in addition to any other jacketing material which may be required or desired on the pipe insulation.
6. Firestop System — Installed symmetrically on both sides of the wall. The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.
 - A. Packing Material — Min 2-1/4 or 3-1/2 in. (57 to 89 mm) thickness of min 4.0 pcf (64 kg/m³) mineral wool batt insulation firmly packed into opening as a permanent form for 1 or 2 hr walls, respectively. Packing material to be recessed from both surfaces of wall as required to accommodate the required thickness of fill material.
 - B. Fill, Void or Cavity Material* — Sealant — Min 3/4 in. (19 mm) thickness of fill material applied within the annulus, flush with both surfaces of the 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.