



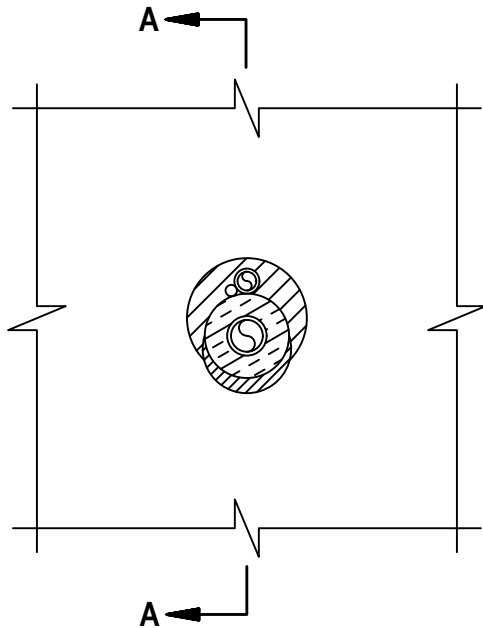
Classified by
Underwriters Laboratories, Inc.
to UL 1479 and CAN/ULC-S115

System No. W-L-8141

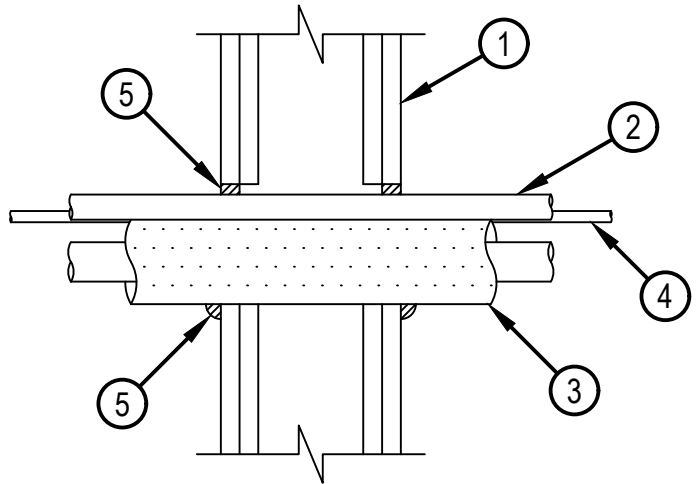
WL 8141

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating – 1 and 2 Hr	F Rating – 1 and 2 Hr
T Ratings – 1/4 and 1/2 Hr (See Item 3)	FT Ratings – 1/4 and 1/2 Hr (See Item 3)
L Rating at Ambient — Less Than 1 CFM/Sq Ft	FH Rating – 1 and 2 Hr
L Rating at 400°F — Less Than 1 CFM/Sq Ft	FTH Ratings – 1/4 and 1/2 Hr (See Item 3)
	L Rating At Ambient — Less Than 5.1 L/s/m ²
	L Rating At 204°C — Less Than 5.1 L/s/m ²

FRONT VIEW



SECTION A-A



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July 31, 2024

System No. W-L-8141

WL 8141

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 described in the individual U300, U400, V400 or W400 Series Wall or Partition Design in the UL Fire Resistance Directory and shall include the following construction features:
 - A. Studs —Wall framing shall 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 max 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* —The gypsum board type, thickness number of layers, fastener type and sheet orientation shall be specified in the individual Wall and Partition Design in the UL Fire Resistance Directory. Max diam of opening is 3-1/2 in. (89 mm).
2. Through Penetrants — One or more (max quantity of 2) pipe or tubing to be installed concentrically or eccentrically within the opening. The space between any penetrant and the periphery of the opening shall be min 0 in. (point contact) to max 1/2 in. (13 mm). Pipes 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. Copper Tube — Nom 1 in. (25 mm) diam (or smaller) Type L (or heavier) copper tube.
 - B. Copper Pipe — Nom 1 in. (25 mm) diam (or smaller) Regular (or heavier) copper pipe.
3. Tube Insulation — Plastics+ — Tube insulation to be installed on one of the metallic pipes or tubes. The following types may be used:
 - A. Ethylene Propylene Diene Monomer (EPDM) —Max 3/4 in. (19 mm) thick EPDM rubber furnished in the form of tubing.
 - B. Acrylonitrile Butadiene/Polyvinyl Chloride (AB/PVC) —Max 3/4 in. (19 mm) thick AB/PVC flexible foam furnished in the form of tubing.When Tube Insulation A is used, the T, FT and FTH Ratings are 1/4 and 1/2 hr for 1 and 2 hr rated assemblies, respectively. When Tube Insulation B is used, the T, FT and FTH Ratings are 0 and 1/4 Hr for 1 and 2 hr rated assemblies, respectively.
See Plastics+ (QMFZ2) category in the Plastics Recognized Component Directory for names of manufacturers. Any Recognized Component tube insulation material meeting the above specifications and having a UL 94 Flammability Classification of 94-5VA may be used.
4. Cable — Max of one 4 pair No. 18 AWG (or smaller) cable with PVC insulation and jacket materials.
5. Fill, Void or Cavity Material* - Sealant — Min 5/8 in. (16 mm) thickness of fill material applied within annulus between penetrants and gypsum board, flush with both surfaces of wall. At point contact, a 1/2 in. (5 mm) bead of fill material shall be applied at the penetrant/gypsum board interface on both sides of wall.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — 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.